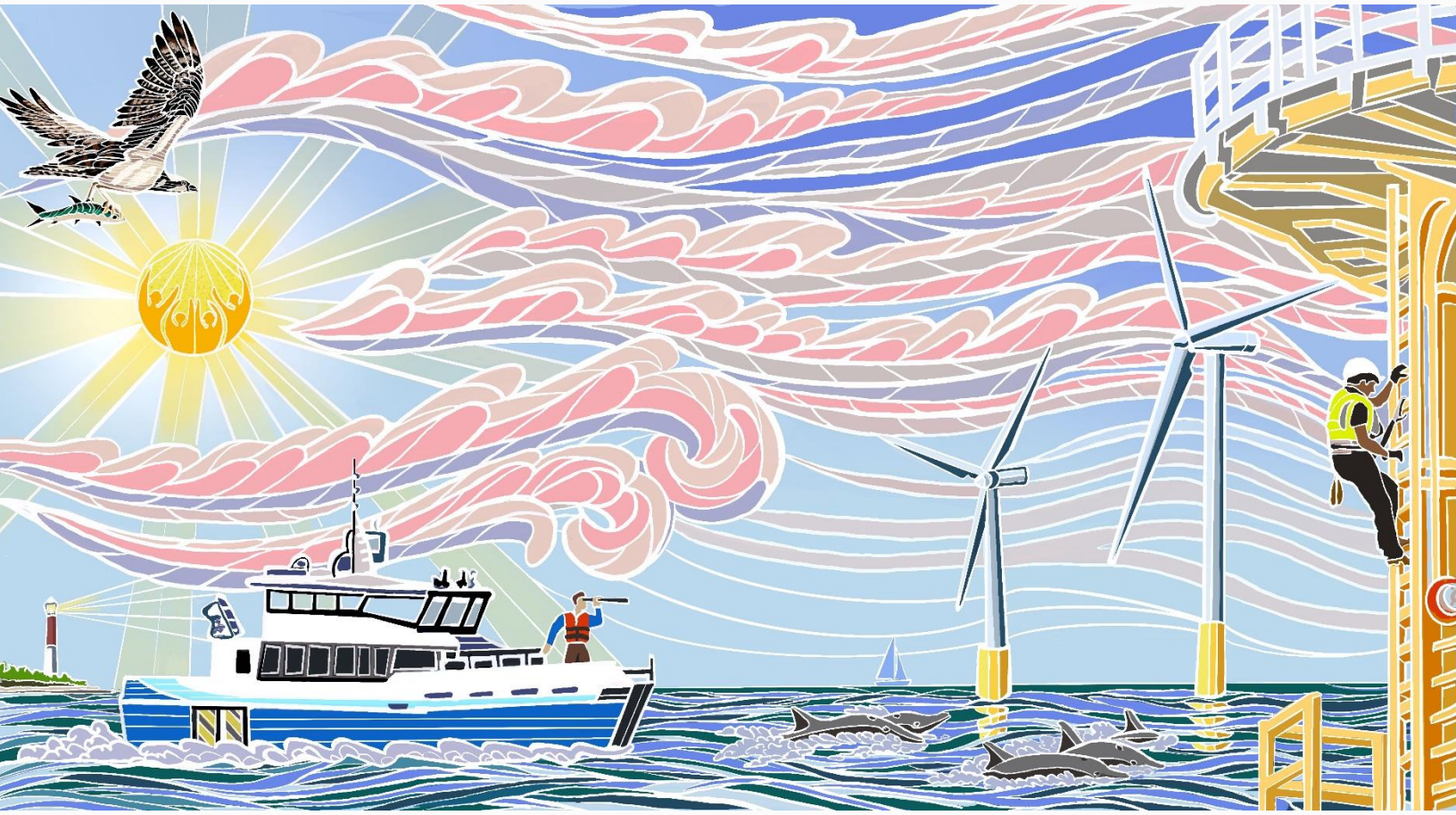

Atlantic Shores Offshore Wind

NEW JERSEY OFFSHORE WIND SOLICITATION 3

August 2023

ATLANTIC SHORES offshore wind

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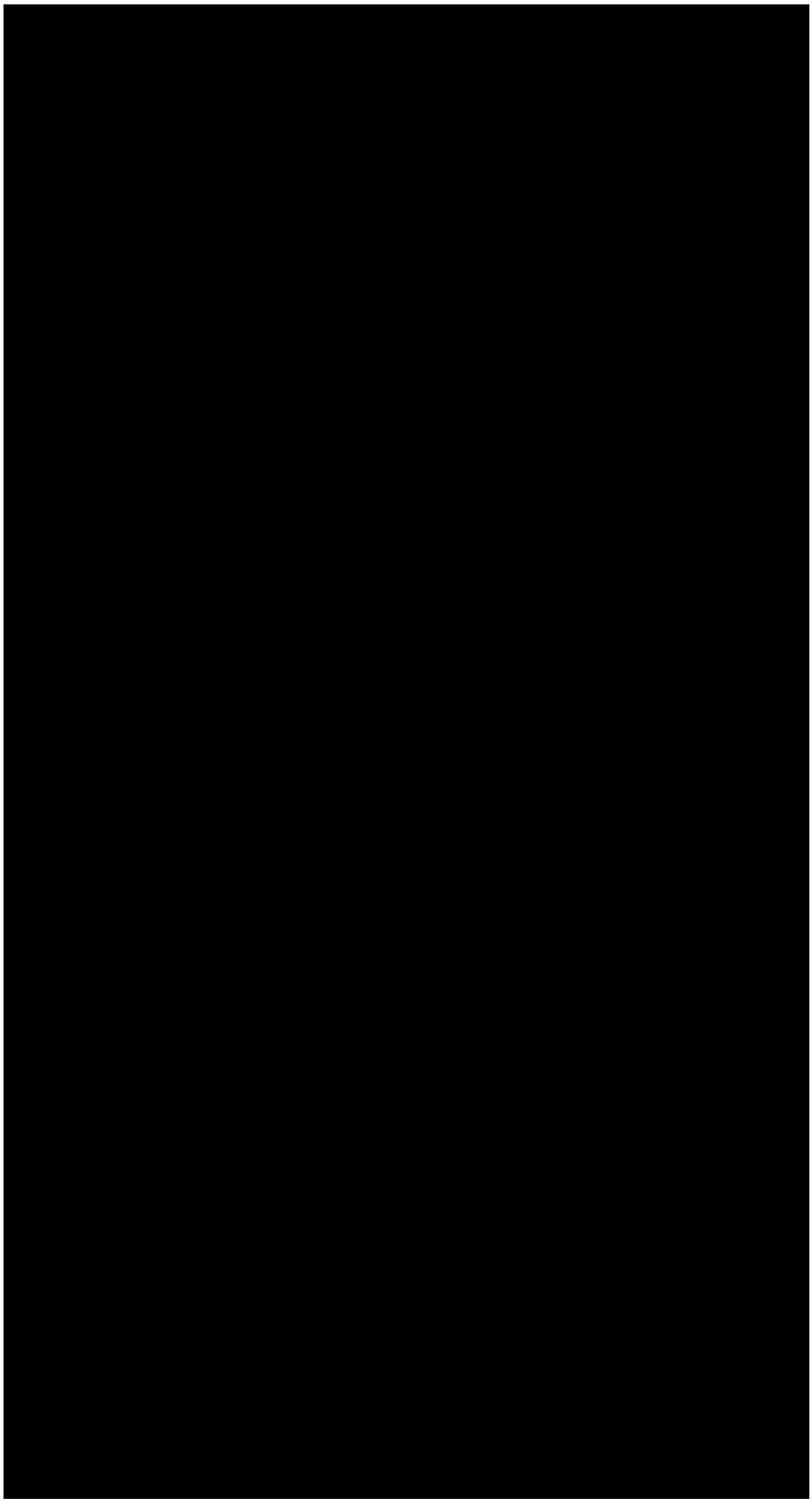

ATLANTIC SHORES offshore wind

Executive summary

Introduction

New Jersey has set one of the most ambitious clean energy goals in the US, aiming to power the State exclusively with clean energy by 2035. Since the adoption of these goals, the Garden State has rapidly expanded its offshore wind (OSW) portfolio and is aiming to install 7,500 MW by 2035 and 11,000 MW by 2040. The State rightly sees itself as a leading hub for OSW development and a home to key parts of the supply chain. In fact, this vision is already on its way to becoming a reality, through State initiatives such as the New Jersey Wind Port (NJWP), the NJ WIND Institute, as well as through firm local content commitments by NJ-oriented developers Commitments such as Atlantic Shores' Project 1, including Phase 2 monopile manufacturing in Paulsboro, hub assembly at the NJWP and major investments in innovation, workforce development and environmental research, are only a start to the NJ offshore wind hub.

New Jersey's objectives are bold, clear, and strongly incorporated into this 3rd Solicitation process:

- Transition away from fossil fuels and build an offshore wind portfolio that provides all residents with access to an affordable, reliable, and sustainable energy system.
- Maximize benefits to New Jersey residents and become a hub for the US offshore wind supply chain, bringing economic growth to the State over the next several decades.
- Minimize negative effect on the environment, stakeholders, and local communities to ensure broad public support for each project.
- Drive energy innovation by promoting research into clean energy technologies and transportation electrification to advance the State's sustainability goals and reduce environmental impacts.

We at Atlantic Shores wholeheartedly share this vision of New Jersey and are committed to supporting the State in making it a reality. We offer [redacted] in this Application, building on our experience and track record of Atlantic Shores' Project 1.

Our Proposal entails [redacted]

[redacted]

(SMWVBEs). Our project is specifically tailored to meet the needs of New Jersey. Out of our total +5 GW OSW portfolio (Portfolio) combining our New Jersey and Bight lease areas, we selected our most advanced, deliverable, and competitive project to provide the State with a de-risked, attractive, and reliable offer.

Our [redacted]

[redacted] It is the result of over 4 years of active onshore and offshore development, stakeholder engagement, engineering, and design by our dedicated team.

Our Prebuild Infrastructure (PBI) proposal is the most advanced proposal available, leveraging substantial environmental, technical, stakeholder engagement work initiated prior to the State Agreement Approach (SAA) award. Atlantic Shores started developing this route since late 2018 as we always looked at interconnection beyond Project 1. The unmatched maturity of our PBI guarantees on-time delivery, accommodating the CODs of any other future Qualified Projects.

In line with our approach to delivering our 1,510 MW Project 1, which was awarded an OREC Order pursuant to New Jersey's 2nd Solicitation process, we have and will continue to develop [redacted] as a responsible developer, true to our values of: *Be safe, Be a good neighbor, Be a good steward of our environment* and *Lead with science*.

Our Proposal aligns with all requirements outlined by the NJ BPU in the 3rd Solicitation Guidance Document (SGD) and builds further on our unique understanding of the State's expectations. Our Application is based on ten cornerstones, detailed on the following page. The unique combination of these cornerstones – if the Project is awarded in this Solicitation – will provide lasting benefits and economic opportunities to New Jersey residents. Atlantic Shores' promise to New Jersey is summarized below, and further developed in our Application.

[redacted]

ATLANTIC SHORES offshore wind

ATLANTIC SHORES offshore wind

Ten reasons why we are the best partner for New Jersey

1 We have a proven track record as a local, trustworthy and safe developer

Our local team, now counting over [redacted] employees, has been on the ground since 2018, working diligently to make Atlantic Shores the offshore wind partner of choice on the East Coast.
Since our previous application in the 2nd Solicitation, our team has grown significantly to support our Portfolio development ambitions. Our growth demonstrates both Atlantic Shores' commitment to delivering towards New Jersey's OSW goals and our appeal as the employer of choice amongst a highly sought pool of talent. If awarded in this Solicitation, Atlantic Shores plans to increase the size of our team to at least [redacted] employees to deliver on our commitments, with a goal to locate a sizable portion of our staff at a new office which we plan to open in New Jersey. [redacted] Our key employees are, for the vast majority, still the same people that have collaborated with the NJ BPU and other agencies since 2019 and are now successfully delivering on the commitments made through Project 1. You can continue to count on our team.

Our experts bring global experience and a proven track record across all involved entities in developing, planning, financing, constructing, and operating offshore wind farms across the globe and in the US. Collectively, our experts have delivered on over 50 large-scale energy projects, including offshore and onshore wind, solar renewable projects, as well as multiple large infrastructure projects for utilities and other energy sources. Our team's track record outside of Atlantic Shores includes projects such as the first US offshore wind farm – the Block Island Wind Farm - and the first Federal offshore wind farm under BOEM jurisdiction – the Coastal Virginia Offshore Wind Farm.

We prioritize the safety of our community and team. Safety has been a cornerstone of our corporate culture since our founding in 2018. The Atlantic Shores geoscience team for instance has safely completed more than [redacted] In addition, our team has assisted mariners in distress on several occasions.

You know our people as trustworthy and reliable, having experienced our core values firsthand through your first two offshore wind solicitations and further through our collaboration on Project 1. We have consistently demonstrated transparency, directness, and a will to work shoulder-to-shoulder with the State to develop the OSW industry. As a trusted and reliable partner, we have been open and upfront about [redacted] industry trends and local dynamics. Atlantic Shores always remains committed to transparency, to be forthcoming, to seek industry solutions and to deliver on our promises. This approach will remain our constant for delivering [redacted] and the PBI.

We bring extensive local hands-on experience from developing Project 1 in NJ, the largest project awarded in the State and third largest in the US. Project 1 is making significant progress on its path to deliver 1.5 GW of electricity to NJ, [redacted] This Application and our future delivery plan of [redacted] directly leverage lessons learned from Project 1, such as learnings on project schedule especially in the NJ interconnection and permitting context, risks and mitigations, and project design. If awarded, Atlantic Shores is open to share these incumbent's insights with other, new NJ Qualified Applicants to support the success of the NJ OSW program. We also leverage latest market information based on our established relationships with several Tier 1 suppliers and take advantage of our ongoing market engagement through Project 1's procurement activities.

As a result, we know New Jersey better than any other developer. We will actively leverage our knowledge of the State, the PJM market, our established relationships with agencies, stakeholders, utilities, communities, and suppliers to develop our [redacted] as best serves the State. An award of [redacted] will cement NJ as our home, and further root us in the communities we serve.

For more details refer to chapter "1. Applicant information".

2 We bring the combined expertise and financial strength of Shell and EDF to New Jersey

Our Shareholders EDF Renewables and Shell New Energies bring state-of-art technical expertise from two world-class companies, EDF and Shell. We draw upon hundreds of renewables and offshore specialists across the globe, leveraging significant experience and a proven track record in designing, constructing, procuring, operating, and managing a combined renewables project capacity over 24 GW, including over 16 GW in the US alone.

Through our ultimate parent organizations, we have access to a skilled 27,700-person combined workforce in the US alone, specialized in developing and bringing renewable power to the grid. This includes overcoming technical challenges, optimizing reliable energy output, minimizing, and managing costs, risks, and schedules, building local supply chains, and harmoniously coexisting with other sea and land users.

In addition, we can tap into an extensive network of contractors, stakeholders, and Federal authorities, and leverage their experience with unions and the US permitting system.

Beyond technical expertise, we benefit from the collective financial capabilities of Shell and EDF with a combined balance sheet of $831 billion. Their exceptional financial capacity contributes to our ability to secure fair and competitive financing terms. Our Shareholders have extensive project financing experience and capabilities, having secured billions for OSW projects globally. We will leverage their buying power to optimize our cost base and minimize delivery risks.

The unique tax credit experience of EDF Renewables in the US, having successfully raised [redacted] in tax equity in the past to finance their portfolio, is invaluable to Atlantic Shores. We will leverage their expertise, as well as our experience from Project 1 to maximize value to [redacted] as illustrated in our proposed OREC price options and potential avenues for optimization, whereby any additional benefits not currently assumed will be returned to New Jersey ratepayers.

For more details refer to chapters "1. Applicant information; 5. Project financing plan; 6. Documentation of financial incentives".

Table 0-1: Atlantic Shores Shareholders' key strengths and information

Ultimate Shareholders		
Size of balance sheet (Dec. 2022)	$443 billion	€ 388 billion
Credit rating (Moody's long-term)	Aa2	Baa1
Global / US workforce	93,000 / 23,000	171,500 / 4,700
Gross global / US renewable capacity (incl. under construction)	6,400 / 2,292 MW	18,500 / 16,000 MW

3 We offer a uniquely mature, low-risk site

We offer our [redacted] from our +5 GW offshore wind Portfolio. Out of our entire Portfolio, [redacted] deliverability timeline and OREC price. Out of all projects in this Solicitation, [redacted] essentially providing the State with the most deliverable project available in the New Jersey / New York area [redacted]. Our steadfast dedication to maturing this Project demonstrates our commitment to the Garden State.

Our clear ambition is to offer the most advanced, de-risked project to the State. The ongoing challenges of the OSW industry, where developers face rising commodity prices, supply shortages and constraints, rising interest rates, and State requirements with regards to performance securities, hinder deliverability of immature, projects that present much longer development timelines before a firm FID timeline can be established. We have therefore purposefully selected our [redacted] for this Solicitation, [redacted]

Our robust, de-risked business case builds on actual collected in-situ data and over 4 years of work rather than environmental and geological assumptions. During this time, we conducted extensive design and feasibility studies, onshore and offshore geophysical, geotechnical, and environmental surveys, as well as substantial stakeholder engagement and relationship cultivation to develop [redacted] Regarding surveys, we have collected [redacted] to further strengthen the reliability of our assumptions. Our business case is further de-risked based on our substantial, long-term engagement and strong connection with key suppliers. This includes our strategic partnerships with [redacted]

[redacted] Our [redacted] Proposal leverages the latest offers from these key suppliers, as well as binding [redacted]. Our technology choices for this Proposal also specifically target proven and certified concepts such as [redacted] We demonstrate a deep understanding of what is required to develop our projects. We believe this understanding coupled with the wealth of data we have acquired positions [redacted] as the most credible and robust path towards effective delivery by the proposed target COD.

New Jersey will receive clean electricity [redacted] based on our deep expertise and knowledge of the permitting process, supply chain timelines (especially for a HVDC substation), and the requirements of setting up a localized supply chain, as well as our experience in the NJ market. Upon award in early 2024, [redacted] Hence, we are closely supporting New Jersey in achieving its ambitious targets on installing 11 GW of offshore wind capacity by 2040 and achieving 100% clean electricity by 2035.

For more details refer to chapters "2. Project description; 3. Energy production estimate, 12. Project timeline, 14. Permitting plan".

ATLANTIC SHORES offshore wind

Our proposal at a glance

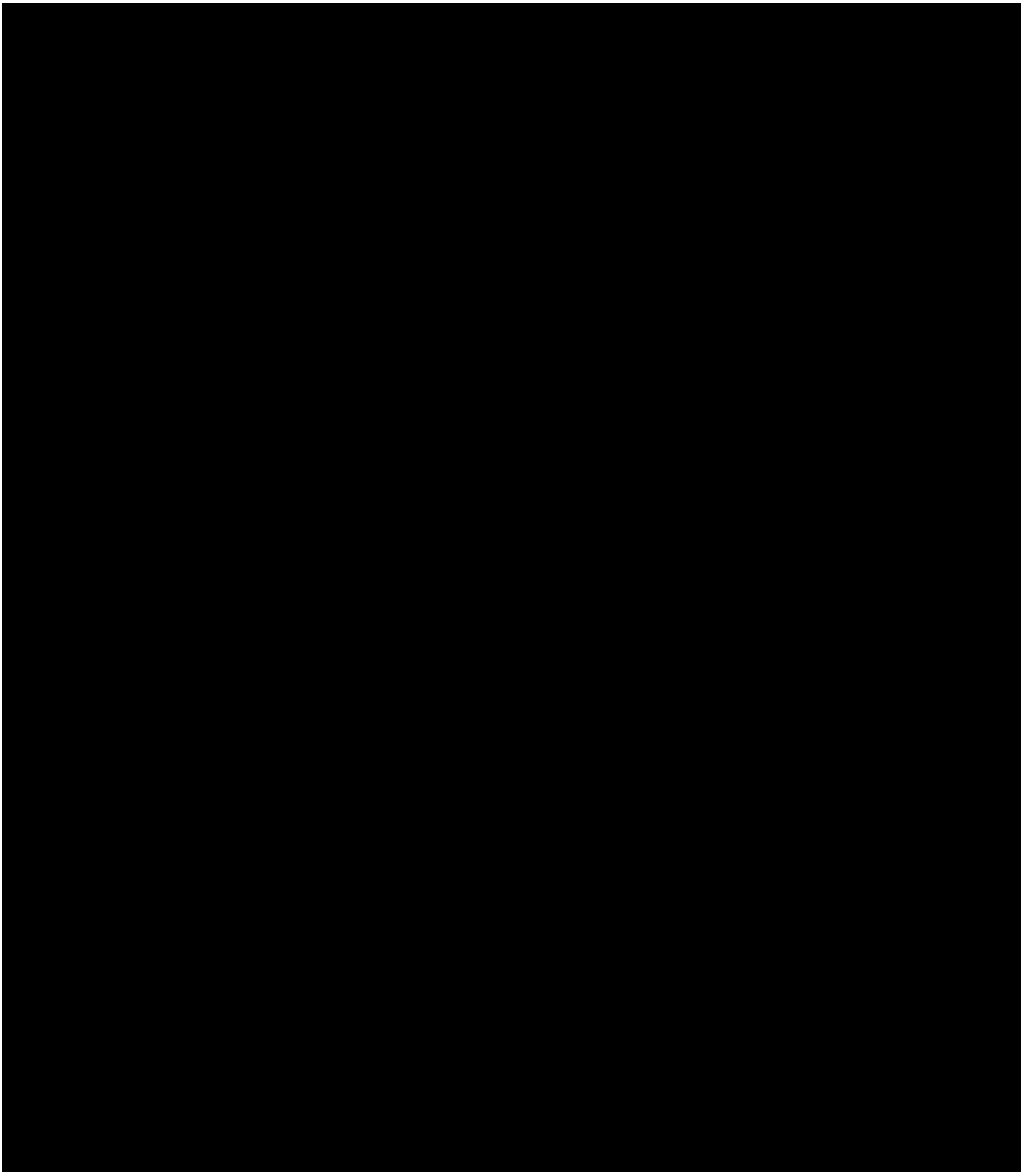

Table 0-2: Proposed project details

Characteristic	Details
Project name	[redacted]
Lease Area	[redacted]
Project installed capacity (MW)	[redacted]
Point of Interconnection (POI)	Larrabee Collector Station (LCS), [redacted]
Project injected capacity[1] at POI (MW)	[redacted]
[redacted]	[redacted]
Turbine	[redacted]
Foundation	[redacted]
Export cable type	[redacted]
IAC cable voltage	[redacted]
Target COD	[redacted]
Marshalling, staging and construction port	[redacted]
Operations and Maintenance port	[redacted]
Latest completion date of the PBI	[redacted]

[1] [redacted]

[2] [redacted]

[3] Please refer to Chapter 8 - Economic development plan for details. [redacted]

[4] [redacted]

4 We deliver cost-effective clean energy

We will leverage the scale of our Portfolio, offering [redacted] over our current 1,510 MW Project 1, another substantial step towards New Jersey's 11 GW offshore wind target. [redacted]

We will minimize ratepayer impact as one of our key objectives. We consequently dedicate our efforts to maximize energy output and provide the lowest reasonable levelized cost of energy through an optimized design, deliberate market outreach, careful supplier selection, while reducing emissions throughout the project lifecycle, and securing sound financing including by [redacted] Moreover, we will continue to explore all options for additional revenue streams and further tax incentives to maximize the refund to ratepayers and offer a competitive future price of electricity in New Jersey.

Our OREC price is robust, with the most credible path towards delivery. We rely on robust in-situ data from over 4 years of on- and offsite work that enables us to ensure our designs and pricing are firmly grounded in reality and deliverable. Through our extensive work in the State, including our two COP submittals, we benefit from a deep knowledge that is not easily available to new entrants in the NJ market. Our Project's design and OREC price assumptions have been reviewed, validated, and approved by our Key Employees and through a thorough Shareholder assurance process. Our proven approach and reputation ensure not only [redacted] further driving down deliverability risk.

For more details refer to chapters "4. Financial analysis; 5. Project financing plan; 6. Documentation of financial incentives; 7. Project revenue plan and strategy".

5 We deliver a secure, reliable interconnection solution and Prebuild Infrastructure

We fully support the SAA and Prebuild Infrastructure approach, consistent with our ongoing commitment to expand and develop offshore wind with minimal impact on environment, ratepayers, and residents, as was already proposed in our Project 1 offer under the 2nd solicitation. Our proposed interconnection solution complies fully with the SAA-order, using the requested landfall and point of interconnection, and optimizing ITC benefits for the PBI.

We minimized our solution's delivery risks and increased our flexibility [redacted]

We offer the most mature and de-risked Prebuild Infrastructure proposal available. Our plans leverage our local interconnection knowledge and development efforts started before the SAA award in anticipation of this Solicitation. Atlantic Shores proactively identified the Sea Girt NGTC and Larrabee as our preferred landfall and POI for [redacted]. For this reason, we have invested substantial efforts and resources to date to develop this onshore route over the last 4 years. This includes comprehensive constructability studies, environmental assessments, geotechnical and topographical surveys, utility markouts and extensive outreach to impacted communities as well as utility owners along the route [redacted] As a result, we can commit to completing the PBI as early as [redacted], ensuring a timely delivery for any project qualified by the NJ BPU in this Solicitation. Additionally, we propose fair and comprehensive legal structures to govern the relationship with PBI users as well as MAOD, which not only ensures good collaboration between all parties but also maximizes ITC capture for the benefit of the NJ ratepayer. We come forward as the most advanced developer with regards to the PBI, with no other developer matching our level of maturity and ability to deliver a low-risk PBI solution to the State.

Our view on Prebuild Infrastructure costs is market-proven. Atlantic Shores [redacted]. As a result, we have real-time visibility of the market price for such civil works.

We have involved local suppliers and contractors early on to de-risk development. [redacted] from New Jersey are supporting us on the PBI constructability and design as well as cost and schedule estimations, as evidenced by their letters of support. We leverage their specific, local expertise for construction work, vaults, manholes, and concrete excavation to maximize benefits to New Jersey and optimally de-risk the PBI offer – which is critical to deliver the full NJ portfolio and 2035/2040 renewable power goals.

For more details refer to chapters "13. Interconnection plan, 14. Permitting plan".

6 We provide continuity to the nascent NJ supply chain and extend its footprint

If selected, we promise significant local content for the development, construction, operation, and decommissioning of our [redacted]. As part of these efforts, we will offer a total of up to [redacted] billion guaranteed in-State spend and create up to [redacted] guaranteed development and construction jobs in the Garden State[5], incremental to our Project 1 commitments. The resulting, increased total economic activity within the State will total up to [redacted][6]. A key element of our supply chain strategy is [redacted] Our efforts will indeed [redacted]. We follow a portfolio approach to establish a long-term supply chain in the State that ultimately benefits our projects and NJ's communities.

Supporting and enabling SMWVBEs is a key priority within our efforts to expand and strengthen the local supply chain. We will prioritize and support SMWBVEs, reflected in our commitment to invest [redacted] Our investment aims to [redacted] Moreover, our deep partnership with the [redacted]

We will expand the offshore wind supply chain for construction in the State. [redacted]

Our proposal expands [redacted]

[5] Both reflecting [redacted]

[6] Reflecting direct, indirect and induced benefits for [redacted]

[7] [redacted]

[redacted] can be manufactured in New Jersey and will bring value for the long term, particularly as this unique component [redacted]

With respect to operations, we will expand our O&M activities at our proposed facility in Atlantic City, [redacted] on top of our 88 Project 1 jobs, including technical service, maintenance, and repair as well as the management of our O&M facilities. We expect and will make extra efforts for these positions to be filled by NJ residents, mostly from nearby overburdened communities and [redacted] These activities will last throughout the entire [redacted] lifecycle of the Project, thus representing long-term, sustainable opportunities for NJ residents [redacted] In addition, our Proposal will create economic activity for a wide range of subcontractors including shipyards, spare-part producers and vessel and harbor services. We expect an estimated annual in-State spending of minimum [redacted] over our entire Operations phase.

Finally, we will maximize benefits to local suppliers and contractors during decommissioning. After the operational life of our Project, we have specific plans to maximize the use of local suppliers and contractors during decommissioning, which will generate an additional [redacted] in in-State spending.

The growing local supply chain requires a developed, skilled workforce, which is supported through the key initiatives that we pursue and the Memorandum of Understanding (MOU) we signed with five key unions. We partner with local suppliers and unions to develop a state-of-the-art training program, while committing to trained labor forces that earn standard area wages across the supply chain. Since executing the MOU in 2020, we have strengthened our commitment to utilizing a union workforce [redacted]. In addition, as part of our Project 1 efforts which will benefit [redacted] we have developed a [redacted]. We will continue existing initiatives such as our [redacted]

For more details refer to chapters "8. Economic development plan; 15. O&M plan; 16. Decommissioning plan; 17. Cost benefit analysis".

[8] Reflecting [redacted]

[9] [redacted]

Table 0-3: New Jersey economic activity summary

Economic benefits to NJ	[redacted]	[redacted]
Direct spending ($ million)	[redacted]	[redacted]
Indirect spending ($ million)	[redacted]	[redacted]
Induced spending ($ million)	[redacted]	[redacted]
Direct jobs (FTE)	[redacted]	[redacted]
Indirect jobs (FTE)	[redacted]	[redacted]
Induced jobs (FTE)	[redacted]	[redacted]

7 We invest in local and underserved communities

In delivering [redacted] we will remain committed to educating our communities about OSW and expand our ongoing groundwork. We are committed to implement and scale high-quality public information, education and research programs to increase positive public sentiment for not just offshore wind, but the entire ecosystem of NJ's thriving clean energy economy. For this purpose, Atlantic Shores will [redacted] We will also grow our partnership with the [redacted] where Atlantic Shores will underwrite the DIY [redacted] In addition, we will continue to host signature events at our [redacted]

We will focus on expanding training access for overburdened community (OBC) residents facilitating well-paying and stable careers in this new industry. To achieve this, we partner with [redacted]. Our partnership with the [redacted] invests into preparation programs for the [redacted] and provides funding support for participants to attain the program's [redacted] Furthermore, we will allocate funding to the [redacted]

[redacted] To further support career growth, Atlantic Shores will invest in [redacted]. Our comprehensive initiatives will play a vital role in creating numerous career opportunities in offshore wind, renewable energy, energy efficiency, green building, environmental remediation, and related fields for OBC residents.

We also actively engage the NJ veteran community in the offshore wind industry. We will expand our partnership with the [redacted]

For more details refer to chapter "8. Economic development plan, 9. Stakeholder engagement".

8 We will decarbonize New Jersey, particularly in O&M and transportation

If awarded [redacted] we will transform ground and marine transportation, by[redacted]. In addition, we will conduct a study together[redacted]

We will reduce the carbon footprint of our O&M activities by maximizing the use of [redacted] in our local fleet, as well as installing [redacted]. We plan to also explore smaller-scale solutions such as a [redacted]

We are partnering with [redacted]**,** contingent upon [redacted] being selected as a Qualified Project. This represents a key element of our efforts to invest in innovative and impactful decarbonization technologies. [redacted]

We substantially reduce carbon emissions in New Jersey by[redacted]. As a result, the Project effectively helps NJ reduce its emissions below its target [redacted]

For more details refer to chapters "2. Project description; 8. Economic development plan; 10. environmental protection plan and emissions impacts; 15. O&M plan"

Table 0-4: Energy and emission offset summary

[redacted]

9 We have gained strong, local support for Atlantic Shores and our Portfolio over the past 4 years

Over the past 4 years, we gathered extensive buy-in for our efforts, having conducted [redacted] and outreaches to NJ communities, academic institutions, commercial and recreational fisheries, and eNGOs in support of our efforts in the State. The support we gained is evidenced by over [redacted], that we collected from selected partners, such as [redacted] Through our numerous consistent touchpoints, conversations, and collaborations we have developed a profound understanding of their concerns, empowering us to implement initiatives and develop our Project in ways that address their needs effectively. In fact, our partners have stated their extensive support for our [redacted]

We will keep working hand-in-hand with our stakeholders. Our successful collaboration with these stakeholders continues to be instrumental particularly for the permitting of our Project, and the design of our onshore transmission route. With respect to Federal permitting, we meet bi-weekly with BOEM and NEPA coordinators, while maintaining regular connects with State agencies such as the NJ EDA and NJ DEP. As a result of our close collaboration over the past 4 years, we can confidently bring forward our deep understanding of the permitting regime and our assumed permitting schedule. Regarding the transmission route, Atlantic Shores has had extensive interactions with the impacted communities of [redacted]. Through these productive discussions we have jointly identified an optimal route designed to minimize footprint, community and environmental impacts and maximize benefits.

We also have a uniquely strong partnership with the fishing industry that continues to thrive through our long-standing collaboration and liaison program. In line with our core value of *Being a good neighbor*, we have been engaging with key fisheries representatives and appointed dedicated Atlantic Shores fishery representatives even before the acquisition of our Lease Area in 2018. To date, we have met and will keep meeting with fisheries groups and individuals from [redacted]. We serve on the [redacted]. In addition, we were the first developer to bring in a recreational fishery representative 3 years ago and keep strengthening our relationships with all fishing industries continuously.

[redacted]

For more details refer to chapters "9. Stakeholder engagement; 10. Environmental protection plan and Emissions Impacts; 11. Fisheries protection plan".

Figure 0-1: Counties engaged (turquoise) in the development of our Project and initiatives.

[redacted]

10 We are a steward of the environment, wildlife, and fisheries protection

We support wildlife and environmental protection and restoration by partnering with fisheries and leading research institutions. As part of our commitments, we will grant [redacted] to advance initiatives with key local partners such as [redacted] Our efforts include environmental monitoring and open data sharing, but also targeted protection and restoration [redacted]

As a Good Neighbor, we combine these environmental monitoring efforts with our open data sharing, contributing to scientifically sound, cutting-edge resource assessments of NJ's marine, coastal and terrestrial ecosystems. Over the past 3 years, we have collected extensive environmental data on the Mid-Atlantic Cold Pool using [redacted]. For this purpose, we also share the collected data transparently and openly with [redacted], MARACOOS, public databases and government agencies to support targeted research initiatives as well as the monitoring of climate change trends.

We monitor offshore bat activity and support endangered species restoration. With respect to bats, [redacted] to support their research. With respect to endangered birds, we partner with Wildlife Restoration, American Littoral Society, and US Fish & Wildlife to promote the recovery of the threatened red knot by restoring horseshoe crab habitats on Delaware bay.

We [redacted]. As part of this effort, we seek to understand and mitigate the impact of OSW development and climate change on [redacted]

[redacted]

We aim to advance the detection and monitoring of marine mammals to avoid vessel strikes and address recent concerns arising from whale strandings. [redacted]. In this partnership with fisheries, technology providers, and other marine industry members, we aim to [redacted]

For more details refer to chapters "10. Environmental Protection Plan and Emissions Impact, 11. Fisheries Protection Plan".

Through our 4 years of deep involvement and the commitments made to the State with Project 1, Atlantic Shores has become an integral part of the New Jersey ecosystem. As such, we are striving to continue bringing value to the State, with clean, affordable energy delivered through a mature and robust [redacted] and PBI Proposal, to be implemented by our dedicated and well-established team. Through [redacted] we will keep demonstrating to the State and the offshore wind industry the value of developing this indispensable form of renewable energy Safely, as a Good Neighbor, a Good Steward of our Environment and by Leading with Science.

Atlantic Shores Offshore Wind

NEW JERSEY OFFSHORE WIND SOLICITATION 3

Proposal Chapters 1 – 17

ATLANTIC SHORES offshore wind

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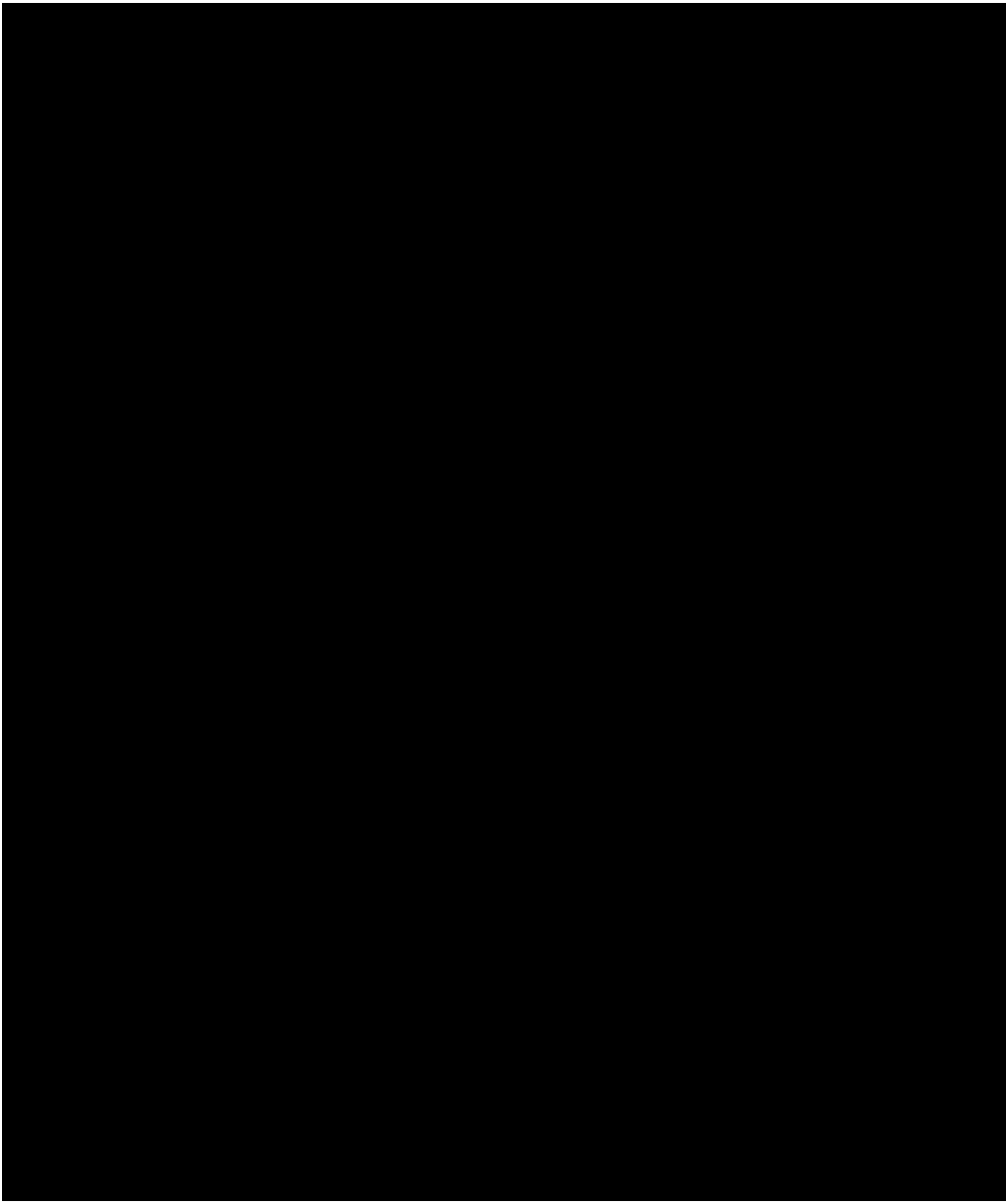

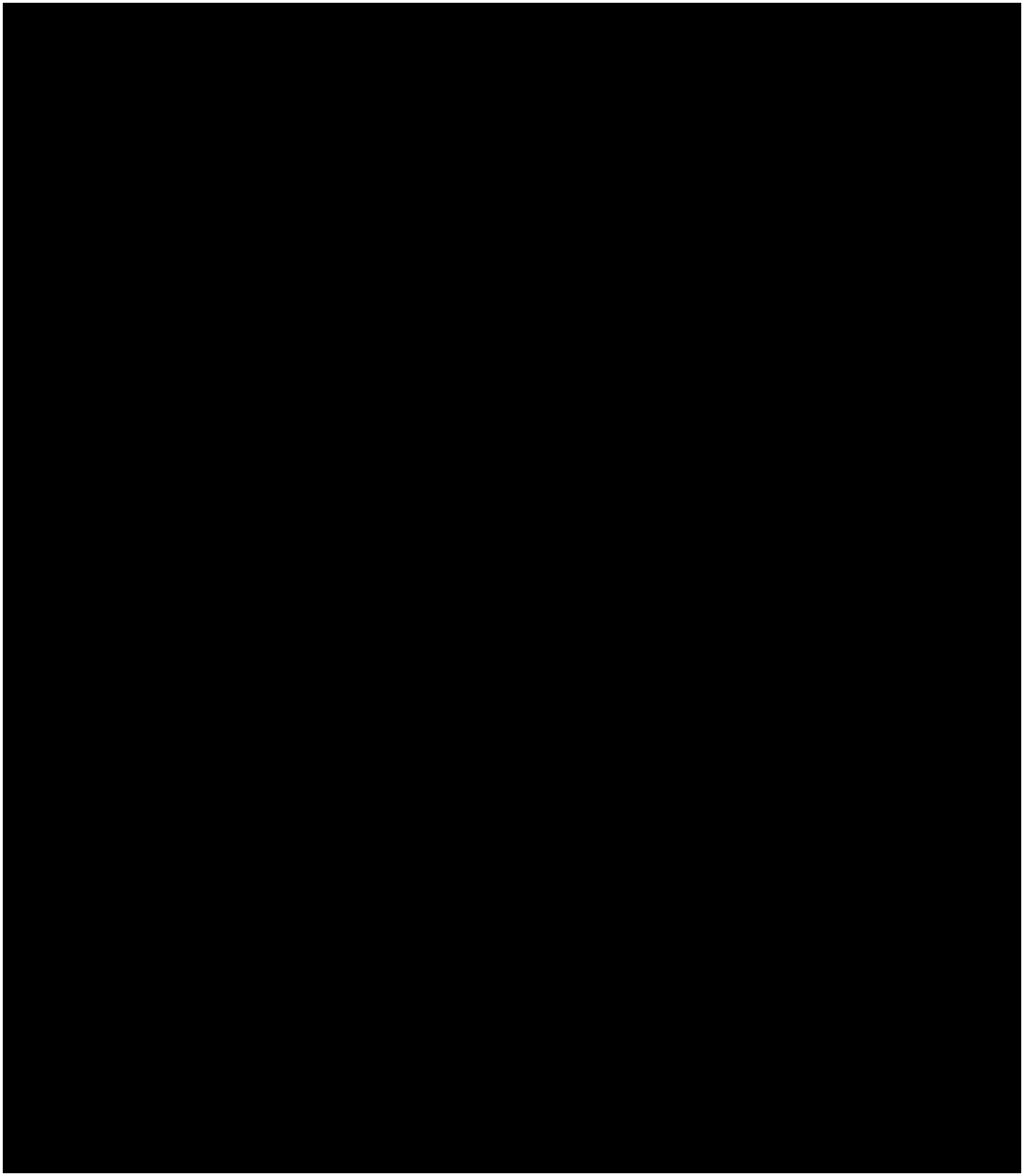

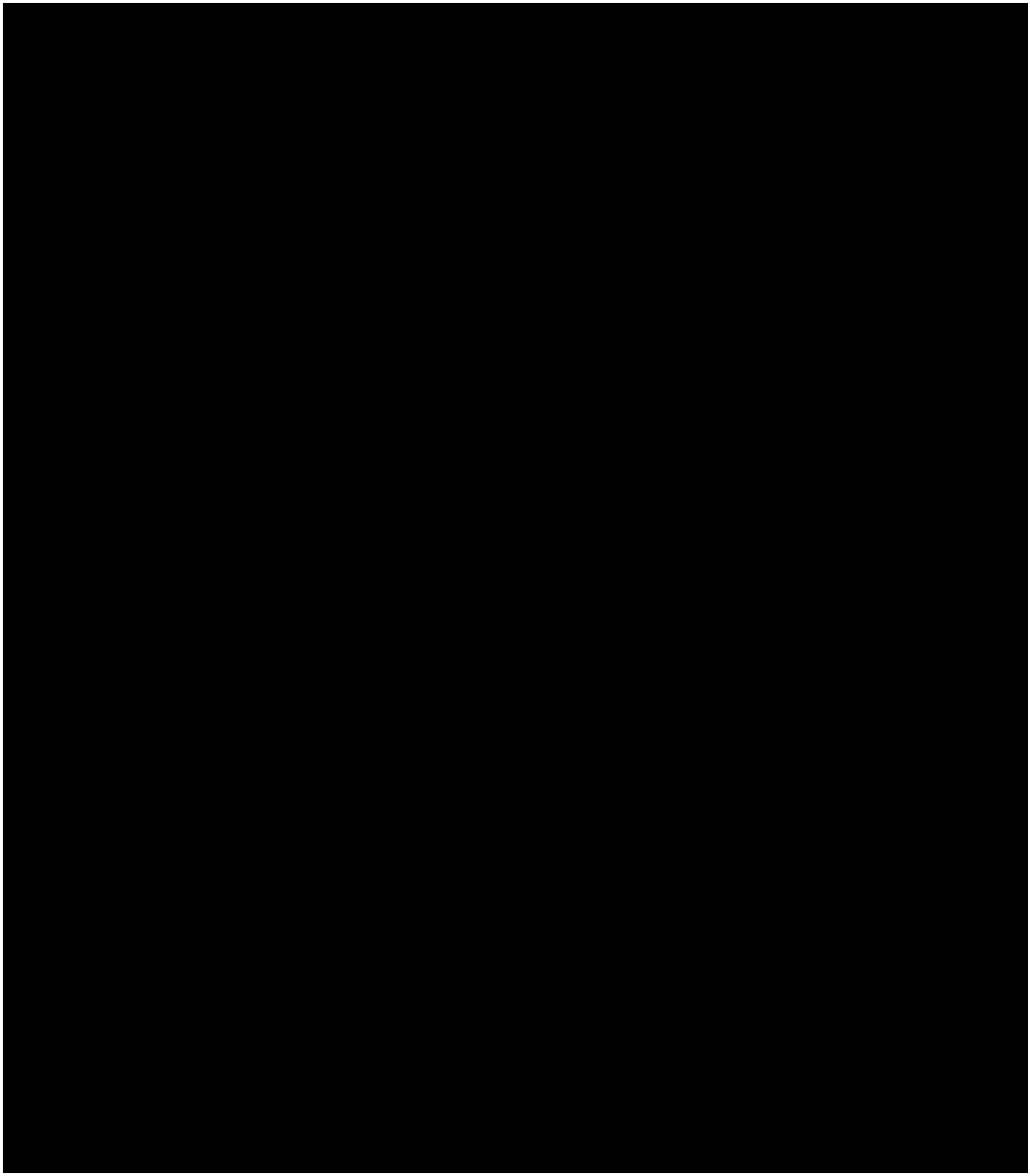

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Appendix 9-9: [redacted] Letter of Support

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List of acronyms

Acronym	Meaning
°C	Celsius degrees
AC	Alternating Current
ACE	Atlantic City Electric
ACHP	Advisory Council on Historic Preservation
Acre	unit of land area equal to 4,840 square yards (0.405 hectare) (4,047m^2)
AIS	Air Insulated Switchgear
AIS	Automatic Identification System
APE	Area of Potential Effect
Atlantic Shores	Atlantic Shores Offshore Wind, LLC
AWEA	American Wind Energy Association
BGEPA	Bald and Golden Eagle Protection Act
BOEM	Bureau of Ocean Energy Management
BoP	Balance of Plant
BRA	Base Residual Auction
BSEE	Bureau of Safety and Environmental Enforcement
CAPEX	Capital Expenditures
CFR	Code of Federal Regulations
CIR	Capacity Injection Right
CLV	Cable Laying Vessel
CMECS	Coastal and Marine Ecological Classification Standard
CMS	Condition Monitoring System
CO	Carbon Monoxide
CO2	Carbon Dioxide
COD	Commercial Operation Date
COLREGS	The International Regulations for Preventing Collisions at Sea
COP	Construction and Operations Plan
CPS	Cable Protection System
CPT	Cone Penetration Test
CTV	Crew Transfer Vessel
CVA	Certified Verification Agent
CZMA	Coastal Zone Management Act

Acronym	Meaning
DAS	Distributed Acoustic Sensing
dB	Decibels
DC	Direct Current
DEVEX	Development Expenditure
DEIS	Draft Environmental Impact Statement
DLUR	Division of Land Use Regulation
DMAVA	New Jersey Department of Military and Veterans Affairs
DoD	US Department of Defense
DoE	US Department of Energy
DOI	US Department of the Interior
DP	Dynamic Positioning
DP2	Data Processing Technician Second Class
DTS	Distributed Temperature System
EBITDA	Earnings Before Interest, Taxes, Depreciation and Amortization
ECO Center	Educational and Community Outreach Center
EDF	Électricité de France S.A.
EDF Renewables	EDF Renewables, Inc.
EDF Renewables Group	EDF Renewables and affiliates, owned by EDF Renouvables S.A.
EFH	Essential Fish Habitat
EIS	Environmental Impact Statement
EJ	Environmental Justice
EMA	Energy Management Agreement
EMF	Electromagnetic Fields
eNGO	Environmental Non-Governmental Organization
EPA	US Environmental Protection Agency
EPC	Engineering, Procurement, and Construction
EPCI	Engineering, Procurement, Construction and Installation
EPRP	Emergency Preparedness and Response Plan
ERA5	European Centre for Medium-Range Weather Forecast, Reanalysis 5th Generation
ES&CP	Erosion and Sedimentation Control Plan
ESA	Endangered Species Act
FAA	Federal Aviation Administration

Acronym	Meaning
FAT	Factory Acceptance Tests
FDR	Facility Design Report
FEED	Front-End Engineering and Design
FERC	Federal Energy Regulatory Commission
FID	Final Investment Decision
FIR	Fabrication and Installation Report
FIR	Fishing Industry Representative
FLO	Fisheries Liaison Officer
FOIL	New York's Freedom of Information Law, Public Officers' Law Article 6
FRR	Fixed Resource Requirement
ft	feet
FTE	Full-Time Equivalent
FWS	US Fish and Wildlife Service
G&G	Geophysical and Geotechnical
GDP	Gross Domestic Product
GHG	Greenhouse Gas
GIS	Geographic Information System
GIS	Gas Insulated Switchgear
GNSS	Global Navigation Satellite System
GOM	Gulf of Mexico
GW	Gigawatts
GWh	Gigawatt hour
GWO	Global Wind Organization
h	Hour
H2	Hydrogen
H2O	Water vapor
HDD	Horizontal Directional Drilling
HSE	Health, Safety, and Environmental
HSSE	Health, Safety, Security, and Environment
HV	High Voltage
HVAC	High Voltage Alternative Current
HVDC	High Voltage Direct Current
IAC	Inter Array Cable

Acronym	Meaning
ICSA	Interconnection Construction Service Agreement
IEC	International Electrotechnical Commission
IHA	Incidental Harassment Authorization
IMPLAN	Impact Analysis for Planning
IRR	Internal Rate of Return
ISA	Interconnection Service Agreement
ISO	Independent System Operator
ISO	International Organization for Standardization
ITC	Investment Tax Credit
JCP&L	Jersey Central Power and Light
JV	Joint Venture
kg	kilogram
km	kilometer
KPI	Key Performance Indicator
kV	Kilovolt
kW	Kilowatt
Lease	Commercial Lease of Submerged Lands for Renewable Energy Development on the Outer Continental Shelf (OCS-A 0499)
Legal abbreviations	All Agency names
Legal abbreviations	All States names
LES	Large Eddy Simulation
LESS	Laboratory for Energy Smart Systems (Rutgers University)
LGBT	Lesbian, Gay, Bisexual, and Transgender
LiDAR	Light detection and ranging
LOA	Letter of Authorization
LOS	Letter of Support
LPL	Lightning Protection Level
m	meter(s)
m/s	meters per second
M&A	Mergers and Acquisitions
MACP	Mid-Atlantic Coastal Plain
MARACOOS	Mid-Atlantic Coastal Ocean Observing System
MARCO	Mid-Atlantic Ocean Data Portal

Acronym	Meaning
MBES	Multi-beam Echosounder
MBTA	Migratory Bird Treaty Act
MERRA2	Modern Era Retrospective-Analysis for Research and Applications
metocean	Meteorological and Oceanographic
MMPA	Marine Mammal Protection Act of 1972
MOPR	Minimum Offer Price Rule
MOU	Memorandum of Understanding
MP	Monopile
MP	Monopile Foundation
MSL	Mean Sea Level
MV	Medium Voltage
MVA	Mega Volt Amp
MW	Megawatt
MWBE	Women and Minority Owned Businesses
MWh	Megawatt Hour
MWTS	Motus Wildlife Tracking System
N.J.A.C.	New Jersey Administrative Code
NAD83	North American Datum of 1983
NARW	North Atlantic Right Whale
NEFSC	North-East Fisheries Science Center
NEPA	The National Environmental Policy Act
NERC	North America Electric Reliability Corporation
NHPA	National Historic Preservation Act of 1966
NJ	State of New Jersey
NJ BPU	New Jersey Board of Public Utilities
NJ DEP	New Jersey Department of Environmental Protection
NJ EDA	New Jersey Economic Development Authority
NJ SHPO	New Jersey State Historic Preservation Office
NJ WP	New Jersey Wind Port
NM	Nautical Mile
NMFS	National Marine Fisheries Service
NnG	Neart na Gaoithe
NOAA	National Oceanic and Atmospheric Administration

Acronym	Meaning
NOI	Notice to Intent
NOX	Nitrogen Oxides
Nox	Nitrogran Oxide
NPV	Net Present Value
NRA	Navigational Safety Risk Assessment
NRDC	Natural Resources Defense Council
NRHP	National Register of Historic Places
NSRA	Navigational Safety Risk Assessment
NTP	Notice to Proceed
NY	State of New York
NYISO	New York Independent System Operator
NYSERDA	New York State Energy Research and Development Authority
O&M	Operation and Maintenance
OCC	Operations Control Center
OCS	Outer Continental Shelf
OCRP	Offshore Compliance Recommended Practices
OEM	Original Equipment Manufacturer
OPEX	Operational Expenditures
OREC	Offshore Wind Renewable Energy Certificate
OSHA	Occupational Safety Health Administration
OSRP	Oil Spill Response Plan
OSP	Offshore converter station
OSW	Offshore Wind
OWEDA	Offshore Wind Economy Development Act
PAM	Passive Acoustic Monitoring
PATON	Private Aids to Navigation
PDE	Project Design Envelope
PEM	Proton Exchange Membrane
PJM	PJM Interconnection LLC
PJM MidE	PJM Eastern Mid-Atlantic
PJM	Pennsylvania Jersey Maryland Independent System Operator
PLA	Project Labor Agreement
PM2.5	Fine particles (diameter less than 2.5 micrometers)

Acronym	Meaning
POI	Point of Interconnections
PPA	Power Purchase Agreement
PPE	Personal Protective Equipment
PRE	Performance and Reliability Engineering
PTC	Production Tax Credit
PV	Photovoltaic
QMA	Qualified Marine Archaeologist
R&D	Research and Development
REC	Renewable Energy Certificate
RFBO	Request for Binding Offers
RFI	Request for Information
RFP	Request for Proposal
RNA	Rotor and Nacelle Assembly
ROD	Record of Decision
RODA	Responsible Offshore Development Alliance
ROSA	Responsible Offshore Science Alliance
ROV	Remotely Operated underwater Vehicle
ROW	Rights of Way
RUCOOL	Rutgers University Center for Ocean Observing Leadership
RUMFS	Rutgers University Marine Field Station
SAP	Site Assessment Plan
SCADA	Supervisory Control and Data Acquisition
SF6	Sulfur hexafluoride
Shell	Royal Dutch Shell
Shell New Energies	Shell New Energies US LLC
Shell Group	Shell New Energies and affiliates, owned by Royal Dutch Shell
Shell OC	Shell Oil Company
SIMOP	Simultaneous Operations
SJI	South Jersey Industries
SMA	Service Maintenance Agreement
SME	Subject Matter Expert
SMS	Safety Management System
SMWBE	Small, Monitory, and Women-owned Business Enterprises

Acronym	Meaning
SO2	Sulfur Dioxide
SOV	Service Operation Vessels
SP	Social Performance
STEAM	Science, Technology, Engineering, Arts and Mathematics
STEM	Science, Technology, Engineering and Mathematics
T&I	Transportation and Installation
t	ton (metric ton, 1000 kg)
TBC	To Be Confirmed
TECOP	Technical, Economical, Commercial, Operational, Political
TJV	Transition Joint Vault
TP	Transition Piece
TSUC	Transmission System Upgrade Cost
TWh	Terawatt Hours
UPS	Uninterruptable Power Supply
USACE	United States Army Corps of Engineers
USCG	United States Coast Guard
USD	US dollars
USFWS	United States Fish and Wildlife Service
UXO	Unexploded Ordinance
VMS	Vessel Monitoring System
VOC	Volatile Organic Compounds
WACC	Weighted Average Cost of Capital
WBS	Work Breakdown Structure
WIND	Wind Integration National Dataset
WRF	Weather Research and Forecasting
WTG	Wind Turbine Generator
XLPE	Cross-Linked Polyethylene

1 Applicant information

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Solicitation requirements

Table 1-1 describes the Solicitation requirements of this chapter as put forth in the SGD, as well as the relevant sections addressing these requirements.

Table 1-1: Applicant information - references for Solicitation requirements

Key Solicitation requirements	Application reference
A demonstration of the Applicant's applicable experience in projects of similar size and scope to the proposed Project(s) (N.J.A.C. 14:8-6.5(a)(2), N.J.A.C. 14:8-6.5(a)(2)(i)(1)) (This demonstration of experience should include each Project's name, planned or actual COD, development status, project size, turbine type(s) and size, project location, explanation of the Applicant's role in the project, and any other relevant characteristics for the Project.)	Section 1.4
List of all Key Employees, including resumes for each that detail their individual track record in construction and operation of power plants of similar size and scope (N.J.A.C. 14:8-6.5(a)(1)(i)) (Resumes can be provided in an attachment. The list of Key Employees should include a labor coordinator responsible for engagement with labor unions and development of PLAs and other labor agreements.)	Section 1.2 / Appendix 1-1
Description of any work done to date by the Key Employees in developing projects of similar scope, especially any ocean-based energy project or New Jersey large-scale energy project siting work (N.J.A.C. 14:8-6.5(a)(1)(ii))	Section 1.2 / Appendix 1-1
If the work described was not performed by the entire team of Key Employees, the Applicant must delineate the experience or work performed by Key Employees (N.J.A.C. 14:8-6.5(a)(1)(iii))	Section 1.2

The Applicant shall disclose, in detail, any prior business bankruptcies, defaults, disbarments, investigations, indictments, or other actions against either the Applicant, its parent company, affiliates, subsidiaries, or any Key Employees identified above (N.J.A.C. 14:8-6.5(a)(1)(iv))	Section 1.6 / Appendices 1-7 to 1-8
(Must include in attachments) Two (2) years of audited financial statements, including accompanying financial notes to these statements, of the Applicant and/or parent company, in US Generally Accepted Accounting Principles ("GAAP"). If not in US GAAP, the Applicant shall provide an opinion from an accounting firm that attests to the financial statements and accompanying financial notes and the strength of the Applicant and/or parent company and has provided professional qualifications that demonstrate that expertise (N.J.A.C. 14:8-6.5(a)(3)(vi))	Section 1.5 / Appendices 1-4 to 1-6

1.1 Summary

For the successful and safe development of large-scale renewable energy projects, it is crucial to select a trustworthy, reliable developer that brings the required team, capabilities, and experience. Atlantic Shores is a well-known partner of New Jersey, developing our 1.5 GW Project 1, awarded in the State's 2nd Solicitation, in line with our commitments and in close collaboration with the State. We leverage our growing team of experts, our Shareholders' capabilities, and 4 years of offshore wind experience in New Jersey to this 3rd Solicitation, with the firm intent to stay true to our values and reputation in developing [redacted] This chapter describes the key highlights of our proposed team and past successes that we bring to New Jersey, to further expand our partnership with the State and contribute to its offshore wind leadership.

Section 1.2 presents **the people behind Atlantic Shores**. Our team of over[redacted] passionate offshore wind experts, mixing diverse backgrounds and expertise, and mostly based on the East Coast including throughout New Jersey has been on the ground since 2018. Since our previous Application in the 2nd Solicitation, the team has grown exponentially, demonstrating Atlantic Shores' commitment to grow and deliver on our Portfolio, and our attractiveness amongst a highly sought pool of talents. For the vast majority, our team still consists of the same people that have collaborated with the NJ BPU and other agencies since 2019 and are now successfully delivering on the promises of Project 1. Our selected Key Employees have demonstrated key leadership capabilities and represent the various fields of expertise required for the successful implementation of the proposed Project. They have a proven track record in delivering large infrastructure projects, having collectively delivered on over 50 large-scale energy projects within offshore and onshore wind as well as multiple large infrastructure projects for utilities and other energy sources. This includes projects such as the first US offshore wind farm – the Block Island Wind Farm - and the first Federal offshore wind farm under BOEM jurisdiction – the Coastal Virginia Offshore Wind Farm.

Section 1.3 introduces **Atlantic Shores' Application, its corporate structure, mission and values**. We are an established offshore wind venture with a clear mission to deliver clean electricity from a portfolio of safe, reliable, and efficient offshore wind farms to the US East Coast. We are committed to our core values: *Be safe, Be a good neighbor, Be a good steward of our environment* and *Lead with science*. The NJ BPU experienced our values firsthand through the first two offshore wind Solicitations and further through our collaboration on Project 1. Throughout, we have consistently demonstrated transparency, trustworthiness, and a will to work shoulder-to-shoulder. This approach will remain constant for delivering our proposed Project and the PBI. Our Application [redacted] as well as a fully compliant PBI proposal. For the development of both, we not only benefit from our own knowledge and expertise, but also from our Shareholders. Atlantic Shores is a 50:50 Joint Venture (JV) backed by Shareholders EDF Renewables and Shell New Energies, two world-class energy companies with extensive experience in developing, constructing, and operating large-scale energy projects globally. As a result, Atlantic Shores has access to extensive financial resources, as well as years of technical, operational, and commercial energy expertise that is essential in developing an offshore wind project of this scale.

Section 1.4 elaborates in detail on **Atlantic Shores' experience and track record** since the founding of the JV in 2018, as well as the global and US-specific relevant renewables experience of its Shareholders. Atlantic Shores itself clearly demonstrates a proven track record of all involved entities in developing, planning, financing, constructing, and operating offshore wind farms across the globe and in the US. Regarding New Jersey, Atlantic Shores specifically brings extensive hands-on experience from developing Project 1, the largest offshore wind project awarded in New Jersey. The Project is making significant progress on its path to deliver 1.5 GW of electricity to the State, expecting to reach Final Investment Decision (FID) in [redacted], and delivering first power in [redacted]. This Application and our future delivery plan of [redacted] directly leverage lessons learned from Project 1, such as learnings on project schedule, risks and mitigations, project design, and permitting. With respect to our Shareholders, we can draw upon hundreds of renewables and offshore specialists across the globe, leveraging significant experience and a proven track record in designing, constructing, procuring, operating, and managing a combined renewables project capacity over 24 GW, including over 16 GW in the US alone. Through our ultimate parent

organizations, we have access to a skilled 27,700-person workforce in the US specialized in developing and bringing renewable power to the grid. These factors combined position Atlantic Shores as a proven, reliable partner to the NJ BPU.

Section 1.5 provides the **financial statements** of all involved entities, namely Atlantic Shores and its Shareholders. Atlantic Shores [redacted] to cover year 2022. Considering the JV's direct funding by its Shareholders EDF Renewables and Shell New Energies US LLC, our parents' financial statements are highly relevant documents to fully assess Atlantic Shores' financial strength and are therefore included in Appendices 1-5 to 1-6.

Finally, Section 1.6 addresses the necessary **disclosures** for this Application. [redacted]

Applicant information | Our commitment to New Jersey

[redacted]

1.2 Atlantic Shores' people

Atlantic Shores is made up of over [redacted] offshore wind experts[10] from a diverse background who collaborate as one Team to mature, develop, and build our +5 GW offshore wind Portfolio off the East Coast. We have been on the ground since 2018, working diligently to make Atlantic Shores the offshore wind partner of choice for the NJ BPU. Since our previous Application in the 2nd Solicitation, the team has grown exponentially, demonstrating both Atlantic Shores' commitment to deliver on our Portfolio, and our attractiveness amongst a limited pool of talents, highly sought for by a larger pool of offshore wind developers. The team has been strengthened by the continuity of its most senior staff from earlier Solicitations and the addition of new experienced members, bringing expertise from the offshore renewable, onshore renewable, oil and gas, utility, and other large infrastructure industries. We are proud of the diversity of our people and have developed a robust Diversity, Equity & Inclusion (DEI) program. This program is described in further detail below. The mosaic in Figure 1-1 showcases our team, working every day to bring the best of renewables to New Jersey.

[10] [redacted]

Our Shareholders EDF Renewables and Shell New Energies dedicate resources to Atlantic Shores through a joint service agreement, including, first and foremost our team of experts assigned to the JV. Our team leads in parallel the delivery of Project 1 per our OREC Order commitments and requirements, as well as development and maturation of our uncommitted lease areas and our offshore and onshore cable routes. In addition, our team is devoted to sharing knowledge and spreading the Atlantic Shores values through the offshore wind industry and to new generations via our academic partnerships. Our hiring strategy has been focused on securing diverse team members with experience in delivering projects of similar size and scope, with a target to localize more and more of our staff in New Jersey as our Portfolio moves towards execution.

Diversity, equity and inclusion at Atlantic Shores

Atlantic Shores is committed to advancing diversity, equity, and inclusion (DEI) within the renewable energy sector by adhering to the following principles:

- Identify unconscious biases and break down barriers through education, training, and open dialogue to promote a culture where each team member feels like they belong.
- Cultivate an environment deeply rooted in respect and inclusivity that embraces and empowers individual uniqueness and differences in perspective.
- Create a safe space for all employees that both attracts and retains a diverse talent pool reflective of the communities we work in.

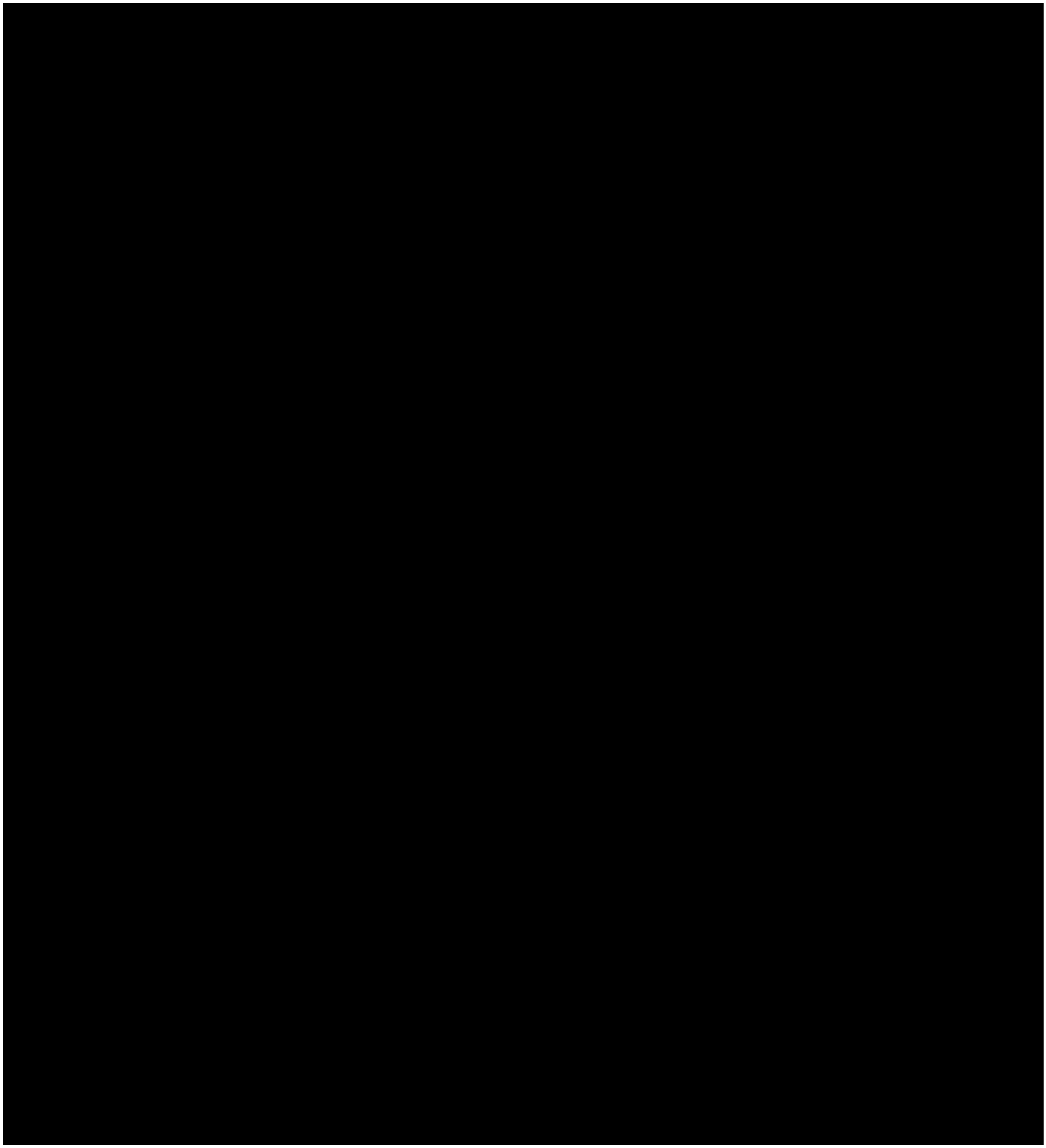
Our DEI team, comprised of [redacted] staff volunteers, pursues this commitment by implementing various DEI goals which fall into three main categories: engagement & training, supply chain diversity, and environmental justice. In 2022 alone, the DEI team hosted five lunch & learn events, sponsored three external events, and donated over $[redacted] organizations fighting for equality. Atlantic Shores recognizes that by investing in our team members, strengthening our workplace culture, and engaging with our surrounding communities. We have the opportunity not only to improve our own company, but also to elevate the offshore wind industry as a whole.

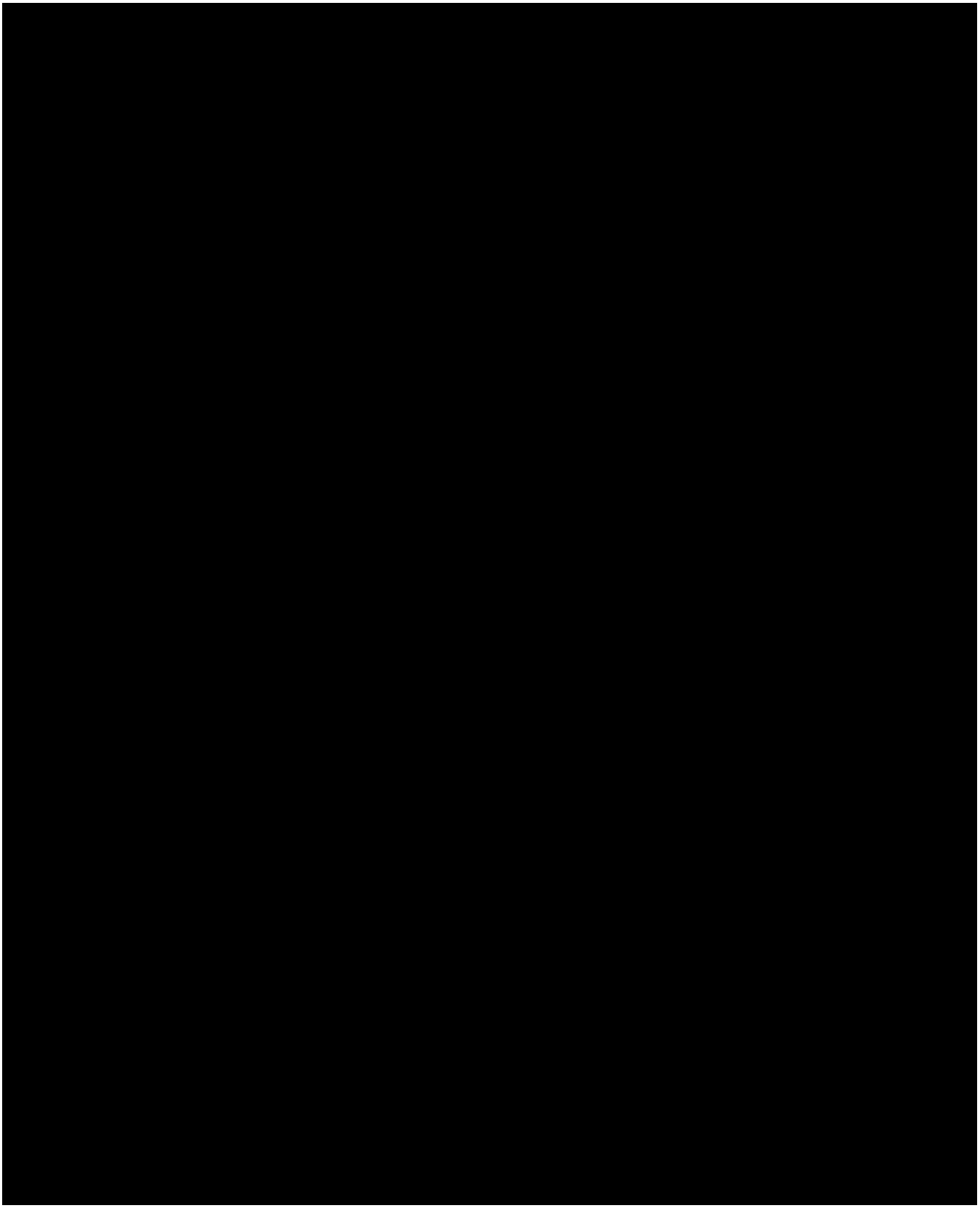
Our selected Key Employees together have experience in development, construction, financing, and operations of over 50 large scale and complex projects across the Energy business in the US. They are, for the vast majority, still the same people

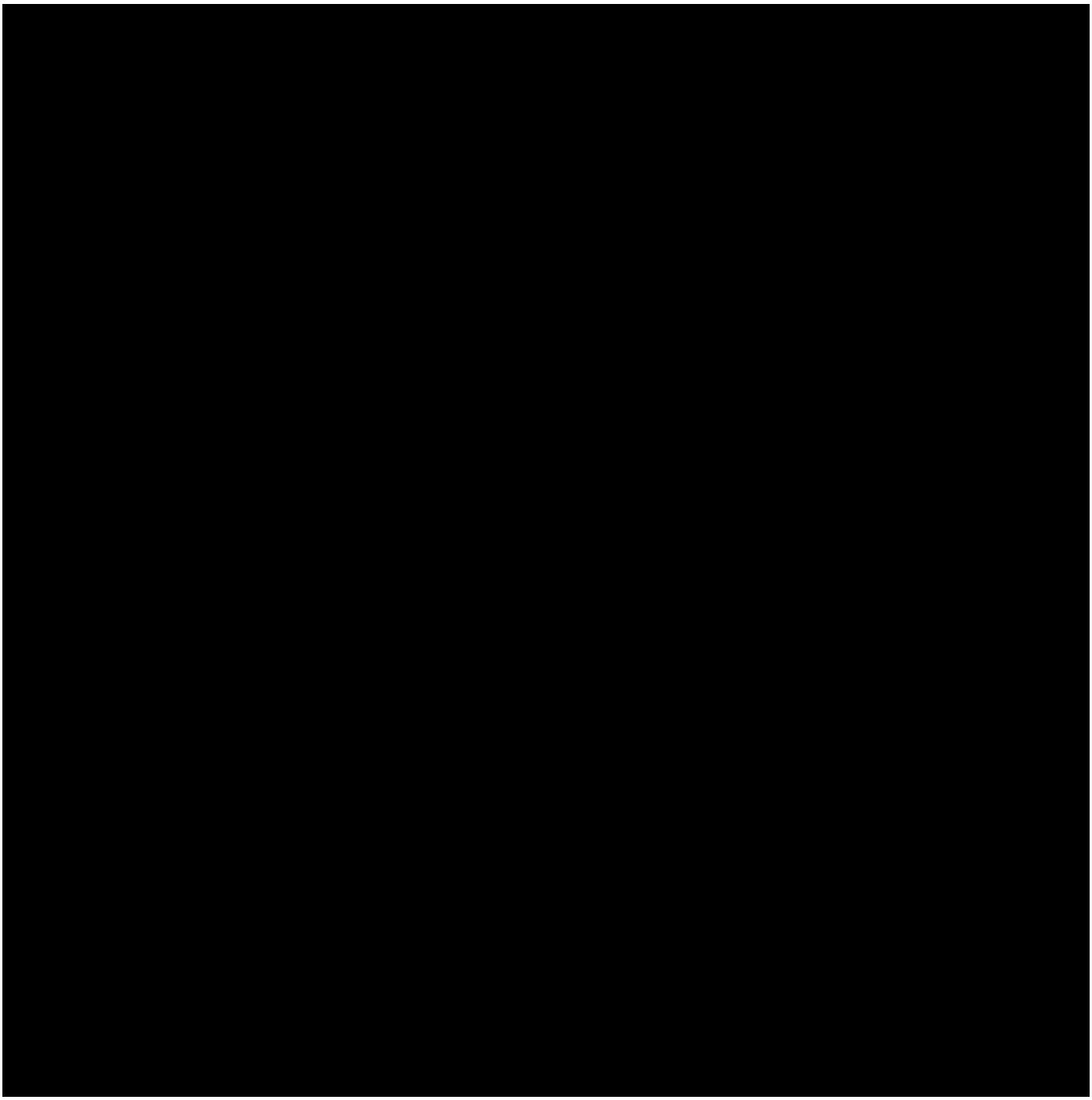
that have collaborated with the NJ BPU and other agencies since 2019 and are now successfully delivering on the promises of Project 1. The experience available to our proposed Project from the Key Employees includes:

- Leading verification and permitting of the first US offshore wind farm – the Block Island Wind Farm, and the first Federal water offshore wind farm under BOEM jurisdiction - the Coastal Virginia Offshore Wind Farm
- Managing relationships with major supply chain partners in the wind industry
- Co-chairing the ACP Offshore Wind Standards Committee
- Spearheading delivery of over 9.6 GW multiple renewable projects

The Key Employees listed below represent a subset of our global team. A selection of the experience of each Key Employee is shown in Table 1-2. Resumes for each Key Employee are provided in Appendix 1-1.







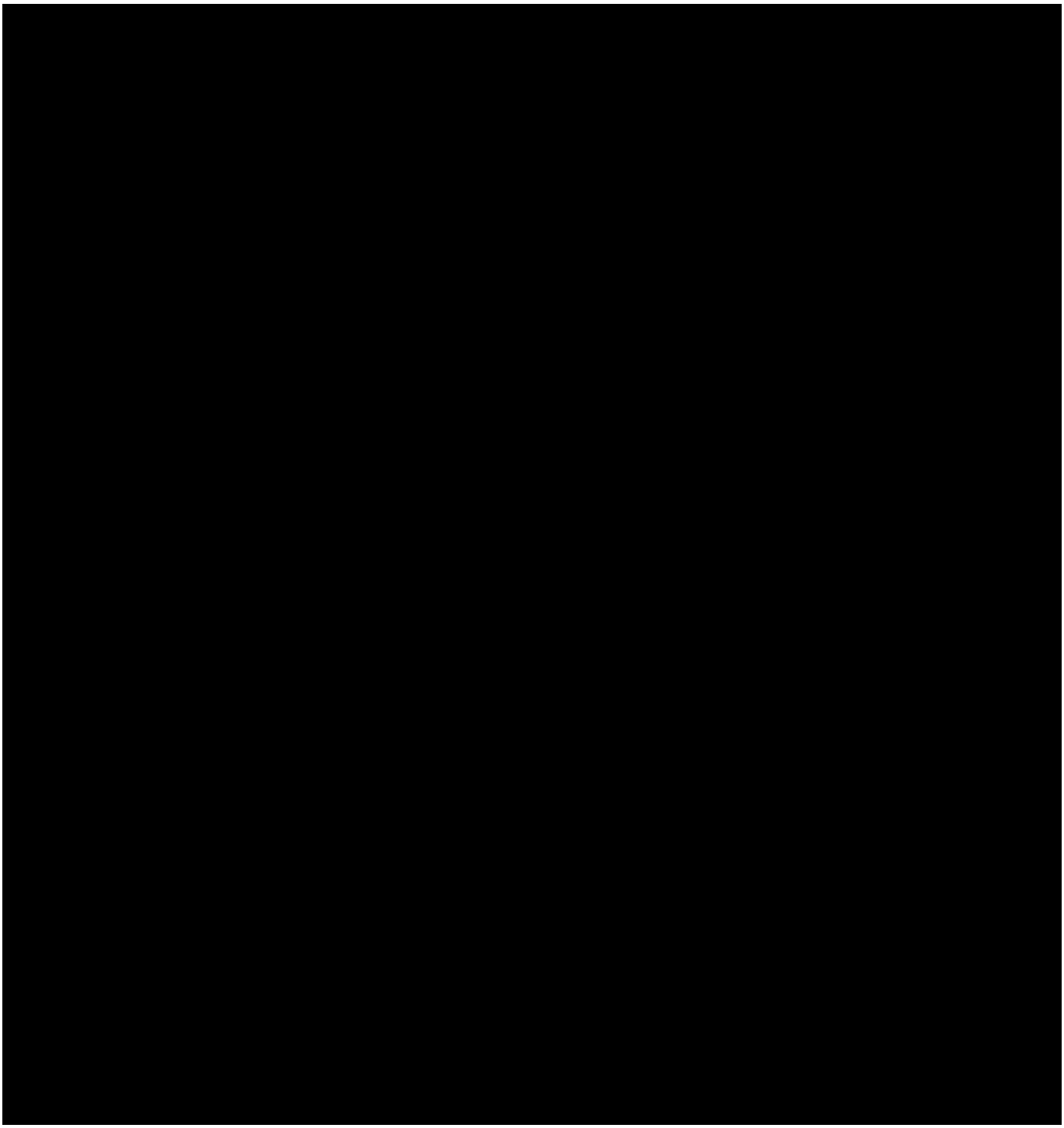
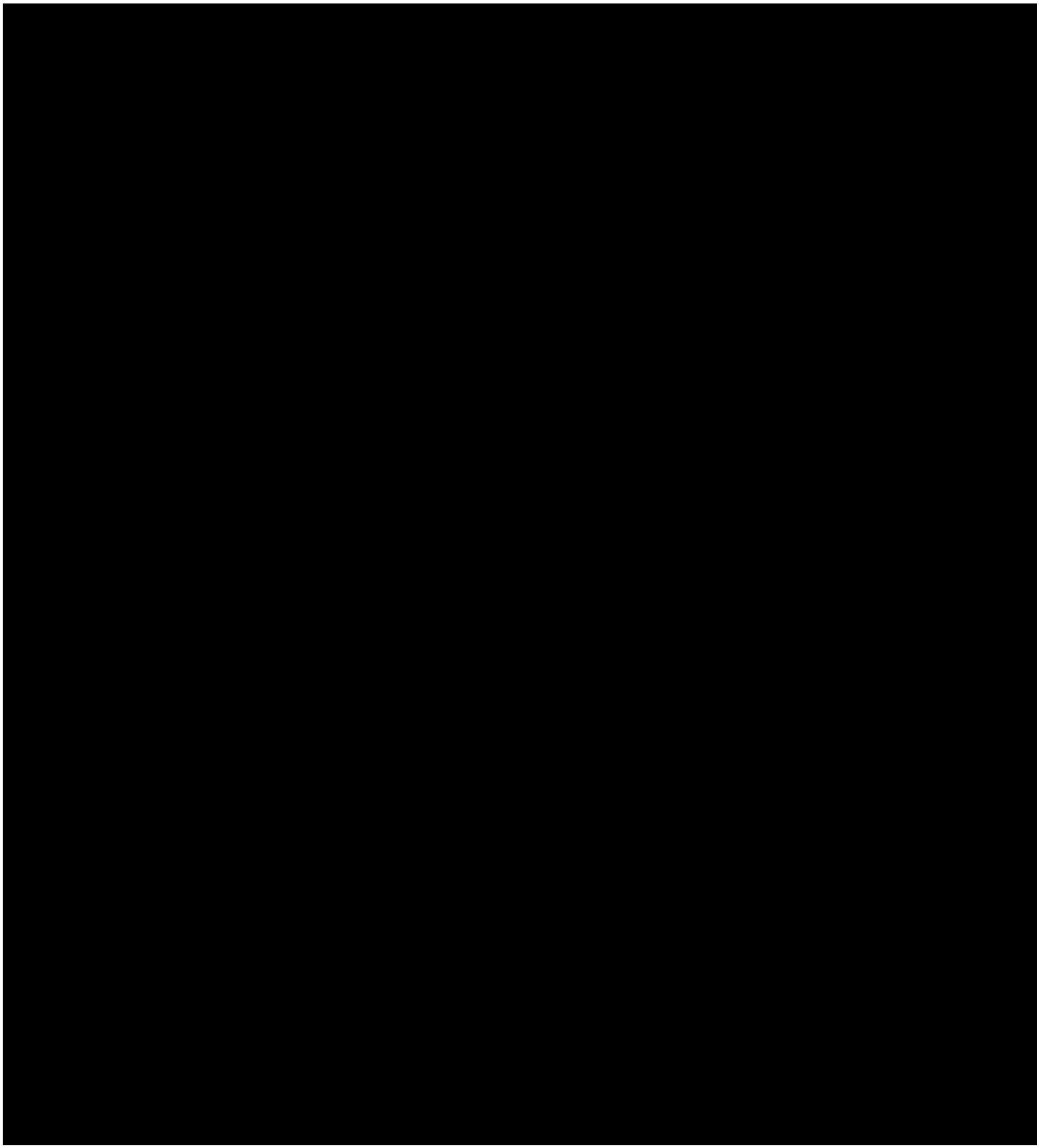
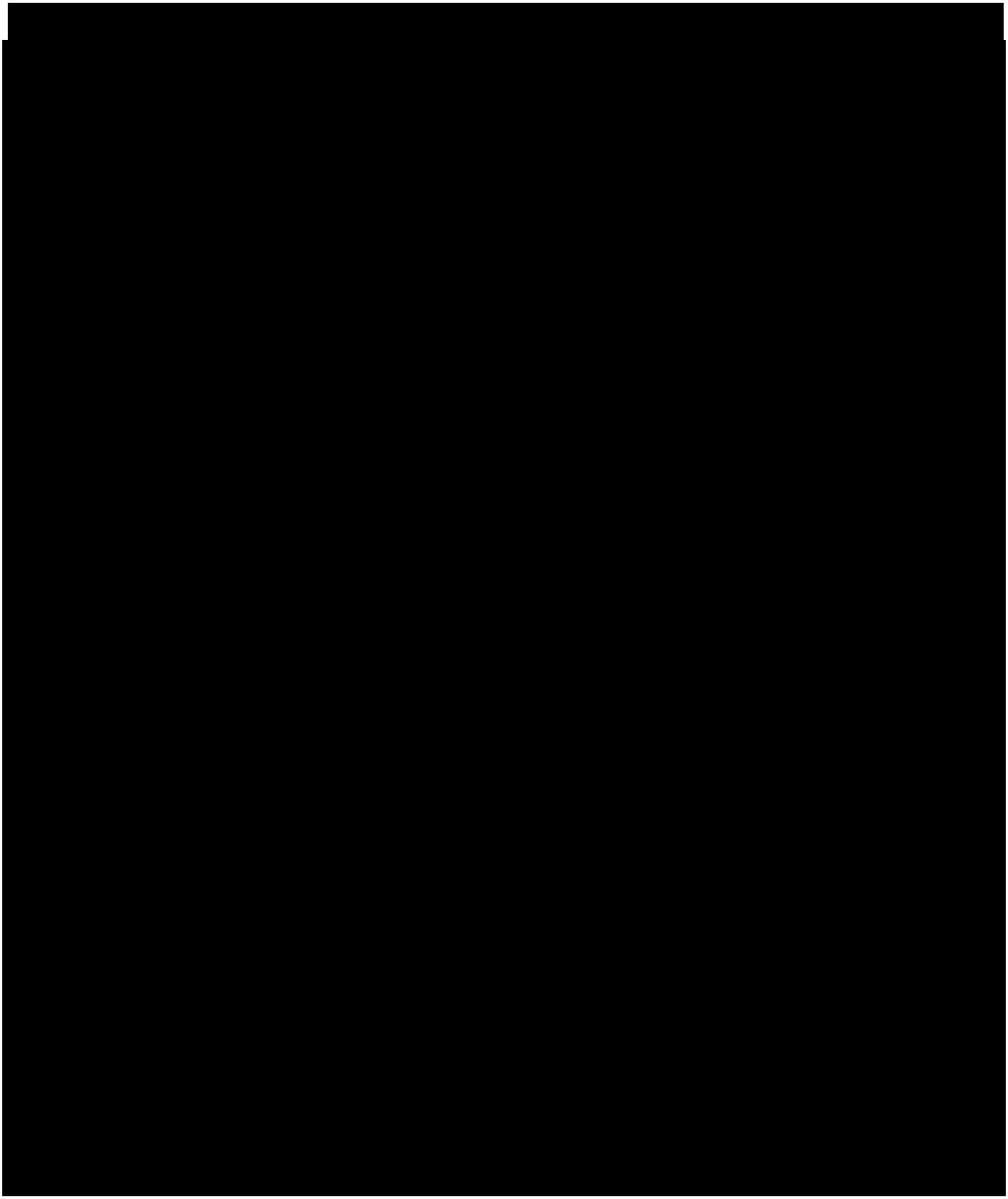
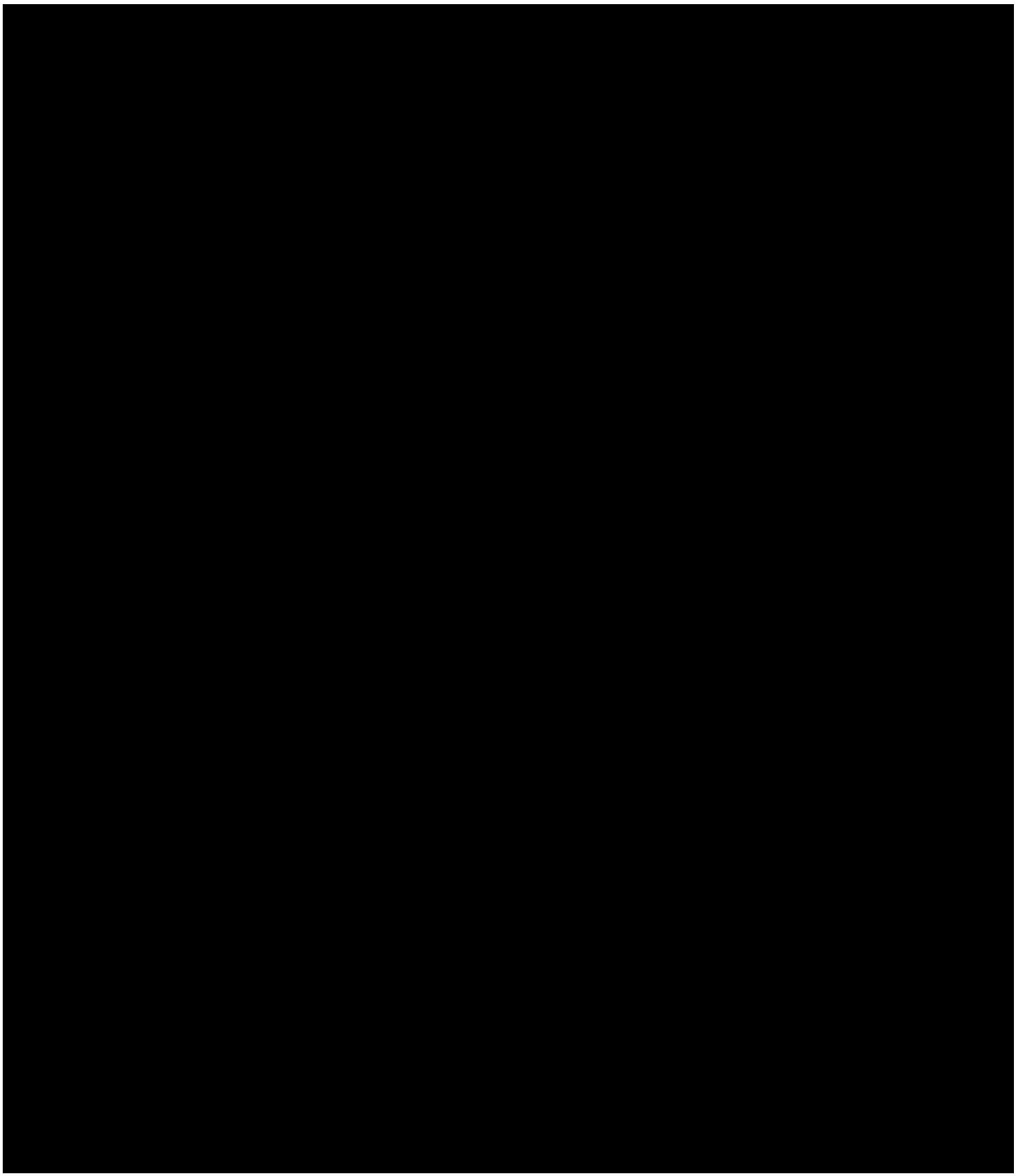
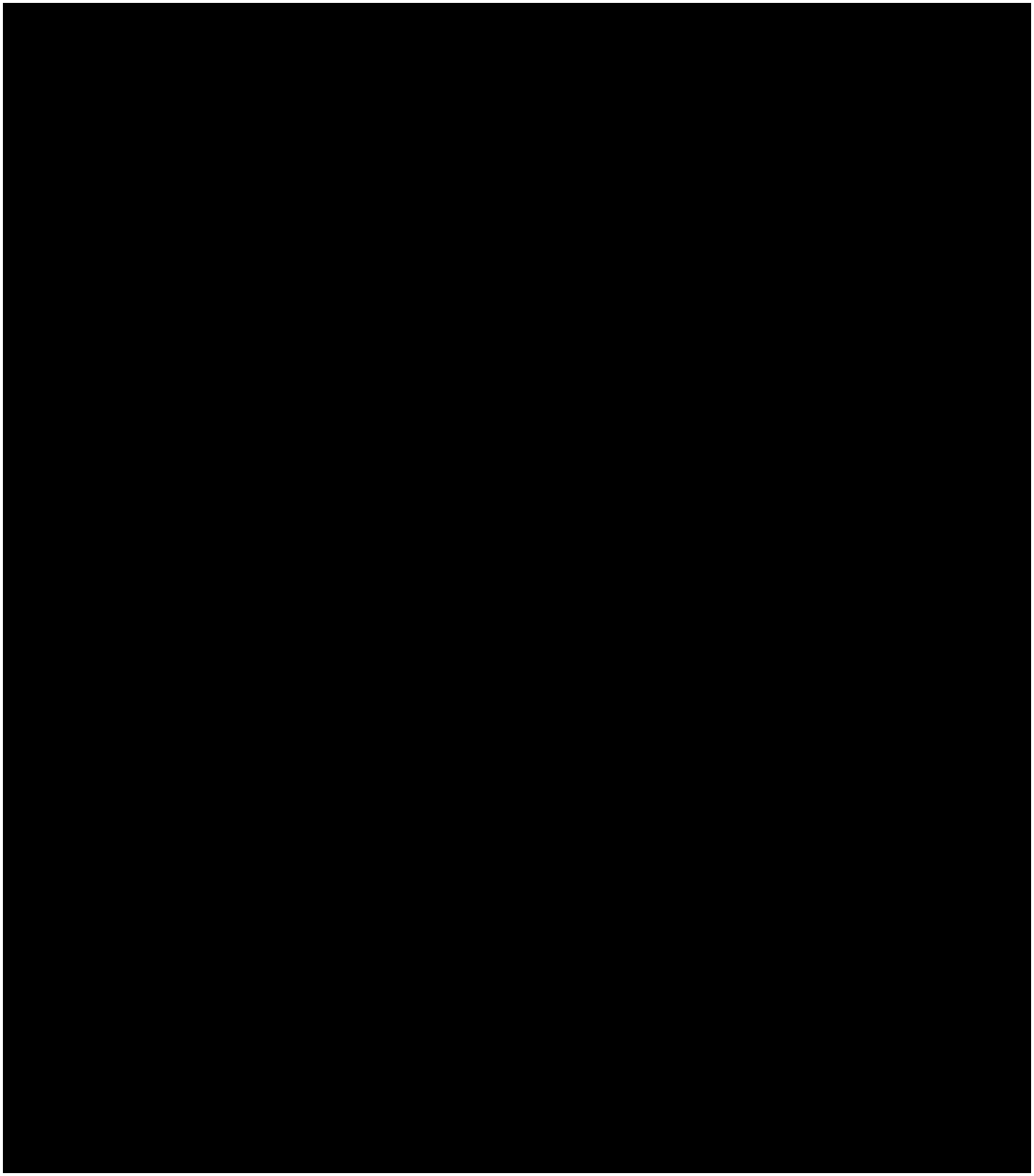


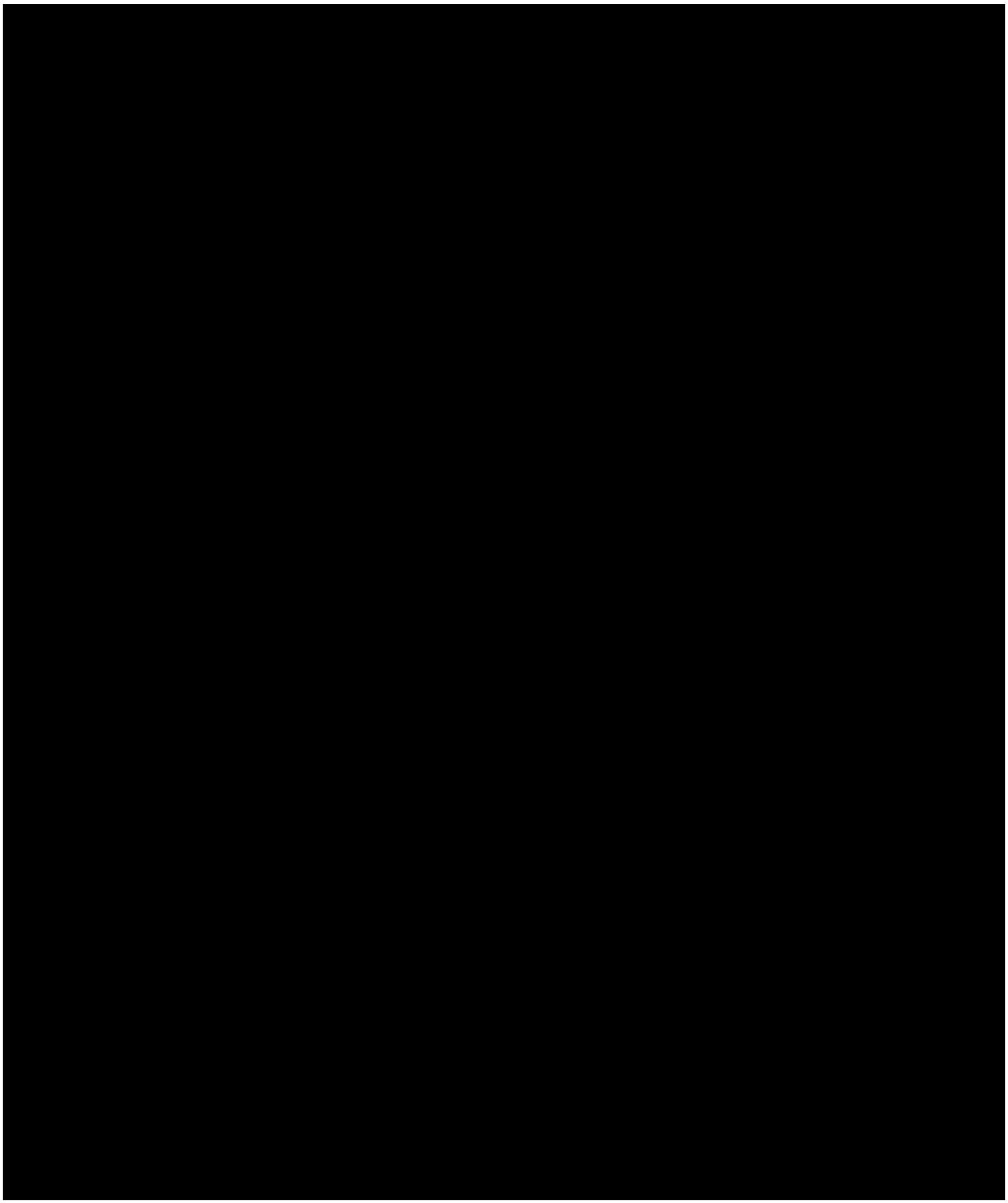
Table 1-2: Selection of Key Employees experience in similar projects

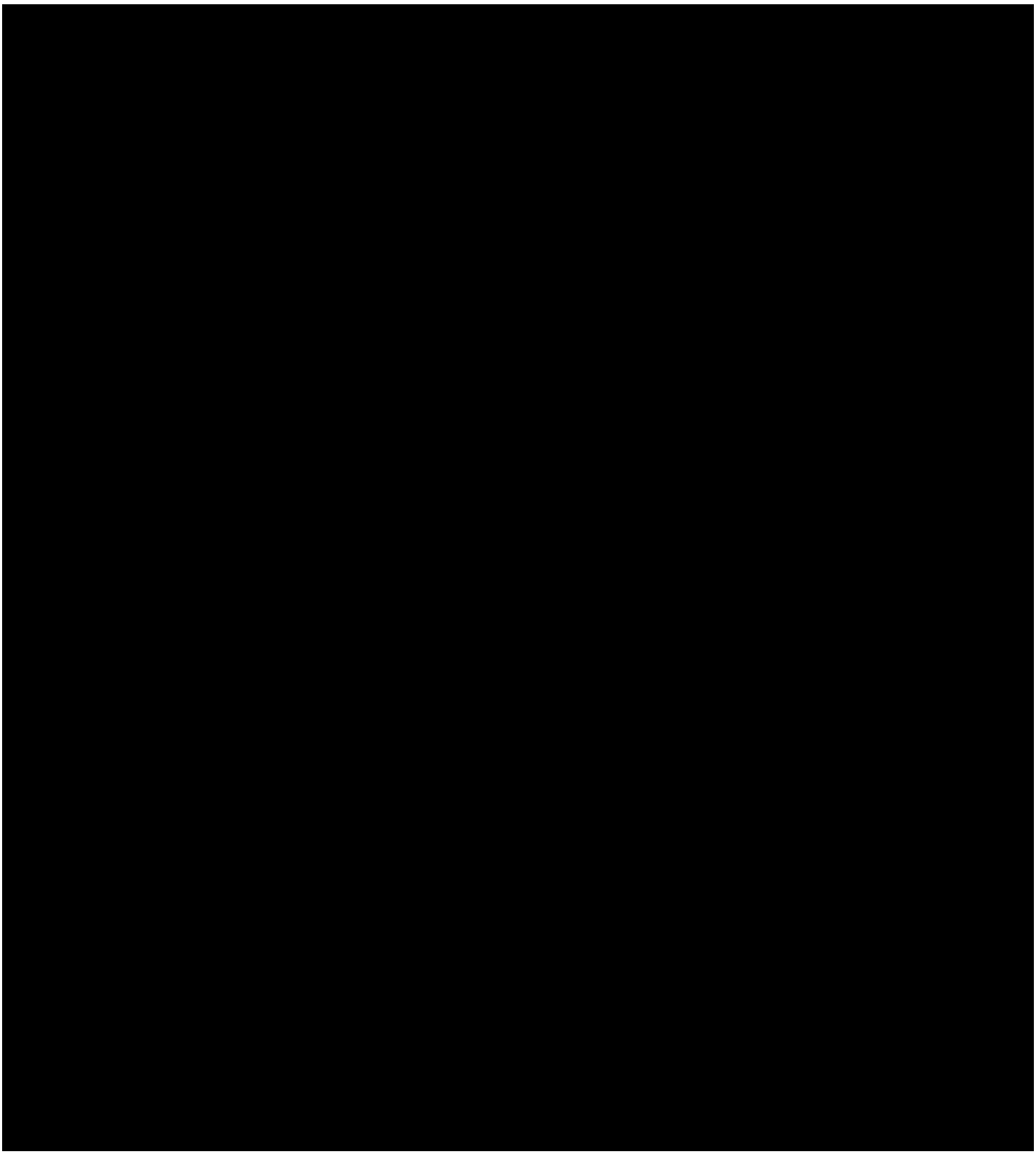












The Key Employees have been carefully selected to represent the key functions and accountability for designing the proposed Project and PBI, and for delivering on our commitments following an OREC award. Once a project is awarded, a dedicated Project Director will be assigned and will build a dedicated project team, fully focused on project implementation, while supported by many corporate and subject matter expert (SME) functions. This approach ensures continuity and consistency for New Jersey, and across the Atlantic Shores Portfolio, including a focus on future projects to be awarded in New Jersey. Each project, corporate or SME role will have a specific responsibility and mandate within the awarded Project (that will ensure effective execution, with a high attention to handover from phase to phase (development to construction, construction to operations), compliance with our OREC and permitting commitments and requirements, and quality interface between workstreams.

A simplified corporate organizational chart reflecting Atlantic Shores' organization and featuring the Key Employees is provided in Appendix 1-2. In addition, a sample organizational chart representing the project team to be built following an OREC award is provided in Appendix 1-3.

As acknowledged in the executed Commitment Form, Atlantic Shores will seek Board approval for any reallocation or replacement of a Key Employee listed above.

1.3 Atlantic Shores' values, application, and corporate structure

1.3.1 Atlantic Shores' values

Atlantic Shores' mission is to develop and deliver a portfolio of safe, reliable, and efficient offshore wind farms within its lease areas, for various US East Coast markets, with a strong focus on supporting New Jersey in meeting its ambitious offshore wind goals while building a local hub for offshore wind. Since our foundation, we have been committed to the vision of being the offshore wind developer of choice by delivering on our promises, underpinned by our four key values:

- **Be safe:** Healthy, safe, and reliable approach to project development and delivery, targeting goal zero and putting health and safety at the forefront of all our activities
- **Be a good neighbor:** Collaboration, coordination and respect for our neighbors and stakeholders – in particular other ocean users, local communities, and team members
- **Be a good steward of our environment:** Long-term and balanced approach to a shared use of our ocean, seeking to understand and mitigate any potential effects our Project may have on the environment, wildlife and industries that fuel our local economies
- **Lead with science:** Scientific, rational approach to project design, leveraging on-site surveys, expert studies and assessments led by reputable third parties while being the partner of choice for leading local scientific institutions

The NJ BPU has experienced our core values firsthand through its two previous offshore wind Solicitations and further through our collaboration on Project 1. Since our inception, we have consistently demonstrated transparency and directness in all our engagement opportunities with the State, while demonstrating our dedication to delivering on our promises and making New Jersey leading hub within the offshore wind industry. As part of our Project 1 development, [redacted] as well as industry trends and local dynamics in an open and upfront manner with the NJ BPU. Atlantic Shores is committed to seek solutions and deliver on our promises for Project 1 despite these challenges. This approach will remain our constant for the delivery of our [redacted] and PBI.

1.3.2 Application overview

While Atlantic Shores continues to mature Project 1 to meet OREC requirements, we are keen to build on this past success by offering the NJ BPU another comprehensive Application that brings significant benefits to the state of New Jersey in the rest of its Portfolio. This Application is submitted by [redacted] a single purpose entity comprised of a single member: Atlantic Shores Offshore Wind, LLC (Atlantic Shores).

Atlantic Shores is a 50:50 partnership between EDF-RE Offshore Development, LLC, indirectly owned by EDF Renewables, Inc. (EDF Renewables[11]) and Shell New Energies US LLC (Shell New Energies), indirectly owned by Shell plc (Shell)[12] (together the Shareholders or parents[13]), Atlantic Shores was formed in December 2018 to develop BOEM Renewable Energy Lease Area OCS-A 0499 which was further segregated into two separate lease areas in line with our Federal permitting strategy. Lease Area OCS-A 0499, covered in Atlantic Shores' 1st COP (COP South), hosts Project 1 and Project 2 [redacted]

[11] EDF Renewables and affiliates, owned by EDF Renouvelables S.A., are further referred to as the EDF Renewables Group

[12] Shell New Energies and affiliates, owned by Shell plc., are further referred to as the Shell Group / Shell

[13] Members under the Operating Agreement executed on December 13, 2018.

[redacted] In addition, Atlantic Shores acquired lease area OCS-A 0541 in 2022 pursuant to the highly competitive Bight lease auction conducted by BOEM. All three of Atlantic Shores' lease areas are located in Federal waters of the US and encompass 262,604 acres of the outer continental shelf (OCS).

In preparation for this 3rd Solicitation, Atlantic Shores has grown our organization, while significantly maturing [redacted] and the PBI [redacted] The efforts that we have and will continue to make to de-risk this Project underlines our commitment to offer a uniquely mature and highly deliverable Project to New Jersey. In addition, Atlantic Shores aims to provide continuity to its partners from Project 1 and we aim to expand established commitments and relationships by expanding our development of the New Jersey supply chain as well as key environment, community, fisheries, decarbonization, interconnection, and research initiatives. Our economic development plan for New Jersey (see also Chapter 8 - Economic development plan) includes supporting the growth of the local workforce, attracting major suppliers in setting up additional local Tier 1 fabrication facilities [redacted], and creating long-term jobs by expanding our operations and maintenance activities in Atlantic City.

1.3.3 Applicant contact information

The Applicant's name and contact information is as follows:

- Applicant:
  - [redacted]
  - Address: 1, Dock 72 Way, Floor 7, Brooklyn, NY, 11205
  - Website: https://www.atlanticshoreswind.com/
- Primary contact person:
  - [redacted]
  - Role: [redacted]
  - Phone: [redacted]
  - Email: [redacted]
- Secondary contact person:
  - [redacted]
  - Role: [redacted]
  - Phone: [redacted]
  - Email: [redacted]

Atlantic Shores requests that all communications regarding the Application be provided through the contact persons identified above.

1.3.4 Corporate organization

A corporate organizational chart is presented as Figure 1-3 below. As a JV, we benefit from an optimal structure:

- Locally based and here to stay, with offices in Atlantic City, NJ, Brooklyn, NY and Boston, MA, as well as [redacted] to serve as our in-State standing base for project execution. Atlantic Shores brings together a team of experts dedicated to developing the Portfolio, in alignment with the company's culture of safety, cohesion, honesty and integrity (see Sections 1.2 and 1.3.1.)
- Our experience and track record with Project 1 within the State's regulatory environment has established Atlantic Shores as a reliable and dependable partner to New Jersey, willing to stand behind our commitments (see also Section 1.3.1). We know New Jersey better than any other developer.
- Our corporate structure (as shown in Figure 1-3), allows Atlantic Shores to efficiently deliver on our purpose and vision, setting a solid base for a high functioning organization (Corporate Functions), ensuring consistency and optimizing value across the entire Portfolio (Portfolio Realization) and enabling seamless project delivery (project Execution) from early development through execution to operations.
- Supported by our Shareholders (EDF Renewables and Shell New Energies) – two world-class energy companies having extensive experience in developing, constructing, and operating large-scale energy projects globally, Atlantic Shores has access to extensive financial resources, as well as years of technical, operational, and commercial energy expertise that is essential in developing an offshore wind project of this scale. We can build on the Parents' strong presence in the US, which includes a vast network of suppliers, a highly qualified workforce with renewables and offshore expertise, and experience in securing local, state and federal permitting while delivering on complex construction plans.

With the breadth of individual skills and experience, combined with the expertise of our Parents, Atlantic Shores is confident in our ability to deliver a Project that meets NJ's expectations and will contribute greatly to the State's clean energy plan.

Figure 1-3: Atlantic Shores corporate organization chart

Figure 1-4: Atlantic Shores portfolio delivery structure

1.4 Atlantic Shores' experience and track record

Atlantic Shores and both its Shareholders demonstrate deep experience and extensive track record in offshore wind in the US and globally, ensuring delivery of the awarded Project in line with the State's expectations.

1.4.1 Atlantic Shores

Since 2018, Atlantic Shores has worked continuously and diligently at maturing its Portfolio, resulting in several successes including securing our first NJ offtake with 1.5 GW Project 1, expanding our lease areas though the acquisition of lease area OCS-A 0541 in the New York Bight auction, and bringing and PBI offer to the highest level of deliverability proposed in this Solicitation. To assess and de-risk our Portfolio to this level we have completed:

- Over
- seasons of , resulting in a total of of offshore export cable and over
- Filing of (see also Chapter 14 - Permitting plan)

With the expansion of our Portfolio to include [redacted]

[redacted]

Beyond our Portfolio maturation activities, we are also keenly focused on building on our existing in-State relationships through a focused stakeholder engagement program. We are involved and take leading roles in several offshore wind and renewable industry organizations including, among others:

[redacted]

One of the core values of Atlantic Shores is to be a good neighbor (see Section 1.3.1) and, in this vein, Atlantic Shores has endeavored to continue building on several partnerships with various organizations and universities that are working to benefit New Jersey. These include:

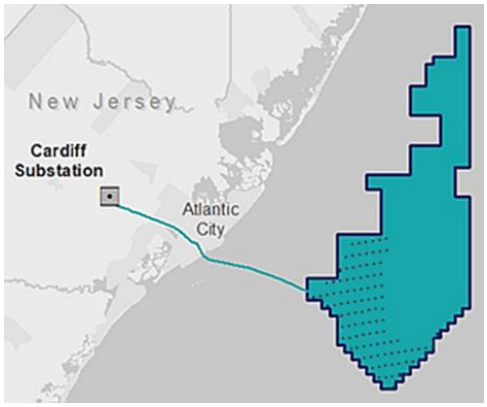
[redacted]

[redacted]

1.4.1.1 Project 1 experience

Atlantic Shores' first and flagship project, Project 1 (see Figure 1-5) awarded by the NJ BPU in the 2nd Solicitation, is the largest project awarded in the State of New Jersey and the third largest in the United States. The Project is making significant progress on its path to deliver 1.5 GW of energy to New Jersey despite facing macroeconomic headwinds. It is expected to reach Final Investment Decision (FID) in [redacted], start onshore and then offshore construction in [redacted] respectively, to deliver its first power in [redacted]

Figure 1-5: Atlantic Shores Project 1 location



Atlantic Shores Project 1 will generate enough clean energy to power more than 700,000 homes and create tens of thousands of jobs through its lifecycle. The project will help reduce net greenhouse gas emissions by approximately 4 million tons every year, roughly the equivalent of taking 770,000+ cars off the road. It will also contribute nearly $1.9 billion in total economic impact to New Jersey, with a guaranteed $848 million in local direct investment. Currently, a total of [redacted], are fully dedicated to Project 1 delivery across [redacted], as well as HSSE, project controls, quality management, interface management, technical integration, project financing, contracting and procurement, etc. Since its June 2021 OREC award, Project 1 has already achieved significant successes, including:

- Issuance of our Project 1 COP DEIS
- Execution of a Preferred Supplier Agreement with Vestas, including for hub assembly at the NJWP
- Execution and funding of a Pre-Commitment and Capacity Reservation Agreement with EEW for the fabrication of monopiles at their Paulsboro factory in NJ
- Selection and start of the wind turbine foundation detailed Design scope with Ramboll
- Execution of a Letter of Intent (LOI) for a marshalling parcel at the NJWP with the NJ EDA

[redacted]

This Application and our delivery plan for [redacted] directly leverage lessons learned on Project 1, and a constant learning mindset will support our approach to delivering our entire Portfolio with continuous improvement. Specifically, for this Application, Atlantic Shores considered learnings on project schedule, risks and mitigations, project design, and incorporated the latest information from the market, based our preferred relationships with several Tier 1 suppliers and taking advantage of our ongoing market engagement through Project 1's RFPs.

Figure 1-6: Planned development of Project 1

1.4.2 EDF Renewables Group

The EDF Renewables Group, including EDF Renewables and its affiliates, is a world leader in renewable energy production. The group develops, builds, and operates clean energy power plants in more than 20 countries both for its own account and for third parties. Historically, the EDF Renewables Group primarily developed its business in two geographical areas, Europe, and North America (US, Canada, and Mexico). However, since 2012, the EDF Renewables Group has expanded into additional countries with strong renewable energy potential such as South Africa, Israel, Chile, Brazil, India, and China.

EDF Renewables

18 GW: gross renewable capacity in operations (all renewables), eq. to 11 GW net

As of March 31, 2023, the group's gross installed capacity amounted to 18.5 GW worldwide, with a net installed capacity standing at 11.4 GW and gross capacity under construction at 6.7 GW, covering offshore and onshore wind, solar and storage. Offshore wind represents 1.4 GW gross globally in operations, and 1.4 GW in construction as of March 2023.

The EDF Renewables Group is an integrated operator with global reach, covering the entire renewable energy chain, from development to operation and maintenance, and managing its projects in-house across all phases of the project lifecycle. Through both its traditional onshore business and offshore wind business, the EDF Renewables Group provides Atlantic Shores with considerable energy market, renewables interconnection, engineering, procurement and O&M expertise via employee secondment, Shareholder decisions, and expert assurance.

1.4.2.1 Relevant global experience

Atlantic Shores is the EDF Renewables Group's first US offshore wind venture, although the EDF Renewables Group is exploring several other offshore wind opportunities on the Pacific and Atlantic Coast. As a result and considering the emerging nature of the offshore wind industry in the US, the EDF Renewables Group's experience has been developed and proven mostly in Europe, specifically in France and the UK (see Table 1-3). New growing markets include China. South Korea, Japan. India, Brazil and Australia, The Group's work in offshore wind began in 2003, with the portfolio of offshore wind projects under exclusive power purchase agreement (PPA) detailed in Table 1-3.

Table 1-3: EDF Renewables Group portfolio of offshore wind projects

Project	Status	Size (MW)	COD	Turbines	Foundation	Role (current and expected)	Distance to shore
Atlantic Shores, Project 1* (US)		1,500	2027	Vestas	Monopile	Development, planning, financing, construction, O&M (shared)	10 miles
Dunkirk (FR)*		600	2026	TBC	Monopile	Development, planning, financing, construction, O&M (shared)	6.2 miles
Calvados /Courseulles (FR)*		448	2025	56 x SGRE 8 MW	Monopile	Development, planning, financing, construction, O&M (shared)	10 miles
Codling (IE)*		1,300	Mid 2020s	TBC	TBC	Development, planning, financing, construction, O&M (shared)	8 miles
Provence Grand Large (FR)		25	2023	3 x SGRE 8.4 MW	Floating	Development, planning, financing, construction, O&M (shared)	10.6 miles
Fécamp (FR)*		497	2023	71 x SGRE 7 MW	GBS	Development, planning, financing, construction, O&M (shared)	8.1 miles
Neart na Gaoithe/ NnG (UK)		450	2023	54 x SGRE 8 MW	Jacket	Development, planning, financing,	9.9 miles

Project	Status	Size (MW)	COD	Turbines	Foundation	Role (current and expected)	Distance to shore
						construction, O&M (shared)	
Saint-Nazaire (FR)*		480	2022	80 x GE 6 MW	Monopile	Development, planning, financing, construction, O&M (shared)	7.5 miles
Dongtai V (CN)*		200	2021	50 x Sewind 4 MW	Monopile	Construction, O&M (shared)	26 miles
Dongtai IV (CN)*		302	2019	75 x Envision 4 MW	Monopile	O&M (shared)	26 miles
Blyth (UK)		40	2017	5 x MHI-VOW 8 MW	GBS	Development, planning, financing, construction, O&M (shared)	3.7 miles
Thornton Bank (BE)		325	2013	6 x Senvion 5 MW + 48 x Senvion 6.15 MW	GBS	Development, planning, financing, construction, O&M (shared)	19 miles
Teesside (UK)*		62	2013	27 x SGRE 2.3 MW	Monopile	Development, planning, financing, construction, O&M	0.9 miles

Operating In construction In development *Joint venture / consortium

Below, we provide a focus on two of EDF Renewables Group's flagship projects, including one in operations and one in pre-construction to highlight the expertise and technical capabilities available to Atlantic Shores through this Shareholder. As shown, EDF Renewables Group has a proven track record in delivering projects through a local supply chain, including both local manufacturing of large components, and leveraging local small and medium businesses across the entire construction scope. In addition, as highlighted below, EDF Renewables Group is experienced in fostering and implementing innovative solutions with reduced environmental impact.

Saint -Nazaire *Go to: St-Nazaire website (French)*

A 480 MW offshore wind project located 7.5-12.5 miles off the northwest coast of France, Saint-Nazaire is composed of 80 x 6 MW GE turbines on monopile foundations. The project started onshore construction in 2020 (interconnection, construction base and O&M facility), and despite interruptions due to COVID, remained on track to reach COD in November 2022, achieving a significant milestone as France's first commercial-scale offshore wind project.

Figure 1-7: Image of employees at GE's new plant

The Saint-Nazaire project is a great example of EDF Renewables Group's experience in building a local supply chain in the Loire-Atlantic Region with:

- Creation of an offshore wind hub in Saint-Nazaire, including GE's new plant supplying rotors and nacelles to the project (blades manufactured in Cherbourg, Normandy Region), a marshalling facility, OSP fabrication, and localization of the construction base that coordinated all offshore construction activities.
- Localization of the project O&M facility in La Turballe port, 22 miles from St-Nazaire.
- Creation of an Engineering and R&D center in Nantes, the region's capital and largest city.
- An average of 2,300 people employed in France during construction, including 1,200 in the Pays de la Loire region, and 100 local jobs created during the 25-year operation period.

Codling *Go to: Codling Website*

Codling Wind Park (Codling) is a offshore wind farm in the Irish Sea, set in an area called Codling Bank, approximately 8-13 miles off the County Wicklow coast, between Greystones and Wicklow Town. Developed by Codling Wind Park Ltd. (CWPL), a 50/50 joint venture between EDF Renewables and Fred. Olsen Seawind, Codling was awarded an offtake in May 2023 pursuant to Ireland's first offshore wind auction. A 1,300 MW project, Codling is a combination of what was initially proposed as two projects, with a total project area of approximately 125 km^2. As the country's largest Phase 1 offshore wind farm, Codling will be crucial to Ireland meeting its renewable energy targets and securing its energy supply.

Figure 1-8: Image of Codling Bank

Codling Wind Park is a great example of EDF Renewable Group's ability to work with its partners to bring offshore wind, local communities, and marine stakeholders together to facilitate a route to co-existence with:

- Multi-million Euro Community Benefit Fund tailored to meet community needs and deliver sustainable benefits, with decisions on how best to use the Fund in collaboration with local communities.
- First appointment of a Fishing Industry Representative and only appointment of a Fisheries Engagement Manager in Ireland.
- €500,000 Fisheries Fund to provide financial support for fishing initiatives.
- Launch of a Sustainable Fishers Charter, a code of practice by which the project will engage with fishermen and support marine life on the Codling Bank.
- More than 1,000 jobs expected during construction and approximately 75 new, full-time local jobs during commercial operation.

1.4.2.2 Relevant North American experience

EDF Renewables Inc., the EDF Renewables Group's North American branch, is a market-leading, independent power producer and service provider delivering onshore wind and solar photovoltaic both at grid scale and distributed scale, as well as storage and electrical vehicle charging. EDF Renewables' 35-year US expertise and critical mass offers significant synergistic advantages to Atlantic Shores.

EDF Renewables' North American onshore wind and solar portfolio is spread across five Canadian Provinces, California ISO, Southwest Power Pool, Midwest ISO, Electric Reliability Council of Texas, PJM, Bonneville Power Administration, and two states in Mexico, and consists of several large wind and solar projects incurring state and Federal permitting, complex construction plans, and capital costs in excess of $200 million per project.

EDF Renewables operates 13 GW of projects, including 6.3 GW owned and 7 GW for third parties, and is currently developing an additional 44 GW in North America. Team members within Atlantic Shores, including several Key Employees, have been involved in a number of these successes before being fully assigned by EDF Renewables to make the Atlantic Shores Portfolio a success.

A selection of EDF Renewables' large-scale wind farms (greater than 150 MW) put-in-service in North America is provided in Table 1-4. As illustrated with COD years, EDF Renewables has demonstrated its ability to deliver on multiple projects with concomitant financing and construction phases, with same-year portfolios as large as 800 to 1,100 MW.

Table 1-4: EDF Renewables North America wind portfolio (>150 MW)

COD year	Project (inc. link to webpage)	Location	Capacity
2023	Cypress Wind	Alberta, Canada	200 MW
2022	King Creek 2	Texas, US	209 MW
2022	King Creek 1	Texas, US	184 MW
2021	Milligan 1	Nebraska, US	300 MW
2021	Coyote	Texas, US	243 MW
2021	Las Majadas	Texas, US	173 MW
2020	Merricourt	North Dakota, US	150 MW
2020	Oso Grande	New Mexico, US	250 MW
2020	Golden Plains Wind	Iowa, US	200 MW
2019	Glaciers Edge WindGlaciers Edge Wind	Iowa, US	211 MW
2019	Bobcat Bluff Repower	Texas, US	162 MW
2018	Red Pine Wind	Minnesota, US	200 MW
2018	Nicolas-Riou	Quebec, Canada	224.25 MW
2017	Rock Falls Wind	Oklahoma, US	154 MW
2016	Kelly Creek Wind	Illinois, US	184 MW
2016	Salt Fork Wind	Texas, US	174 MW
2016	Great Western Wind	Oklahoma, US	225 MW

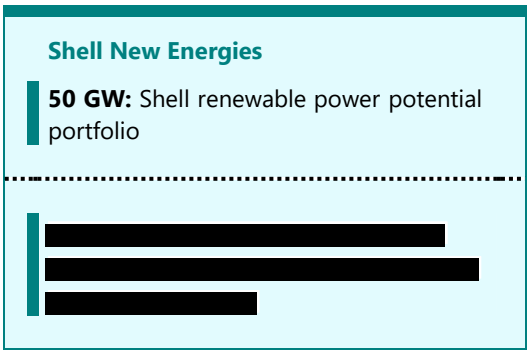
2015	Roosevelt Wind	New Mexico, US	250 MW
2015	Spinning Spur 3 Wind	Texas, US	194 MW
2015	Pilot Hill WindPilot Hill Wind	Illinois, US	175 MW
2015	Slate Creek Wind	Kansas, US	150 MW
2014	Santo Domingo Wind	Mexico	160 MW
2014	Riviere-du-Moulin Wind	Quebec, Canada	350 MW
2014	Spinning Spur 2 Wind	Texas, US	161 MW
2014	Hereford Wind	Texas, US	200 MW
2014	Massif du Sud Wind	Quebec, Canada	150 MW
2014	Bii Stinu Wind	Quebec, Canada	164 MW
2013	Lundgren Wind	Iowa, US	250 MW
2013	Longhorn Wind	Texas, US	200 MW
2013	Blackspring Ridge Wind	Alberta, Canada	300 MW
2012	Bobcat Bluff Wind	Texas, US	150 MW
2012	Spinning Spur 1 Wind	Texas, US	161 MW
2011	Shiloh III Wind	California, US	150 MW
2011	Lakefield Wind	Minnesota, US	205.5 MW
2010	Nobles Wind	Minnesota, US	201 MW
2009	Shiloh II Wind	California, US	150 MW
2008	Walnut Wind	Iowa, US	153 MW
2007	Pomeroy Wind	Iowa, US	198 MW
2007	Fenton Wind	Minnesota, US	205.5 MW
2006	Shiloh I Wind	California, US	150 MW

Additionally, EDF Renewables has developed a strong expertise of the NJ landscape. EDF Renewables' distributed generation division, EDF Distribution Scale Power has been developing and operating commercial and industrial solar projects in NJ since 2000, with over 100 solar projects ranging in size from 50 kW to 30 MW. Some of its marquee solar projects include 1.8 MW with Camden County Municipal Utility Authority, 8 MW with BJ's Wholesale Club, 15 MW with Princeton University, and 30 MW at the former Ciba Giegy superfund site (Figure 1-9) in Toms River, currently in operations with the last portion coming online in the near future.

Figure 1-9: 30 MW solar project at former Ciba Giegy superfund site

1.4.3 Shell Group

Shell is a global energy company with 93,000 employees in more than 70 countries. Shell has acquired expertise in the oil & gas industry over the past century, and the renewables industry over the past 20 years. Through its subsidiary Shell New Energies – which includes renewable generation and energy marketing – Shell is shaping its future business and strengthening its ability to provide more and cleaner energy, and help its customers decarbonize their energy use. Shell is investing around $3 billion annually[14] into renewables and energy solutions, an amount expected to increase over time.



Through its traditional business, with long-term experience in the US Gulf of Mexico, Shell brings highly relevant expertise to Atlantic Shores with regards to geophysical and geotechnical site conditions, foundation, and marine logistics, as well as large-scale project controls and safety standards. Using its new energies business, including European offshore wind and US onshore wind, Shell brings complementary expertise to EDF Renewables', transferred to Atlantic Shores as well via employee assignment, Shareholder decisions, and expert assurance.

1.4.3.1 Relevant global experience

Shell New Energies' experience in offshore wind started in 2007 as it entered an equal partnership with Nuon to build the first large wind farm in the North Sea. Since then, it has vigorously built its offshore footprint, with the Borssele 3 & 4 windfarm becoming operational in 2021, investments in two US joint-ventures (Atlantic Shores and SouthCoast Wind, previously Mayflower Wind) and with the Hollandse Kust Noord wind farm in the Netherlands that became operational in April 2023. Shell New Energies' portfolio of offshore wind projects under exclusive power purchase agreements is summarized in Table 1-5.

Table 1-5: Shell Group portfolio of offshore wind projects

Project	Status	Size (MW)	COD	Turbines	Foundation	Role (current and *expected*)	Distance to shore
NoordZee Wind (Netherlands, North Sea)*		108	2007	36 x Vestas 3 MW	Monopile	Development, planning, financing construction, O&M (shared)	6.2 miles
Borssele 3 & 4 (Netherlands)*		731.5	2021	77 x Vestas 9.5 MW	Monopile	Development, planning, financing construction, O&M (shared)	13.7 miles
TetraSpar Demo (Norway)		3.6	2021	1 x SGRE 3.6 MW	Floating	Development, planning, financing	6.2 miles

[14] 2022 spend. Source: Shell Annual Report 2022

Project	Status	Size (MW)	COD	Turbines	Foundation	Role (current and *expected*)	Distance to shore
						construction, O&M (shared)	
Atlantic Shores, Project 1 (US)	»	1,500	2030	Vestas	Monopile	Development, planning, financing construction, O&M (shared)	10 miles
SouthCoast Wind (US)*	»	1,200	2025	tbc	Monopile	Development, planning, financing construction, O&M (shared)	29.8 miles
Hollandse Kust North* (Netherlands)		759	2023	69 x SGRE 11 MW	tbc	Development, planning, financing construction, O&M (shared)	11.5 miles

Operating | In construction | In development | *Joint venture / consortium

Below, we show a selection of Shell Group projects to specifically highlight the experience and technical capabilities available to Atlantic Shores. The Shell Group has a proven track record in delivering large-scale energy projects, and its recent yet significant portfolio development within offshore wind is indicative of the Shell Group's ability to deliver cleaner and greener energy. It is also playing an important role in the growth of this sector by developing innovative solutions through ongoing research and development, collaborating with local academia, and sharing knowledge publicly, and by empowering local communities through the development of local supply chains.

Borssele 3 & 4 *Go to: Blauwwind website*

A 731 MW offshore project situated in the North Sea and 13.7 miles from the port of Vlissingen, Netherlands, Borssele 3 & 4 has been operational since the beginning of 2021. The total production is 3,000 GWh per year, enough to power more than 825,000 Dutch households.

Borssele 3 and 4 is being built by the Blauwwind Consortium, of which Shell is a 20% Shareholder. The project was developed by a mix of experts seconded by the Shareholders: Shell, Partners Group, Eneco, Van Oord, and DGE. The windfarm is composed of 77 x 9.5 MW turbines installed on monopiles in a water depth between 16 and 38 m.

The total spend from offshore wind contracting activities is expected around €400 million with various local subcontractors and suppliers hired for the different activities across the windfarm phases:

Figure 1-10: Wind turbines in operation

- **Design and preparation phase:** Support from Stichting Deltares for morphological modeling of dynamic seabed behavior, Fugro for soil investigations, design consultants, rubber seals, and design installation tools

- **Turbine installation:** Vestas will have approximately 150+ people engaged across the marshalling harbor and the installation and commissioning sites in the Netherlands
- **Execution phase:** Boat landing installation tools, lifting gear, CTVs and survey vessels, guard vessels etc.
- **O&M hub:** Port of Ijmuiden in Netherlands, employing 40 people and providing offices, meeting facilities, warehouse, dedicated quay side

Hollandse Kust North (HKN) *Go to: Hollandse Kust North (HKN)*

HKN is a 759 MW offshore wind project that just became operational in April 2023. It is located 11.5 miles off the west coast of The Netherlands, near the town of Egmond aan Zee. It is comprised of 69 x 11 MW turbines with a rotor diameter of 200 meters. The subsidy-free wind farm can power almost 1 million Dutch households by generating at least 3.3 TWh of electricity.

The project is developed by the CrossWind consortium, of which Shell is a 79.9% Shareholder. HKN is a truly innovative project that seeks to overcome the challenge of intermittent renewable electricity by including 4 technology demonstrators that could be implemented full-scale individually or in a combination to ensure continuous power supply:

- A floating solar park
- Short-term battery storage
- Turbines optimally tuned to the network to minimize negative wake effects
- Green hydrogen made by electrolysis as another storage technique

The project aims to revolutionize the offshore wind sector by playing a part in the development of a new value chain – from wind to hydrogen, and also delivers on Shell's ambition to become a net-zero emission energy business by 2050 or sooner.

1.4.3.2 Relevant US experience

The Shell Group has been operating in the US for over 100 years, with interests in 50 states, and employs more than 17,000 people. Shell's significant footprint in the US economy is evident through a $5.8 billion yearly spend in taxes and royalties (2021) and an additional $6.8 billion spending with US based suppliers in 2021.

As Shell develops US wind projects, it is committed to being a good neighbor and meeting the unique needs of local communities. Shell works closely with them to manage the social impacts of their business activities, address any concerns about operations, and enhance the benefits available to them. Shell also makes social investments in areas determined by local community needs and priorities. Between 2019 – 2021, Shell spent $48.7 million in the US to support education and conservation efforts in the community. An additional $14.2 million was spent to fund research and development in US based public universities and other research partners.

Supplier diversity within Shell is a business program that encourages the use of minority-owned, woman- owned, veteran-owned, LGBT-owned, service-disabled veteran-owned, historically underutilized business (HUBs), and SBA defined small business enterprises (SBEs) as suppliers. Over the period of 2008-2021 Shell has spent more than $6.7 billion in procurement activities with SMWVBEs.

Shell has extensive experience in developing co-existence strategies with commercial fisheries. Throughout its decades of experience working in the offshore environment, they have recognized the cultural and economic importance of fishing grounds and the role they play in the acceptability of Shell's operations. The case is not any different for offshore wind. Shell has significant transferable expertise in managing the impacts on fisheries from their experience as an offshore oil & gas operator in the UK, Malaysia, Brazil, or the Gulf of Mexico. Shell brings to our offshore wind projects experience of

understanding, engaging, and working with fisheries to manage the impacts of operations on local communities. Shell, like Atlantic Shores, builds proactive, long-standing, and trusting relationships with fisheries, involving them from the early development stage, long before projects have consent, or the first turbines are in the water, to the building and operation phases.

The Shell Group's onshore wind experience in the US includes 6 existing joint venture interests spanning 8 operating wind projects. The Shell Group's experience in onshore wind is summarized in the table below.

Table 1-6: Shell New Energies North America wind portfolio

COD year	Project	Location	Capacity
2004	Brazos	Texas, US	160 MW
2006	Mt Storm	Virginia, US	310 MW
2002	Whitewater Hill	California, US	61.5 MW
2002	Cabazon	California, US	40.92 MW
2001	Rock River	Wyoming, US	50 MW
2003	Colorado Green	Colorado, US	162 MW

1.5 Financial statements

Atlantic Shores has been developing [redacted]

Even more relevant to Atlantic Shores' financial strength considering its direct funding by its Shareholders, EDF Renewables' and Shell New Energies' financial statements are the most relevant documents. As an affiliate of Shell USA, Inc. (Shell USA), Shell New Energies' financial statements are consolidated within Shell USA's 2021 and 2022 audited financial statements attached respectively as Appendix 1-5. As an affiliate of EDF Renouvelables S.A. (EDF Renouvelables), EDF Renewables' financial statements are consolidated within EDF Renouvelables's 2021 and 2022 audited financial attached as Appendix 1-6, prefaced by a signed Officer Certificate.

In addition, EDF S.A. and Shell plc's most recent audited financial statements are available at the following links. EDF S.A. owns the EDF Renewables Group of entities, and Shell plc owns the Shell Group of entities – both overarching organizations indirectly fund Atlantic Shores via its Shareholders:

- Shell 2022 Annual Report and accounts webpage
- EDF 2022 Investors & Shareholders' webpage, including 2022 Financial Report and 2023 Q1 sales and highlights

1.6 Disclosures

[redacted]

[redacted]

2 Project description

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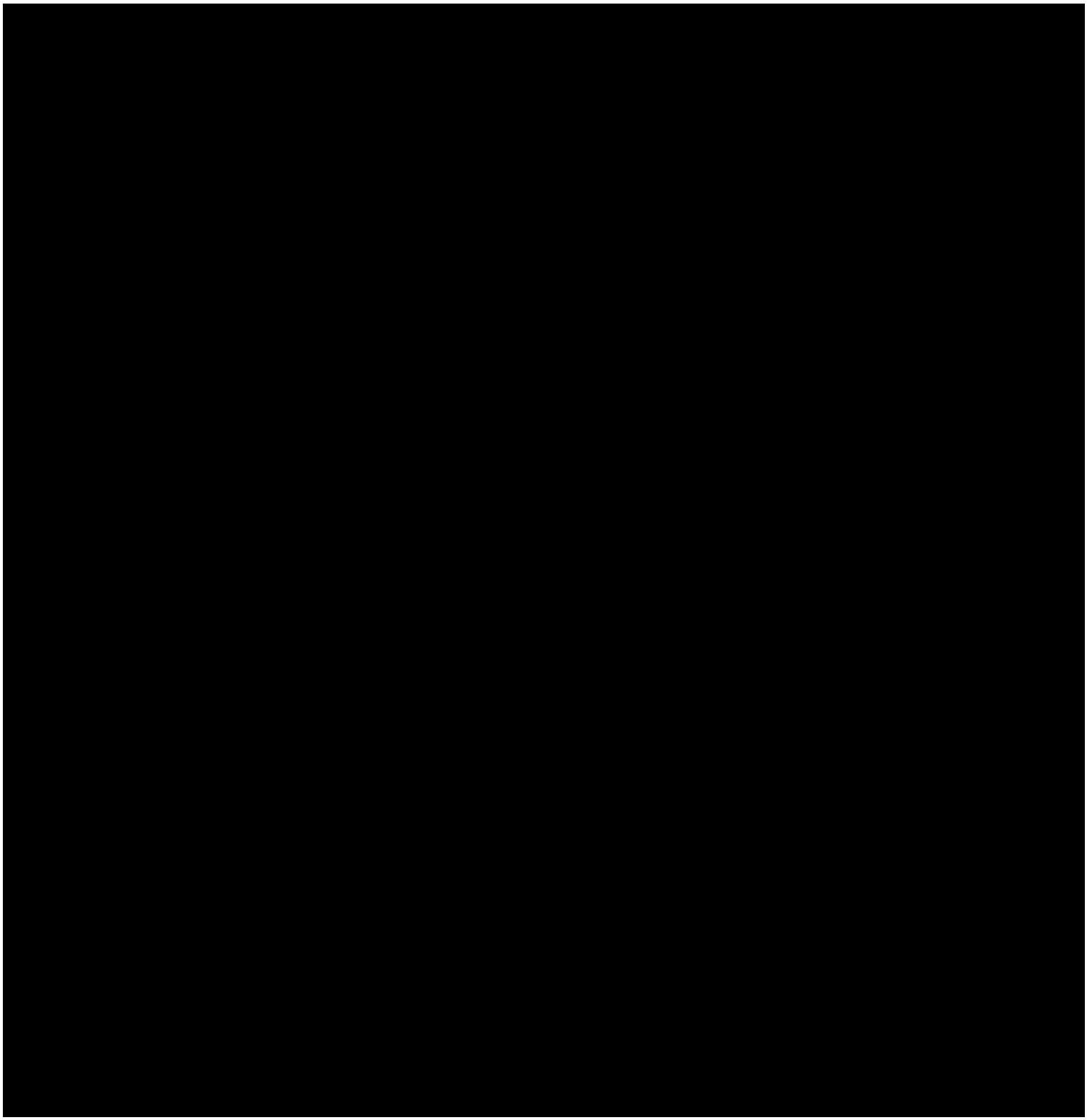

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Solicitation requirements

Table 2-1 describes the Solicitation requirements of this chapter as put forth in the SGD, as well as the relevant sections addressing these requirements.

Table 2-1: Project description - references for Solicitation requirements

Key Solicitation requirements	Application reference
A detailed description of the Project (N.J.A.C. 14:8-6.5(a)(2))	Section 2.3
Maps, surveys, and other visual aids that support the detailed description of the Project (N.J.A.C. 14:8-6.5(a)(2)): the configuration of turbine array, location of cable and balance of system equipment (N.J.A.C. 14:8-6.5(a)(2)); indicate the areas used for all aspects of the Project, including the location(s), the construction staging area(s) and port usage (N.J.A.C. 14:8-6.5(a)(2)(i)(3)); and include a map with the location of the site(s) clearly marked by longitude and latitude and BOEM, Regulation and Enforcement block numbers (N.J.A.C. 14:8-6.5(a)(2)(i)(4))	Section 2.3 / Appendix 2-1
Specification of whether the Project is located at one contiguous site within their lease area, or divided among several non-contiguous sites (N.J.A.C. 14:8-6.5(a)(2)(i)(6))	Sections 2.2 and 2.3

Describe any current uses, conflicts or characteristics of the ocean and land areas that have been identified regarding each Project (N.J.A.C. 14:8-6.5(a)(2)(i)(5))	Sections 2.2 and 2.3
Define the attributes which make the site(s) attractive, and list any potential problems, constraints, or limitations with siting an energy facility at that location or locations (N.J.A.C. 14:8-6.5(a)(2)(i)(7))	Section 2.2
To the fullest extent possible, indicate the major types of equipment that have been selected to be installed, and the characteristics specified (N.J.A.C. 14:8-6.5(a)(2)(i)(8)) (Major types of equipment include all power cables (intra-array, offshore, and onshore) and converter stations.)	Section 2.4 / Appendices 2-3, 2-6, 2-9 to 2-10, 2-15 to 2-16, 2-17, 2-22 and 2-26 to 2-27
Indicate whether the Applicant plans to own or lease equipment (N.J.A.C. 14:8-6.5(a)(2)(i)(9)) (Board Staff reserves the right to review any equipment lease or purchase documents once they have been executed.)	Section 2.4
Describe the selected equipment, the specifications, warranties, how long it has been commercially available, approximately how many are currently in service and where they are installed (N.J.A.C. 14:8-6.5(a)(2)(i)(10))	Section 2.4 / Appendices 2-3, 2-6, 2-9 to 2-10, 2-15 to 2-16, 2-17, 2-22 and 2-26 to 2-27
The type, size, and number of individual units for the selected turbines and foundations (N.J.A.C. 14:8-6.5(a)(2); N.J.A.C. 14:8-6.5(a)(2)(v))	Sections 2.3 and 2.4
The history, to date, of the same type, size and manufacturer of installed turbines and foundations globally (N.J.A.C. 14:8-6.5(a)(2))	Section 2.4 7 / Appendices 2-3, 2-6 and 2-17
Demonstrate that the wind technology is viable, cost competitive and suitable for use in New Jersey's offshore environment under varying and expected meteorological and climate conditions (N.J.A.C. 14:8-6.5(a)(2)(i)(2))	Section 2.4 / Appendix 2-24
Include a description of the ability of the equipment to work in New Jersey's offshore and near shore climates and the basis for that conclusion (N.J.A.C. 14:8-6.5(a)(2)(i)(11))	Section 2.4 / Appendix 2-24
Describe construction plans in detail, identifying proposed subcontractors, with evidence of capability of performing necessary tasks, as well as proposed time frames for completion of all necessary tasks (N.J.A.C. 14:8-6.5(a)(2)(iii))	Section 2.5 / Appendix 2-29
A summarized comparison of each of the Projects being submitted by the Applicant and their differentiating characteristics (N.J.A.C. 14:8-6.5(a)(16))	Section 2.3
If the selected equipment is not currently commercially available, describe the development status and expected timeframe for the equipment becoming commercially available, and where the equipment will be manufactured (N.J.A.C. 14:8-6.5(a)(16))	Section 2.4
The plan to procure the selected equipment, including key milestones, and status of the procurement process (N.J.A.C. 14:8-6.5(a)(16))	Section 2.4
Expected manufacturer warranty terms for major types of equipment (N.J.A.C. 14:8-6.5(a)(16))	Section 2.4

The rationale for the selection of HVDC cable voltage, including tested capabilities in similar applications and advantages / disadvantages associated with different kilovolt ("kV") ratings (N.J.A.C. 14:8-6.5(a)(16))	Section 2.4.2.2 / Appendix 2-15
A description of the method used to install the marine portion of the export cable and the target depth of cable burial (N.J.A.C. 14:8-6.5(a)(16))	Section 2.5
Identification of the port(s) and other facilities that will be used to support construction of the Project and the activities that will be conducted at each port or other facility (N.J.A.C. 14:8-6.5(a)(16))	Sections 2.5 and 2.6
Whether the Applicant plans to include energy storage capability (N.J.A.C. 14:8-6.5(a)(16))	n/a
If the Applicant plans to include energy storage capability in a Project, the following information must be provided: type of storage system, including manufacturer and model, if applicable; storage capacity, duration, and round-trip efficiency, the location of the storage system and how it is integrated with the Project, and with the electric transmission or distribution system in New Jersey; description of the anticipated storage charge / discharge operating regime, including any technology limitations affecting dispatch; description of how storage will be deployed, e.g., maximize energy revenues, reduce peak demand for electricity, or improve reliable operation of the system; description of how storage will contribute to maximizing revenues to be returned to customers; the cost of the storage system that is included in the OREC; the benefits of the storage system; and an indication of the net benefits that the proposed storage provides to New Jersey, and/or ratepayers, that is, how total expected benefits are equal to or greater than the cost of the storage system (N.J.A.C. 14:8-6.5(a)(16))	n/a
Any new and innovative technologies that will be utilized to reduce the demand for peak electric generation, improve the reliable operation of the electric system, reduce the emissions from electric generation, and/or avoid, minimize, or mitigate environmental and/or fisheries impacts (N.J.A.C. 14:8-6.5(a)(16))	Sections 2.4, 2.5, 2.7 and 2.8
A detailed description of the vessels that will be used for the construction of the Project, and how Jones Act compliance will be addressed for each vessel and/or vessel class (N.J.A.C. 14:8-6.5(a)(16))	Section 2.5
(Must include in attachments) A letter of intent or memorandum of understanding from the turbine manufacturer/supplier to supply the selected turbines (N.J.A.C. 14:8-6.5(a)(2)) (If possible, the letter of intent or memorandum of understanding from the turbine manufacturer/ supplier should state their ability to manufacture and deliver all components within the targeted schedule.)	Section 2.4 / Appendix 2-21
(Must include in attachments) A demonstration of the financial strength of the selected turbine manufacturer/supplier (N.J.A.C. 14:8-6.5(a)(2))	Section 2.4 / Appendix 2-23
(Must include in attachments) A declaration from the foundation manufacturer/supplier that states their ability to manufacture and deliver all foundations within the targeted schedule (N.J.A.C. 14:8-6.5(a)(2))	Section 2.4 / Appendices 2-2, 2-4 and 8-7
(Must include in attachments) A declaration from the undersea cable manufacturer/supplier that states its ability to manufacture and deliver all undersea cable components within the targeted schedule (N.J.A.C. 14:8-6.5(a)(2))	Section 2.4 / Appendices 2-11 to 2-12
(Must include in attachments) A letter of intent or memorandum of understanding from the proposed engineering, procurement, and construction ("EPC") contractor, balance of plant ("BOP") contractor, and/or key construction contractors or vendors (N.J.A.C. 14:8-6.5(a)(2)) (If	Section 2.5 / Appendices 2-25 and 2-28

possible, the letter of intent or memorandum of understanding from the contractor or vendor should state their intended scope and ability to meet the targeted schedule.)	
(Must include in attachments) Provide evidence that the Applicant has selected certified wind turbine generators or has a detailed certification plan that is underwritten by a certifying body (N.J.A.C. 14:8-6.5(a)(2))	Section 2.4 / Appendix 2-22
(Must include in attachments) Audited financial statements for two years, in US GAAP, including accompanying financial notes to these statements, for key Project suppliers including, but not limited to, the turbine manufacturer and EPC contractor. If not in US GAAP, the Applicant shall provide opinions from an accounting firm that attests to the financial statements, including accompanying financial notes to these statements, and the strength of the key suppliers, and has provided professional qualifications that demonstrate that expertise (N.J.A.C. 14:8-6.5(a)(3)(vii))	Section 2.4 / Appendices 2-23, 2-31 and 2-34
(Must include in attachments) The maps, surveys and other visual aids must also show plans for the location, general configuration, turbine spacing vis-à-vis one another, and orientation of the wind turbine array, and the locations of the export cable (generator lead line) route, offshore and onshore substation(s), converter stations, cable landfall location at the NGCT at Sea Girt, onshore transmission right-of-way, and POI at the LCS (N.J.A.C. 14:8-6.5(a)(16))	Section 2.3 / Appendix 2-1
(Must include in attachments) The distance in statute miles between the nearest turbine and the closest point on shore (A "statute mile," 5,280 feet, is used for purposes of measuring distance over land, whereas "nautical mile," 6,076 feet, is used for measuring distances on the ocean.) (N.J.A.C. 14:8-6.5(a)(16))	Section 2.3 / Appendix 2-1
(Must include in attachments) A demonstration of the financial strength of the: selected foundation manufacturer/supplier, selected cable manufacturer/supplier, proposed EPC contractor, proposed BOP contractor, and other key construction contractors or vendors (N.J.A.C. 14:8-6.5(a)(16))	Section 2.4 and 2.5 / Appendices 2-7 to 2-8, 2-13 to 2-14, 2-23, 2-31 and 2-34
(Must include in attachments) Disclosure of known existing or pending litigation among the wind turbine generator manufacturer, foundation manufacturer, cable manufacturer, and/or other major equipment manufacturer that may impact Applicant's ability to achieve the COD set forth in Applicant's Application (N.J.A.C. 14:8-6.5(a)(16))	Section 2.4 / Appendix 2-36
(Must include in attachments) If the Applicant plans to include energy storage capability, a diagram showing the configuration of the storage system with respect to Project facilities and the POI (N.J.A.C. 14:8-6.5(a)(16))	n/a

2.1 Summary

Atlantic Shores appreciates the opportunity to share the description of our proposed [redacted] and Prebuild Infrastructure (PBI) with the NJ BPU. In this chapter we provide a detailed overview including our forward-looking project plans, mature site development, and substantial US and NJ experience through our ongoing Project 1.

Section 2.2 **describes the conditions and characteristics of our Project site** and elaborates on the efforts we have made to deepen our understanding of the technical and environmental constraints as well as the attractive characteristics of our proposed Lease Area, including shallow waters, favorable soil conditions, and strong winds. Throughout our 4+ years of development, we have performed [redacted] site-specific environmental studies, continuous and full-coverage geophysical and geotechnical campaigns, as well as vessel traffic, fisheries and visual simulations analyses. Due to this extensive data collection, we can confidently state that our Project is highly deliverable and de-risked. Our plans and designs are firmly based on real data acquired on-site, minimizing our reliance on assumptions. The knowledge we have developed sets us apart from any other developer and any project in the area bidding into this Solicitation.

[redacted] 2.3 [redacted]

With [redacted] out of our +5GW Portfolio and the entire New Jersey / New York area. We have chosen to [redacted] as we aim to only offer the [redacted] to the NJ BPU. Our offer presents a substantial step towards the State's 11 GW offshore wind target and aligns with New Jersey's Energy Master Plan and Offshore Wind Strategic Plan. The Project builds upon the successful ongoing development of our recent Project 1, allowing us to benefit from [redacted] that impact cost of development supply, construction, and operations. Extensive engagements with stakeholders such as local communities, environmental organizations, fisheries, and governmental agencies have shaped the design of our Proposal to address key learnings and feedback.

Section 2.4 describes our advanced **equipment plans** for all key components such as turbines, foundations, cables, and onshore and offshore converter stations, including the supplier selection process, design studies, safety and failure considerations, and equipment ownership considerations. We work with suppliers that bring extensive technical expertise, proven track records in terms of deliverability, HSSE performance, as well as the necessary financial strength to ensure the viability and robustness of our plans. Our technical and commercial teams have worked closely with each supplier to select the proposed equipment, while prioritizing and encouraging a focus on local supply chains wherever reasonable balancing economic benefits to New Jersey with ratepayer impacts. In-depth studies have identified the most feasible technologies and designs suitable for our proposed Project configuration and New Jersey waters. From this comprehensive assessment we are confident that our Project maximizes reliability, safety and suitability for site conditions and characteristics.

Local content commitment, strength of our guarantees, [redacted] In fact, [redacted]

[redacted]

[redacted] Localizing these key manufacturing facilities in New Jersey will create significant long-term value for the State as future projects in the US, including Atlantic Shores and other developers, will be attracted by a local sourcing opportunity (see Chapter 8 - Economic development plan for further details).

Section 2.5 explains our detailed **construction plan** from installation to commissioning for all key components. We aim to deliver a high quality and timely Project while ensuring the health and safety of all stakeholders and minimizing impacts to the environment and ocean users. In coordination with suppliers and contractors, we have carefully defined our construction schedules to optimize our delivery timeline based on key learnings from our Project 1, experienced supplier feedback, our expertise and global best practices. Prior to and during construction, Atlantic Shores will adhere to the highest safety standards with aims for zero-harm, true to our core value *Be safe*. To this end, employees will receive comprehensive training on our stringent HSSE policies and standards.

Section 2.6 shows the **port facilities** that we intend to use for our proposed Project: [redacted] creating additional economic benefits for the local offshore wind supply chain. For the NJWP, Atlantic Shores already has a LOI in place with the NJ EDA for Project 1 (see Appendix 8-1) [redacted]

Section 2.7 outlines our plans to build a first of its kind [redacted] to support our maintenance operations. [redacted]

Section 2.8 explores additional innovative and impactful ways to drive our [redacted]

Project Descriptions | Our commitment to New Jersey

- [redacted] out of our +5GW Portfolio, leveraging over 4 years of development based on deep understanding of site characteristics, including attractiveness, limitations, and constraints, from over [redacted] site assessments and continuous G&G campaigns
- Incorporation of learnings from Project 1 into development, planning and execution of Project
- Commitment to maximize local content via:

[redacted]

- Highest safety standards and practices aiming for zero-harm, true to our core value: *Be safe*

[redacted]

[redacted]

2.2 Site description

2.2.1 General lease area characteristics and constraints

The proposed Project is located as [redacted] site within Atlantic Shores' [redacted] off the coast of New Jersey, between [redacted], as shown in Figure 2-1. The area is part of Atlantic Shores' Portfolio of offshore wind lease areas (see also Section 1.3.2) with the ability to serve as a major contributor to New Jersey's offshore wind goals.

[redacted]

[redacted] which was identified by BOEM as suitable for offshore renewable energy development through a multi-year, public environmental review process. Despite these considerable efforts in renewable energy lease area identification, all federal renewable energy lease areas have some potential for conflicts of varying degrees with other existing or historic ocean uses. A core value of the Atlantic Shores team is to *Be a good neighbor* and we strive to minimize our effects on existing uses of our Lease Area while supporting New Jersey's clean energy [redacted]

[redacted]

Our offshore development planning and [redacted] reflect our mature understanding and consideration of the many other uses and potential conflicts with these prime offshore locations, including our consideration for:

[redacted]

[redacted]

Over the past 4 years, we have conducted extensive site assessments that revealed the Lease Area's wide range of attractive attributes for the development of an offshore wind project, overall as well as compared to our Bight lease area including:

[redacted]

[redacted] (see Figure 2-1), [redacted]

[redacted]

[redacted]

Beyond this, the Atlantic Shores team has been collecting high quality and detailed geophysical and geotechnical data from this Lease Area [redacted], giving us a very complete understanding of the site characteristics and meaningfully improving our design and schedule certainty. Due to this wealth of data and knowledge, we can confidently state that our Proposal is [redacted]

[redacted]

[redacted]

The **wind resource** in our Lease Area is favorable for offshore wind energy generation, with an expected long-term average speed [redacted] at a height [redacted] (see Figure 2-2). Atlantic Shores has conducted extensive wind resource evaluation efforts, over several years, to gain a high degree of confidence in this wind resource. [redacted] Figure 2-3 [redacted]

Figure 2-2: Wind resource speed, direction, and frequency at hub height from [redacted]

Figure 2-3: Atlantic Shores LiDAR buoy locations and data from MARACOOS web

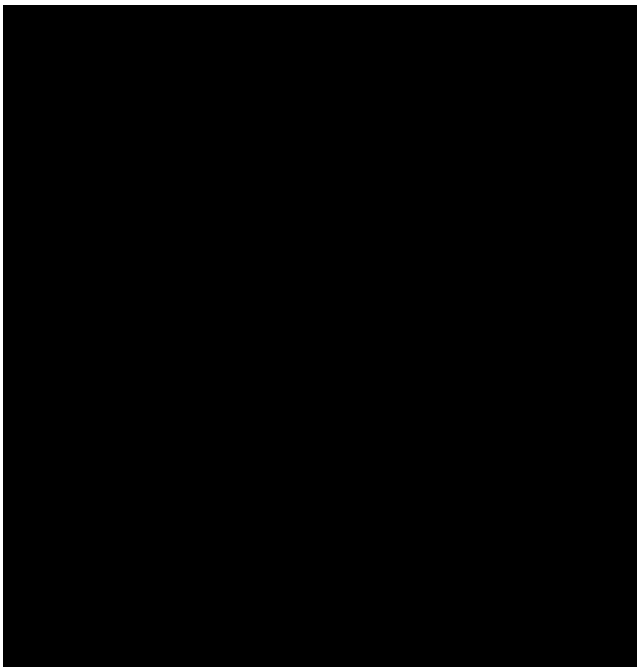
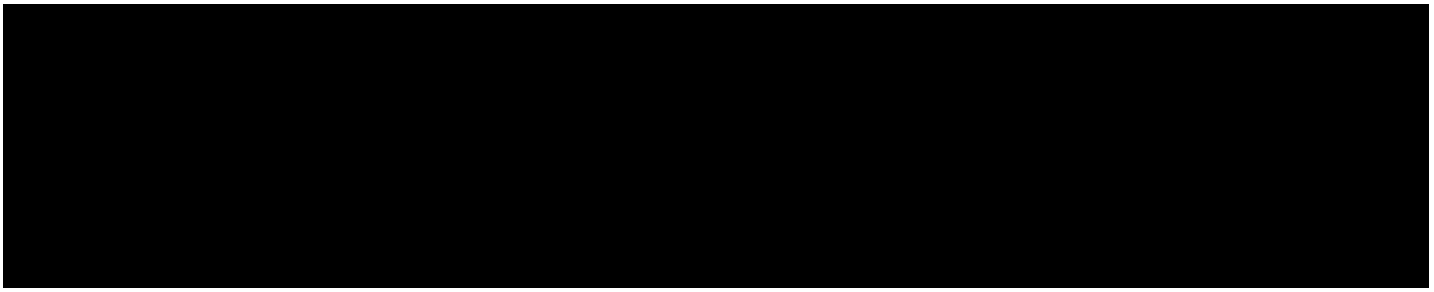


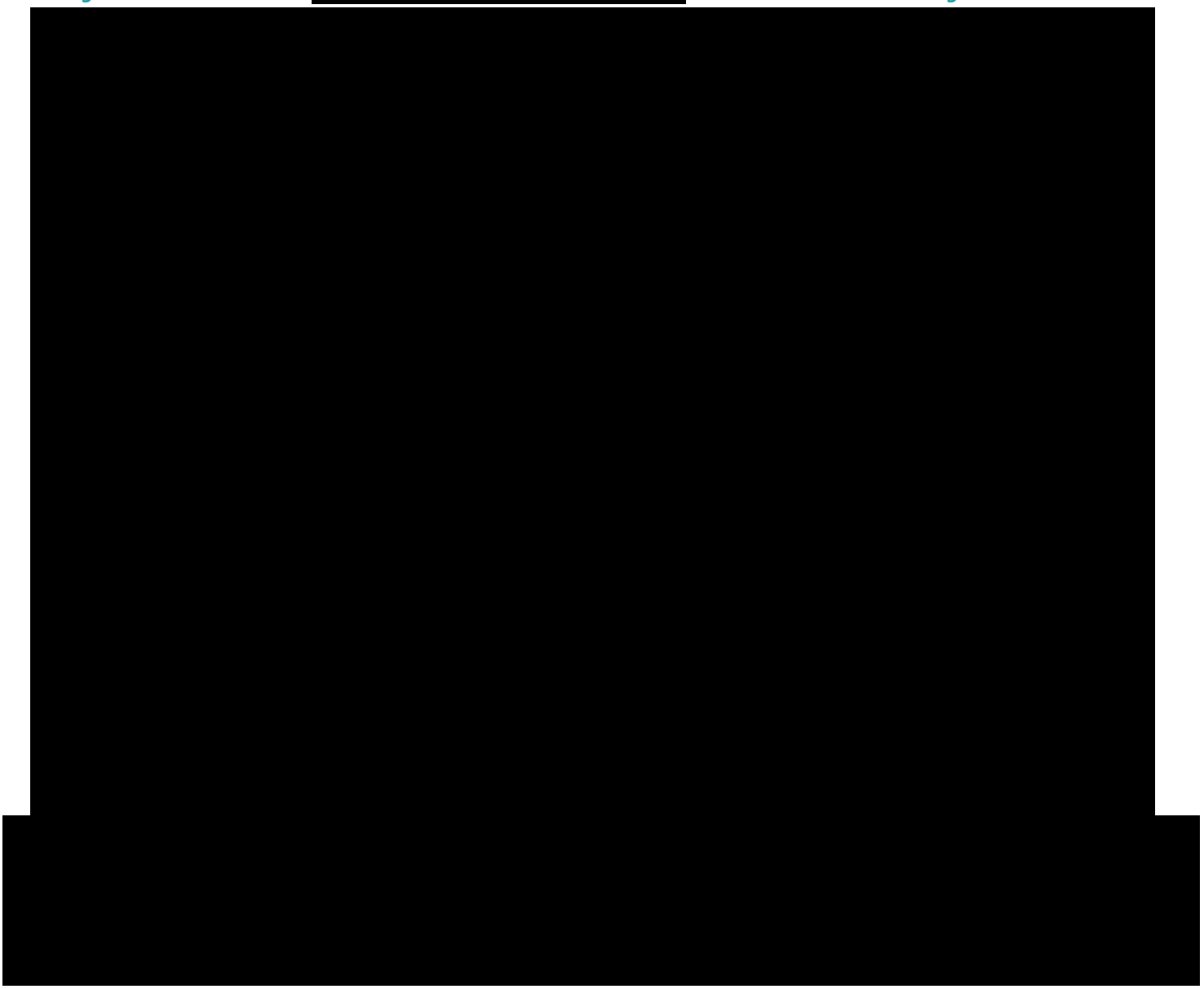
Figure 2-4). This understanding is used as a Shores has taken a proactive approach to avoid sensitive areas and buffer activities to ensure protection and safety based on industry best practice and the team's experience. The potential constraints addressed while determining the positioning of wind turbines are detailed below and can be found in further detail in Chapter 11 - Fisheries protection plan)



[16]

[17]

Figure 2-4: Atlantic Shores [redacted] shown with relevant existing constraints



2.2.2 Site use and design considerations

[redacted] host to multiple existing ocean uses, and we take our role of responsible developer seriously – especially when it comes to minimizing our impacts on these other users. [redacted] Figure 2-5. [redacted] We discuss the efforts we have taken to minimize impacts to commercial and recreational fishing vessels in more detail in Chapter 11 - Fisheries protection plan. [redacted]

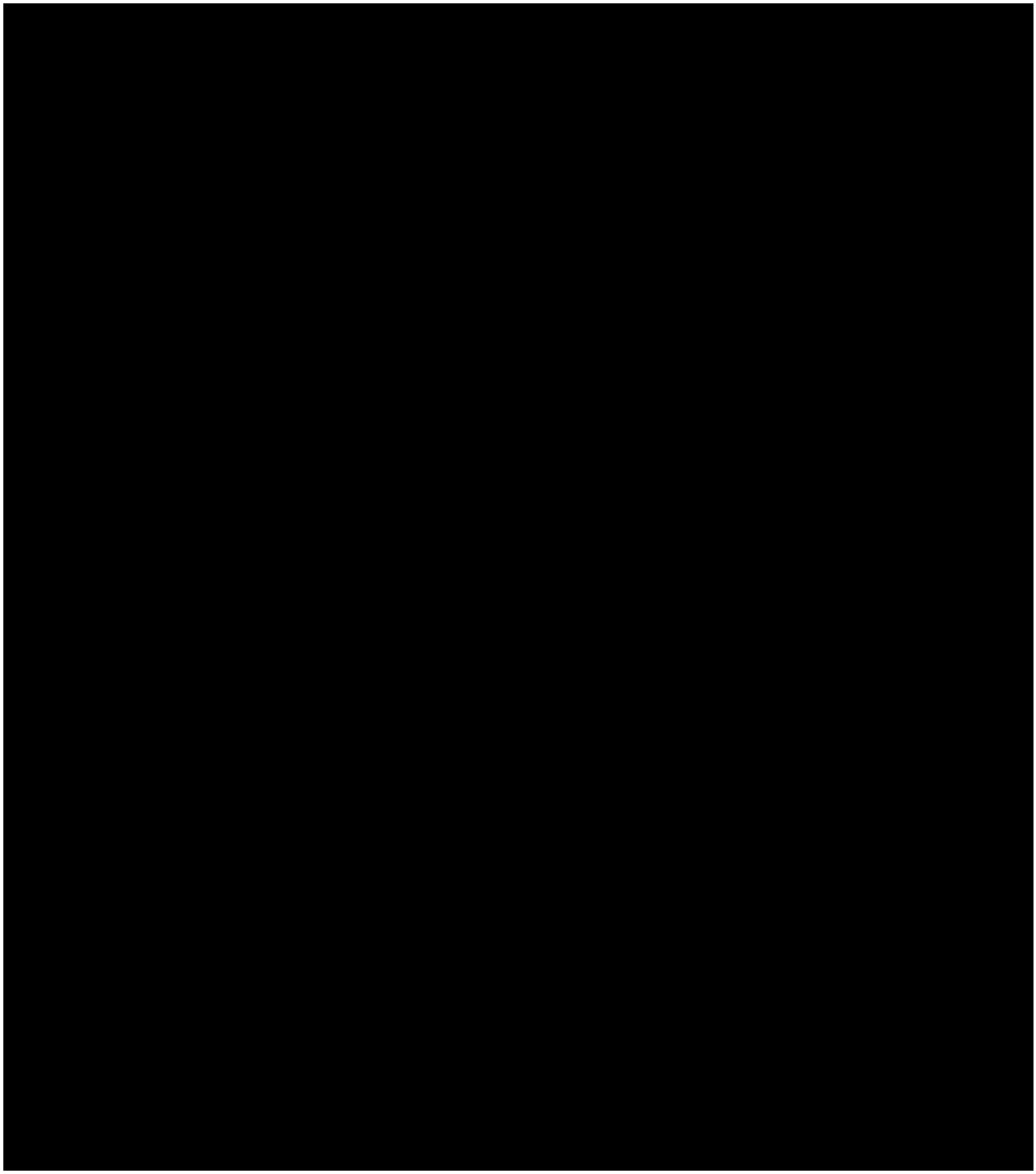
Through our early, comprehensive stakeholder engagement and fisheries liaison programs, we have received numerous and specific feedback on site layout [redacted] were incorporated into the design and layout configuration of the Project presented in this Application:

- **Wind turbine row orientation and spacing:** [redacted]
- **Spacing between wind turbines:** [redacted]

[18] [redacted]

Figure 6:

[redacted]



2.3 Project description and configuration

2.3.1 Project description

[redacted] as well as a fully compliant PBI proposal. [redacted]

We carefully selected this specific Project out of our +5 GW Portfolio based on the Solicitation requirements, New Jersey's goals derived from the Energy Master Plan and the New Jersey Offshore Wind Strategic Plan, and our experience as a trusted partner of the State. In addition, feedback received through stakeholder engagement, [redacted], has played a key role in shaping the design and construction plan. The Project's characteristics and design configuration is summarized in Table 2-2.

[redacted] NJ BPU, [redacted] 14 Permitting plan). [redacted]

[redacted] 1, under an OREC Order with the NJ BPU since June 2021. [redacted] Chapter 8 - Economic development plan).

Table 2-2: Overview of the proposed offshore wind Project

Specification	Details
Applicant	[redacted]
Project installed capacity (MW)	[redacted]
Project maximum facility output at POI (MW)	[redacted]
Location / Lease Area	[redacted]
Qty. of turbines	[redacted]
Turbine manufacturer	[redacted]
Turbine type	[redacted]
Turbine rotor diameter	[redacted]
Point of interconnection	[redacted]
SAA circuit	[redacted]
No of offshore substations	[redacted]
No of export circuits	[redacted]
Foundation type	[redacted]
Marshaling port	[redacted]
O&M port	[redacted]

Further details on the selected design and technologies, and information on base case suppliers are found in Section 2.4.

2.3.2 Project configuration

[redacted]

[redacted]

to the Sea Girt National Guard Training Center (NGTC) landfall site and through an HVDC onshore cable circuit in the PBI duct bank to the corresponding onshore substation planned at the future Mid Atlantic Offshore Development (MAOD) parcel near the LCS POI.

[redacted] 2-8. [redacted]

[redacted]s. As such, we are uniquely positioned to present a technically mature and deliverable solution to this offshore approach and landfall at this time.

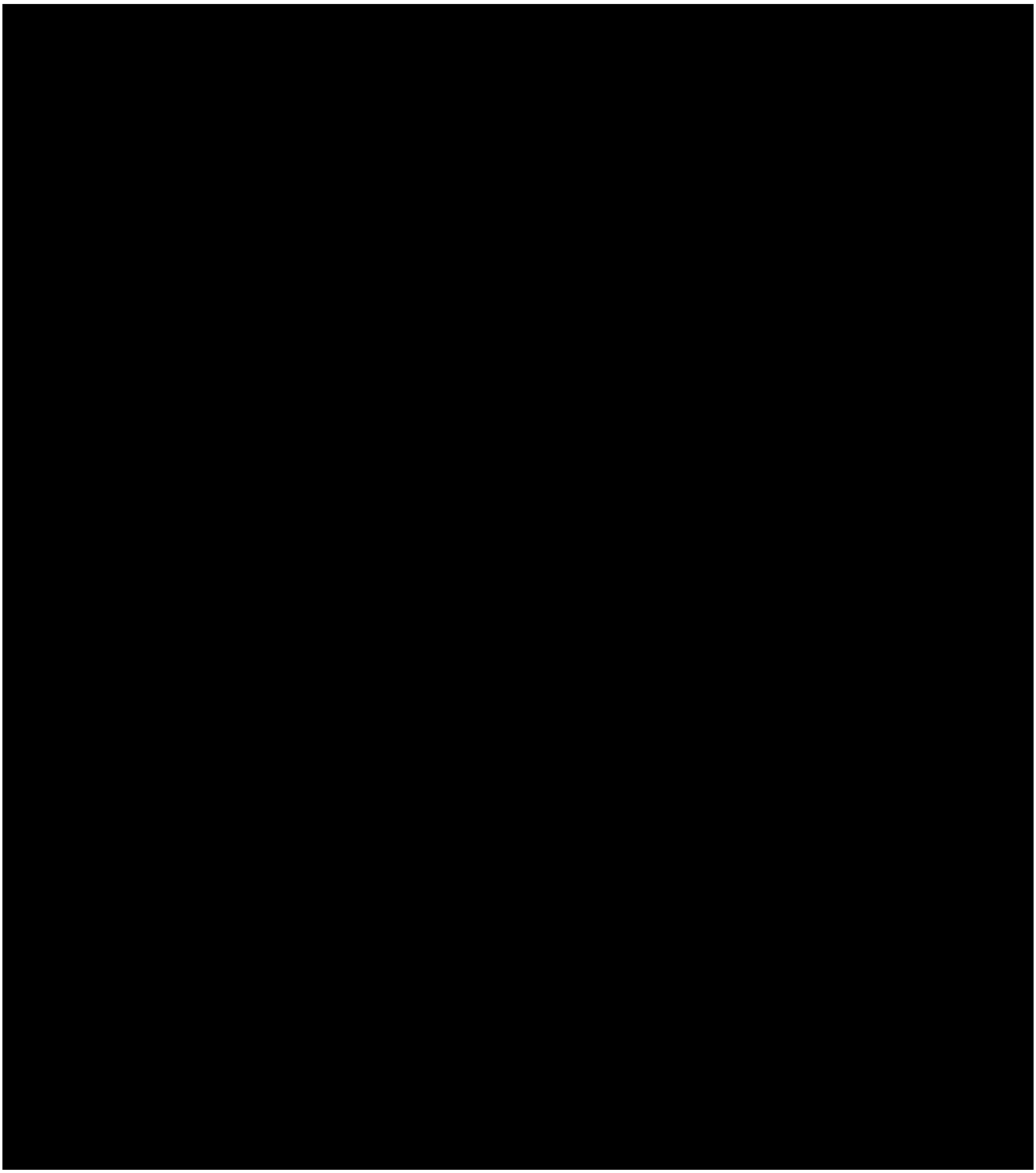
[redacted]

[redacted] Figure 2-9) [redacted]

Full maps for the Project are attached in in Appendix 2-1.

Figure 2-8: [redacted]

Figure 2-9: [redacted]



2.4 Equipment and manufacturing plan

2.4.1 Design and supplier selection process

Our ambition to balance maximizing economic benefits to the State of New Jersey while minimizing ratepayer impacts required involvement from our commercial, technical, and development teams. We performed in-depth studies to identify the most feasible technology, combined with an extensive procurement effort to select suppliers that create the most value and comply with industry HSSE standards.

[redacted]

Chapter 8 - Economic development plan, [redacted]

2.4.2 Equipment description

2.4.2.1 Foundation and transition piece

Concept and fabricator selection

[redacted]

[redacted]

[redacted]

Figure 2-10.

Equipment specifications

Table 2-3 presents the type, number and size of foundations expected for the Project.

Table 2-3: Foundation specifications

	Specifications
[redacted]	

[redacted] Table 2-4 [redacted]

Table 2-4: Foundation design features

Design Feature	Value Range
[redacted]	

[redacted]

Equipment and fabricator maturity

[redacted]

Financial strength of suppliers

[redacted]

[redacted]

[redacted]

[redacted]

2.4.2.2 Export and inter-array cable

Concept and fabricator selection

The Project's electrical transmission system includes onshore and offshore export cables, as well as inter-array cables. For[redacted]

[redacted]

Table 2-5: Suppliers for export and inter-array cables

Characteristic	Export cable	Inter-array cables
[redacted]		

[redacted]

Equipment specifications

Table 2-6: Export and inter-array cables characteristics

Specifications

Table 2-7: Inter-array cables description and characteristics

Inter-array cable equipment	Description and characteristics
[redacted]	

Table 2-8: Offshore export cables description and characteristics

Offshore export cable equipment	Description and characteristics
[redacted]	

Table 2-9: Onshore export cables description and characteristics

Onshore export cable equipment	Description and characteristics
[redacted]	

[redacted]

Figure 2-11.

Equipment and fabricator maturity

HVDC cable technology is increasingly being used in the offshore wind industry worldwide due to its ability to transmit power over long distances with low losses and fewer number of subsea cables when compared with HVAC technology.

[redacted]

Figure 2-11: Inter-array cable layout for Project 2

[redacted]

[redacted]

Financial strength of suppliers

The letter of support declaring each supplier's ability to deliver within the scheduled date is appended in Appendix 2-11 f[redacted]

[redacted]

Alternate export and inter-array cable supply

[redacted]

[redacted] (Table 2-5)[redacted]

[redacted]

[redacted]

Alternate inter-array cable voltage

[redacted]

[redacted]

Rationale on the selected HVDC export cable voltage

There are a limited number of HVDC voltage levels that can be considered standard for large offshore wind interconnection:

[redacted]

2.4.2.3 Onshore substation and offshore substation platform

Concept and fabricator selection

In order to transfer power from the wind turbines to shore, an HVDC transmission link will be installed. [redacted]

Figure 2-12: Typical offshore wind farm layout with HVDC transmission link

Offshore substation platform

Figure 2-13: Typical offshore substation platform (OSP)

2.5.6).

13 Interconnection plan Table 2-10

Table 2-10: Estimated dimensions for the main components of the OSP for [redacted]

[redacted]

[redacted]

[redacted] Figure 2-14. [redacted]

Onshore substation

The onshore substation will be constructed on the parcel designated by MAOD for converter stations, near the new LCS. The design, construction and interconnection of the onshore converter station to the POI will comply with all requirements from the corresponding Independent System Operator (ISO), PJM, MAOD and the transmission. [redacted]

[redacted]

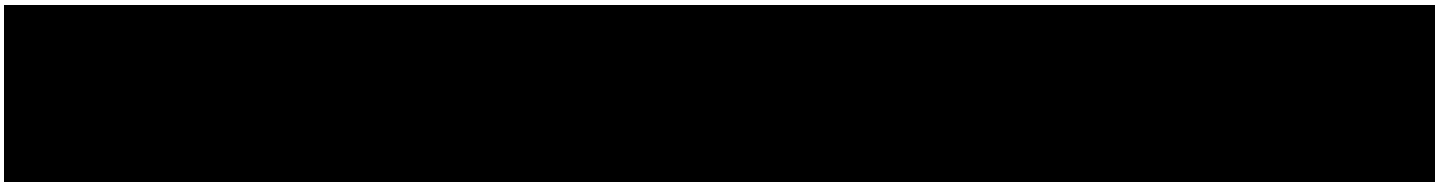


Figure 2-14: 3D drawing of HVDC OSP concept incl. OTN readiness

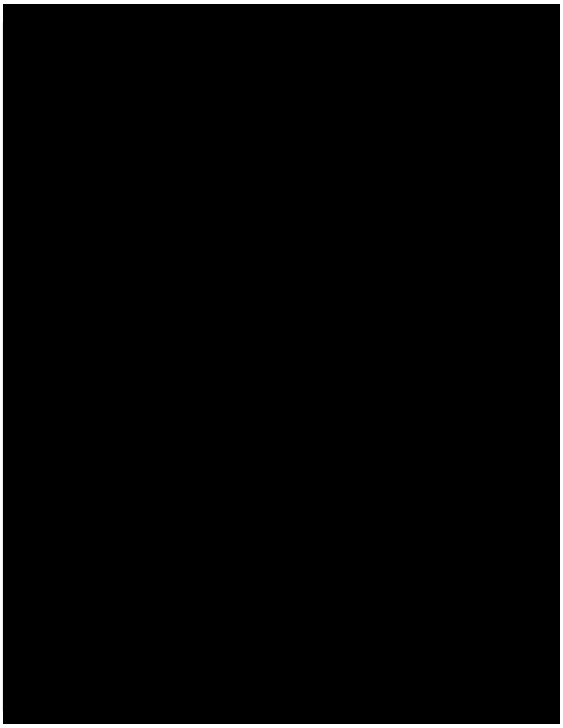


Figure 2-15: Example HVDC [redacted] onshore converter station layout for [redacted]

[redacted] 2.5.4). [redacted] Chapter 8 - Economic development plan. [redacted] Figure 2-15.

[redacted]

HVDC technology selection

[redacted]

Equipment specifications

[redacted] 2-11 [redacted]

[21] In [redacted]

[redacted]

Table 2-11: Converter station specifications for [redacted]

[redacted]

[redacted]

The main parts of the OSP are described in more detail in Appendix 2-16.

Equipment and fabricator maturity

[redacted]

Financial strength of suppliers

[redacted]

Alternate converter stations supply

[redacted]

[redacted]

[redacted]

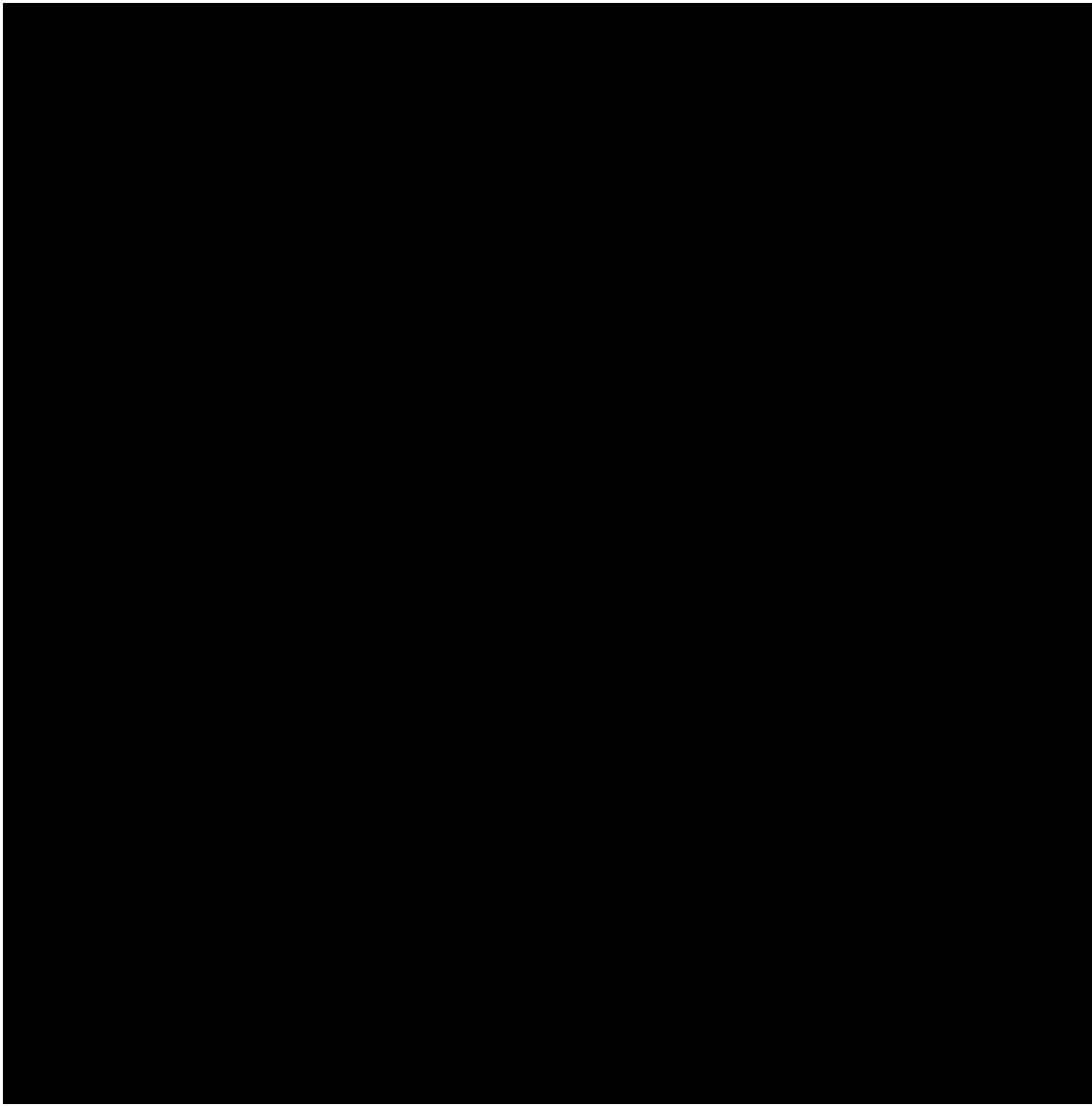
Table 2-12: Base case and alternative cases for converter stations strategy for [redacted]

[redacted]

2.4.2.4 Wind Turbine generator

Concept and fabricator selection

[redacted]



Equipment specifications

Table 2-13 below presents the type, number, and size of turbines planned for [redacted]

Table 2-13: Type, number, and size of turbines

Specifications	Details
[redacted]	

[redacted]

Figure 2-16: Examples of suitable existing, US-flagged vessels capable of performing main component replacement on the [redacted]

[redacted]

[redacted]

[redacted]

Equipment and fabricator maturity

[redacted]

Wind turbine certification

[redacted]

Financial strength of supplier

[redacted]

[redacted]

Alternate wind turbine generator supply

[redacted]

2.4.2.5 Prebuild Infrastructure

The Atlantic Shores PBI consists of duct banks to accommodate four HVDC cable circuits bringing power from Atlantic Shores' and other offshore wind projects to the grid. The PBI runs [redacted] miles from the Sea Girt NGTC landfall site to the point of demarcation (POD) adjacent to the LCS. Details on the route, technical solution, and construction plan are given in Chapter 13 - Interconnection plan.

Atlantic Shores is confident that we deliver the best value to the NJ BPU for the PBI for the following reasons:

ATLANTIC SHORES offshore wind

WHY ATLANTIC SHORES DELIVERS BEST VALUE FOR THE PBI

1. Atlantic Shores has been developing this specific onshore route from Sea Girt to the Larrabee Substation (original POI) since 2019 and has heavily de-risked this route to date.

[redacted]

Route Overview

[redacted] Figure 2-18. [redacted]

[redacted]

[redacted]

[redacted] 13 [redacted] Interconnection plan [redacted]

[redacted]

PBI duct bank Design

For the detailed design of the PBI, please refer to Chapter 13 - Interconnection plan.

Contractor experience and equipment / fabricator maturity

[redacted]

Financial strength of suppliers

[redacted]

2.4.2.6 Other Equipment

[redacted]

2.4.3 Milestones for main packages

As further detailed in Chapter 12 - Project timeline and Appendices 12-1 and 12-2, the critical milestones assumed for the main packages presented above are highlighted in Table 2-14.

Table 2-14: Summary of key milestones for main packages

[redacted]

2.4.4 Supplier litigation

[redacted]

2.4.5 Safety, outage, and failure considerations

One of Atlantic Shores' core values is to keep our people and the environment safe, by focusing on health, safety and reliability for all our design choices. With this core value in mind, Appendix 2-27 outlines how each of our facility components are designed to withstand outages and failures to ensure that the system is inherently safe.

2.4.6 Suitability of equipment for use in New Jersey waters

[redacted] 2.4.2 [redacted]

[redacted]

The offshore climate in the Atlantic waters off NJ State can be severe at times, with extreme hurricane events seemingly becoming more frequent. The experience of the offshore structural designers and fabricators is a critical factor in the creation of foundation, structures, and equipment which will ride through such extreme events. Specific site data and measurements, and a global understanding of both annual and extreme conditions are essential to ensure the long-term integrity of the structures, as they will become an integral and essential element of the power generation and delivery systems for the region. The onshore climate can be similarly severe, with the added risk of flooding. All equipment will be designed to withstand these conditions, along with high winds, sea salt, snow, and ice. [redacted]

[redacted]

[redacted]

2.4.7 Equipment ownership structure

[redacted]

2.5 Construction plan

Atlantic Shores aims to deliver a robust Project within time and budget, while also ensuring the health and safety of all stakeholders and minimum environmental impact. The construction schedule has been carefully drafted to ensure deliverability of the Project, in coordination with suppliers and contractors, ensuring alignment of timeline for delivery and installation of key equipment. The implementation schedule is detailed further in Chapter 12 - Project timeline. The main drivers of the construction plan include:

[redacted]

The construction plan for the Project described here was developed leveraging experience of Project 1 and other prior OSW projects. [redacted]

[redacted]

2.5.1 Atlantic Shores' commitment to safety

Atlantic Shores upholds safety as a core value and Zero-Harm as a core goal. Atlantic Shores has already demonstrated our ability to maintain safe operations in the last four years of our survey campaigns, with all safety measures implemented. Atlantic Shores has developed and implemented Health & Safety polices and guidelines mirroring the most stringent requirement of either Parent organization, with the goal of ensuring that Health, Safety, Security, & Environment (HSSE) and Social performance (SP) are incorporated into the Project's daily activities.

Prior to and during construction, Atlantic Shores will put a high emphasis on training employees to the required standards of safe behavior and selecting and monitoring contractors closely to ensure application of the same or more stringent HSSE guidelines. All suppliers and contractors selected for this Application have satisfactorily met Atlantic Shores' HSSE requirements. Atlantic Shores will utilize its Safety Management System (SMS) that describes the activities, timing, and resources necessary to meet the HSSE requirements of the Project. HSSE policies and procedures will help ensure that Atlantic Shores can construct and deliver the Project with zero safety-related incidents and will ensure the well-being of all our employees, contractors, and the public. Contractors will be required to adhere to the SMS, Environmental Plan, and Quality Plan for the Project[redacted]

2.5.2 OSW Installation sequence

[redacted]

Our Project developed its offshore installation sequence, based on learnings from our Project 1 sequence and global best practices.

[redacted]

Figure 2-19, [redacted]

[redacted]

Our Project developed its offshore installation sequence, based on learnings from our Project 1 sequence and global best practices.

[redacted]

Figure 2-19: General Project construction sequence

[redacted]

2.5.3 Prebuild Infrastructure construction

[redacted]

[redacted]

[redacted] 13 Interconnection plan. [redacted]

2.5.4 Onshore converter station construction

The construction of the onshore converter station will take place at the designated MAOD parcel. [redacted]

[redacted]

[redacted] Table 2-15.

Table 2-15: [redacted]

[redacted]

2.5.5 Foundation installation

[redacted] (Figure 2-20) [redacted]

[redacted]

[redacted] Figure 2-20 [redacted]

Figure 2-20: [redacted]

[redacted]

[redacted] Figure 2-21). [redacted]

[redacted]

[redacted]

[redacted]
Figure 2-22), [redacted]

Figure 2-21: [redacted]

Figure 2-22: [redacted]

2.5.6 Offshore substation platform installation

2.5.6.1 Installation contractors and vessels

[redacted]

[redacted]

Table 2-16: Offshore substation fabrication locations

[redacted]

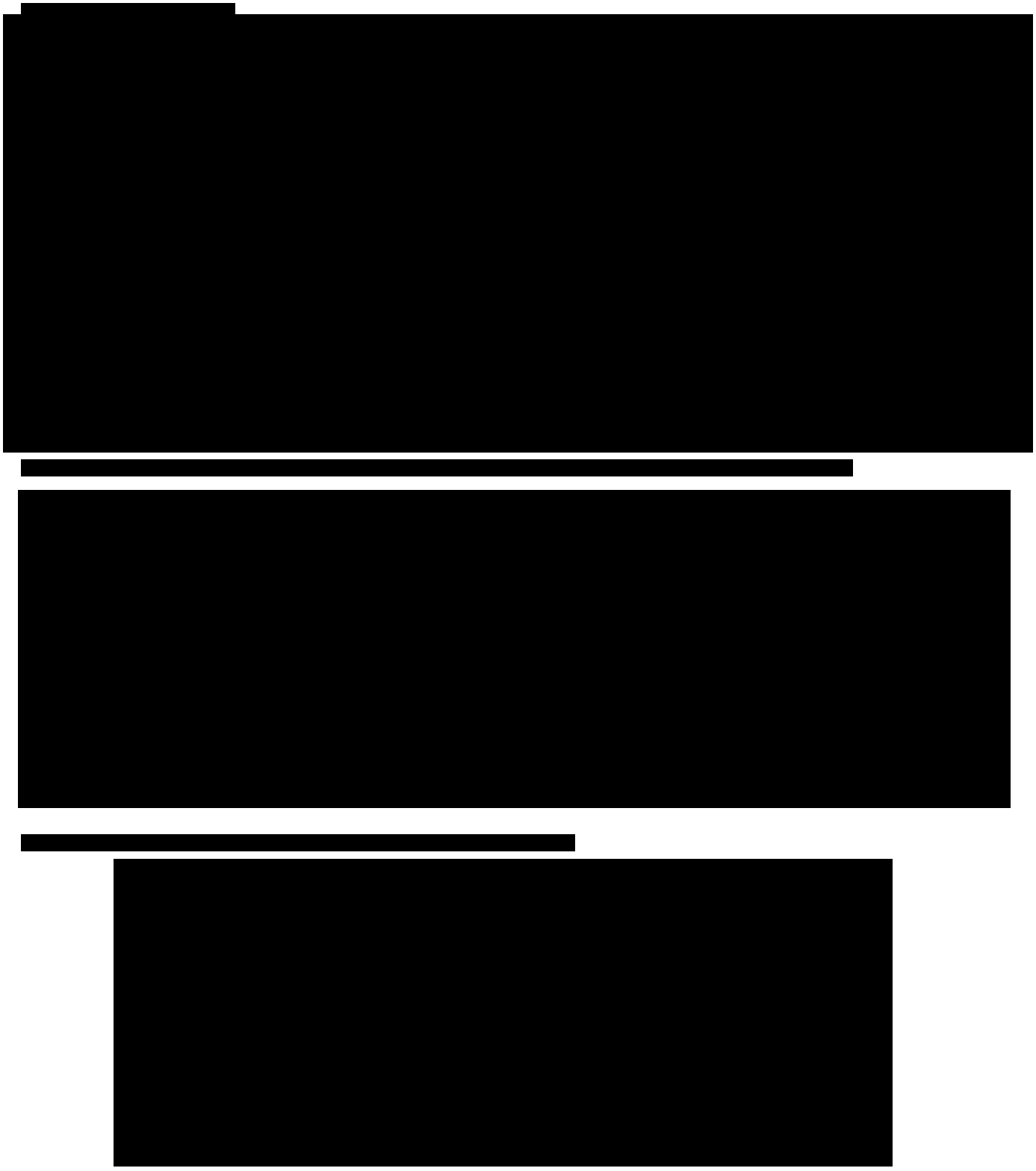
[redacted] Table 2-17). [redacted]

Table 2-17: Offshore substation installation vessels

[redacted] Figure 2-24. [redacted]

[redacted]

Figure 2-23: [redacted]



[redacted]

2.5.6.2 Support Vessels

[redacted] Figure 2-27).

[redacted] Figure 2-27) [redacted]

[redacted]

Figure 2-27: [redacted]

[redacted]

2.5.7 Offshore cable installation

[redacted]

2.5.7.1 Inter-array cable installation

[redacted]

[redacted] Figure 2-28. [redacted]

[redacted]

Figure 2-28: [redacted]

2.5.7.2 Export cable installation

[redacted] see Figure 2-29). [redacted]

Figure 2-29: [redacted]

2.5.8 Wind turbine generator installation

[redacted]

[redacted]

[redacted] Figure 2-31.

[redacted]

Figure 2-30: J[redacted]

[redacted]

[redacted]

[redacted]

Figure 2-31: [redacted]

[redacted]

2.5.9 Technical capabilities of key installation contractors

[redacted]

Proposed installation contractors per package are summarized in Table 2-18.

Table 2-18: List of key installation contractors and their prior experience

[redacted]

[redacted]

2.5.10 Financial capabilities of key installation contractors

Financial statements of key installation contractors can be found in the Appendices referred to in Table 2-19.

Table 2-19: Financial statements of key installation contractors

Package	Contractor	Relevant Appendix
[redacted]		

2.5.11 Quality assurance and control

[redacted]

2.6 Port facilities used for the Project

[redacted]

[redacted]

[redacted] 8 - Economic development plan. [redacted]

[redacted]

[redacted]

Figure 2-32 [redacted]

Figure 2-32: [redacted]

[redacted]

[redacted]

Table 2-20: [redacted]

[redacted]

[redacted]

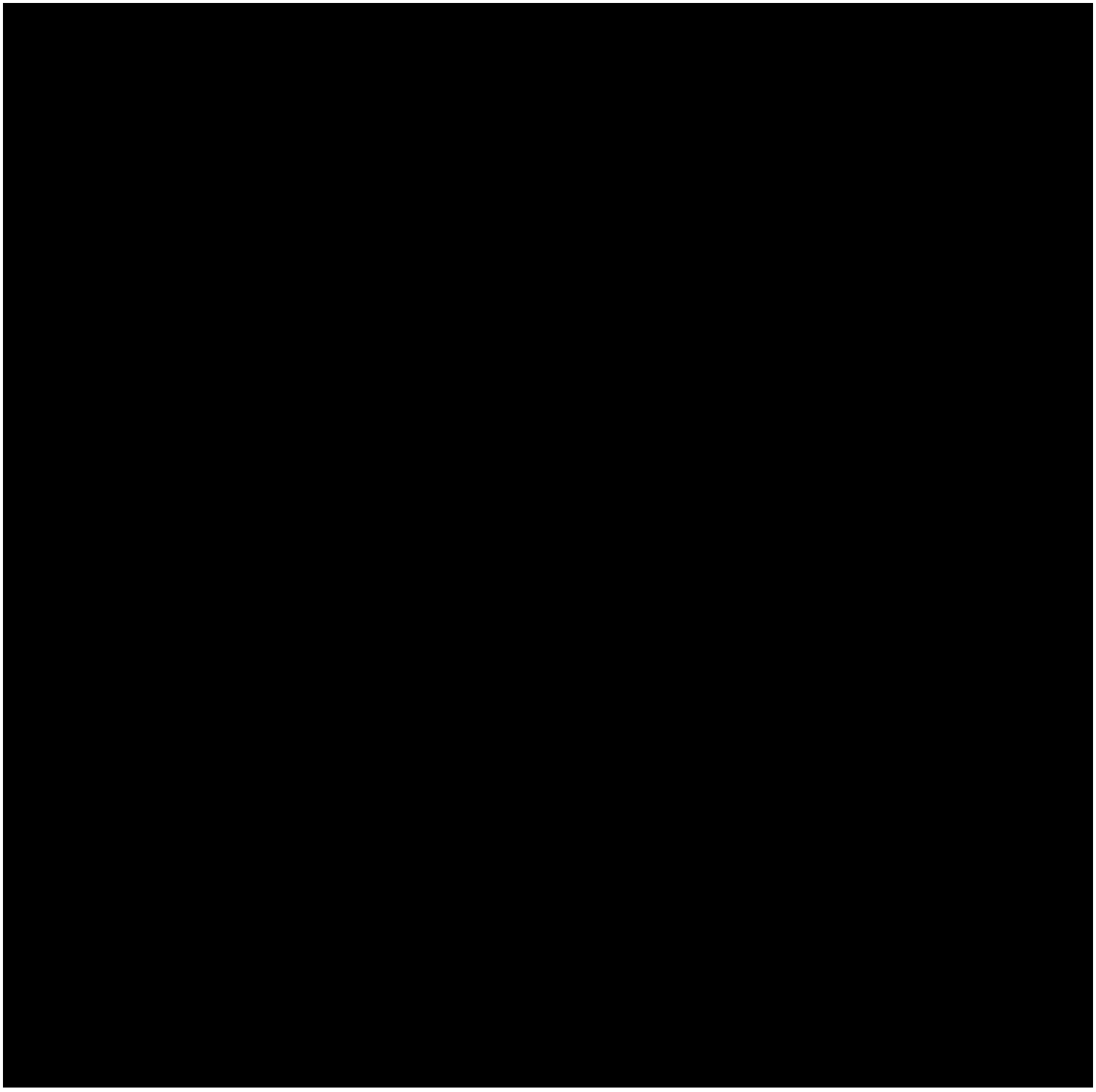


Figure 2-33: [redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

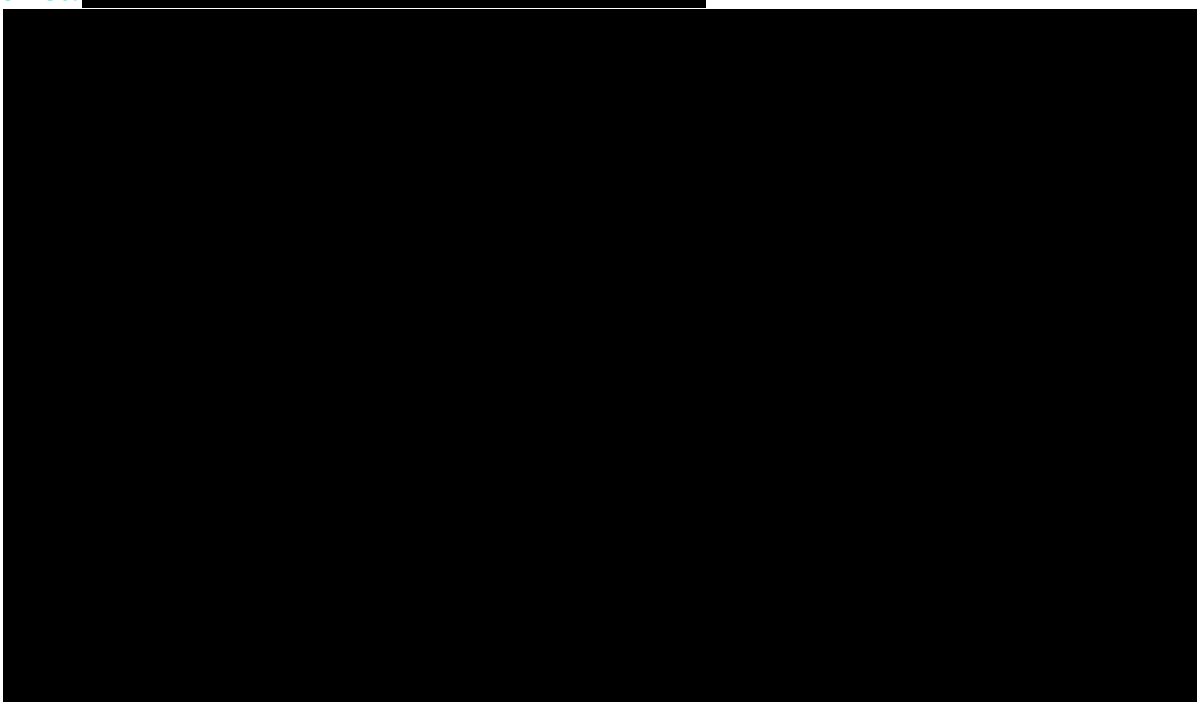
[redacted]

[redacted]

Figure 2-35 [redacted] 2-36. [redacted]

Figure 2-35: [redacted]

Figure 2-36: [redacted]



[redacted]

[redacted]

Figure 2-37: [redacted]

[redacted]

[redacted]

2.7.5 Establishing a permitting pathway

[redacted]

2.8 Other innovative solutions by Atlantic Shores

[redacted]

[redacted]

Figure 2-38: [redacted]

[redacted]

[redacted] Figure 2-39 [redacted]

[redacted] Figure 2-38) [redacted]

[redacted]

[redacted]

[redacted]

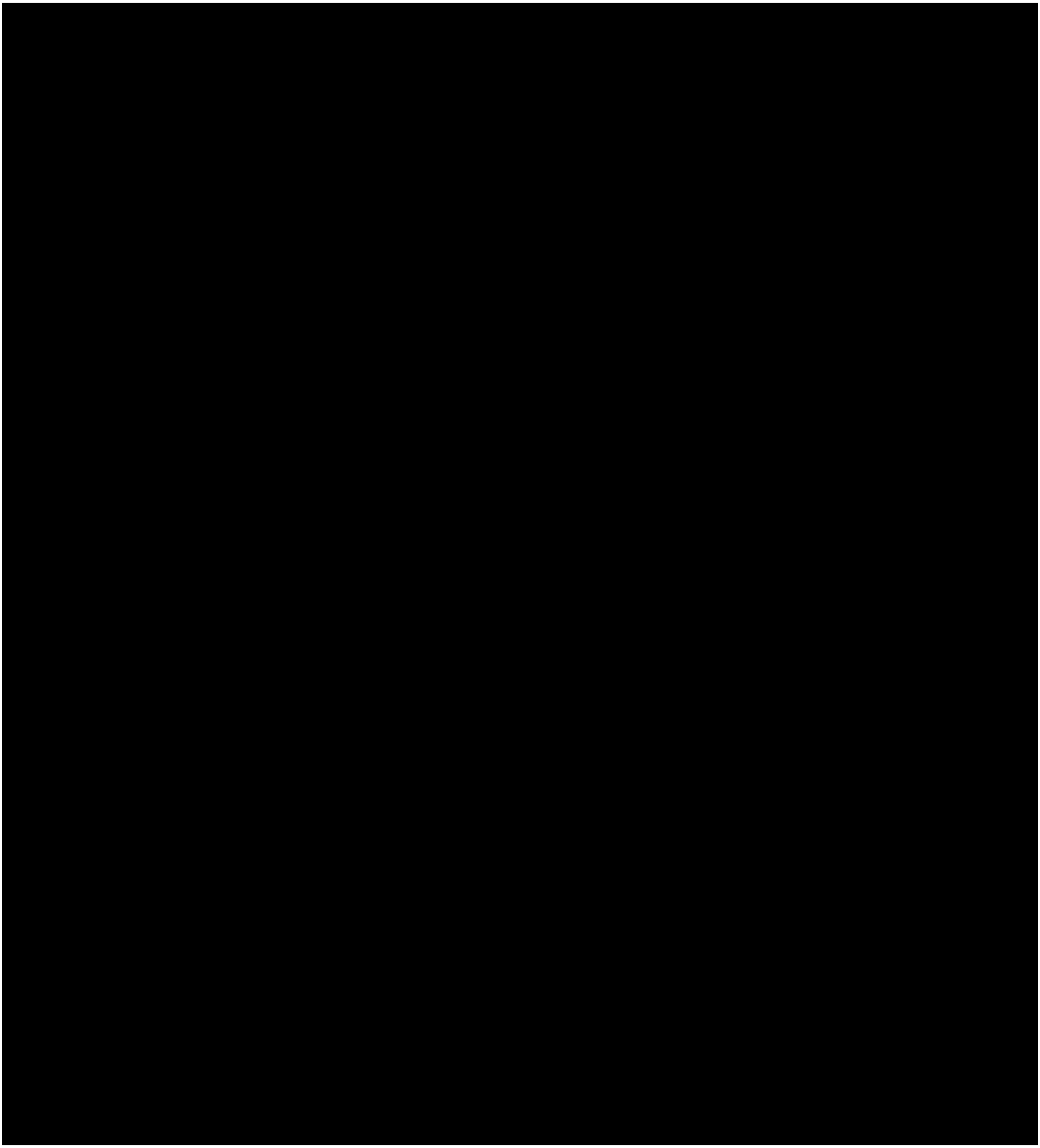
Figure 2-39: [redacted]

2.8.1.1 Technical specifications

Preliminary technical details for the [redacted] are shown in Table 2-21.

Table 2-21: Technical details for [redacted]

Characteristic	Technical details
[redacted]	



[redacted]

[redacted] Figure 2-40 [redacted]

Figure 2-40: [redacted]

[redacted]

3 Energy production estimate

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Appendix 3-1: Wind resource assessment

Appendix 3-2: Energy production estimate

Appendix 3-3: Wind energy consultant qualification

Solicitation requirements

Table 3-1 describes the Solicitation requirements of this chapter as put forth in the SGD, as well as the relevant sections addressing these requirements.

Table 3-1: Energy production estimate - references for Solicitation requirements

Key Solicitation requirements	Application reference
Assumptions that are the basis for the estimate of net yearly energy output for the Project, as reported in the Application Form (N.J.A.C. 14:8-6.5(a)(2)(v))	Sections 3.2 and 3.3 / Appendix 3-1
Account for, to the fullest extent possible, the coincidence between time of generation for the Project and peak electricity demand (N.J.A.C. 14:8-6.5(a)(2)(vi)) (PJM defines seasonal peak and off-peak hours for the wholesale energy market. PJM data is available at https://www.pjm.com/markets-and-operations/energy.aspx.)	Section 3.5
Provide an estimate, with support, of the amount of energy that will be generated over the term of the life of the turbines (N.J.A.C. 14:8-6.5(a)(2)(vi)) (Provide a single value (for each Project) representing the total amount of energy that is expected to be generated over the life of the turbines. Annual and hourly values will be provided in the Application Form.)	Section 3.4.1 / Appendix 3-2
Estimate, with support, the level of generation that the Project will be able to provide over the life of the equipment, assuming the Project runs for the equipment's full life (N.J.A.C. 14:8-6.5(a)(2)(vi)) (Provide a single value (for each Project) representing the level of generation that the Project is expected to be able to provide over the expected useful life of the Project equipment.)	Section 3.4.1 and 0 / Appendix 3-2
Provide the total amount of clean energy being generated over the term of the OREC program and the life of the turbines (N.J.A.C. 14:8-6.5(a)(6)(v)) (Provide a single value (for each Project) representing the total amount of energy that is expected to be generated over the 20-year OREC term, and a single value (for each Project) representing the total amount of energy that will be generated over the expected useful life of the turbines.)	Section 3.4.1 / Appendix 3-2
For each proposed Project, an explanation of how the Annual OREC Allowance, as submitted in the Applicant's Application Form, is derived from the wind resource and energy assessment (N.J.A.C. 14:8-6.5(a)(16))	Section 3.4.3 / Appendices 3-1 and 3-2
For each proposed Project, a planned maintenance outage schedule for the turbines and other equipment (N.J.A.C. 14:8-6.5(a)(16))	Section 3.6

(Must include in attachments) A wind resource and energy assessment from a wind energy consultant for the exact manufacturer, model and specifications of turbines selected for the Project (N.J.A.C. 14:8-6.5(a)(2)(v))	Sections 3.2 and 3.4 / Appendices 3-1 and 3-2
(Must include in attachments) Professional qualifications for the wind energy consultant to demonstrate sufficient expertise (N.J.A.C. 14:8-6.5(a)(2)(v))	Appendix 3-3

3.1 Summary

The Atlantic Shores team has developed a deep understanding of the available wind resource within [redacted] The energy production for the Project was evaluated by Atlantic Shores as well as by [redacted]

Section 3.2 details our robust and mature **assessment of the wind resource** in the Project Area necessary to calculate energy production estimates and support design optimization of the Project. To assess the wind resource, Atlantic Shores has collected wind data from multiple sources across 8 [redacted] and are released publicly on the MARACOOS platform for the benefit of the research community and governmental organizations. Our extensive measurement campaign provides a robust basis for subsequent analysis performed independently by both Atlantic Shores and [redacted] yielding a reliable estimation of the attractive wind resource in the [redacted]. The estimated average wind speed is [redacted] resulting in a net capacity factor of [redacted]

Section 3.3 explains the **methodology and assumptions for the energy production estimation** based on the wind resource assessment and the expected generation profile of the [redacted]. The [redacted] offers the best value of all technologies expected to be available for the planned COD dates. Our estimation also accounts for [redacted].

In Section 3.4, the resulting **energy production estimate** over the turbine life [redacted] and derived **OREC Allowance** are provided. Over the turbine life, a [redacted] is estimated. The energy production estimate over the [redacted] the [redacted], Atlantic Shores uses the [redacted] Due to our robust and extensive [redacted]

Section 3.5 outlines a detailed assessment of **the coincidence to peak demand**. The Project will consistently and effectively contribute to answering New Jersey electricity demand as up to [redacted] of generation occurs during the PJM on-peak hours.

Section 3.6 summarizes an efficient **maintenance** [redacted]. A sample schedule and detailed descriptions of planned maintenance activities for the turbines and converter stations are provided in Chapter 15 - Operations and maintenance plan.

Energy production estimate | Our commitment to New Jersey

- Mature and robust site assessment with onshore and offshore measurements across [redacted]
- Gross energy production of [redacted] estimated from actual site data, by a reputable third party
- High confidence in our estimates due to our [redacted]
- Use of best-in class wind turbine [redacted]
- Efficient [redacted]

[redacted]

3.2 Wind resource assessment

The complete wind resource assessment report detailing [redacted] is provided in Appendix 3-1. The following sections provide a summary of this report. [redacted]

3.2.1 Acquired and available data

Figure 3-2, Table 3-2 and Table 3-3 present the locations of Atlantic Shores' current and prospective measurement systems, period of measurement, and measurement heights. The energy resource of the Project was calculated based on the [redacted]

- [redacted], Figure 3-2) [redacted]

[redacted]

Figure 3-1: [redacted]

- [redacted]
- [redacted]

Figure 3-2: [redacted]

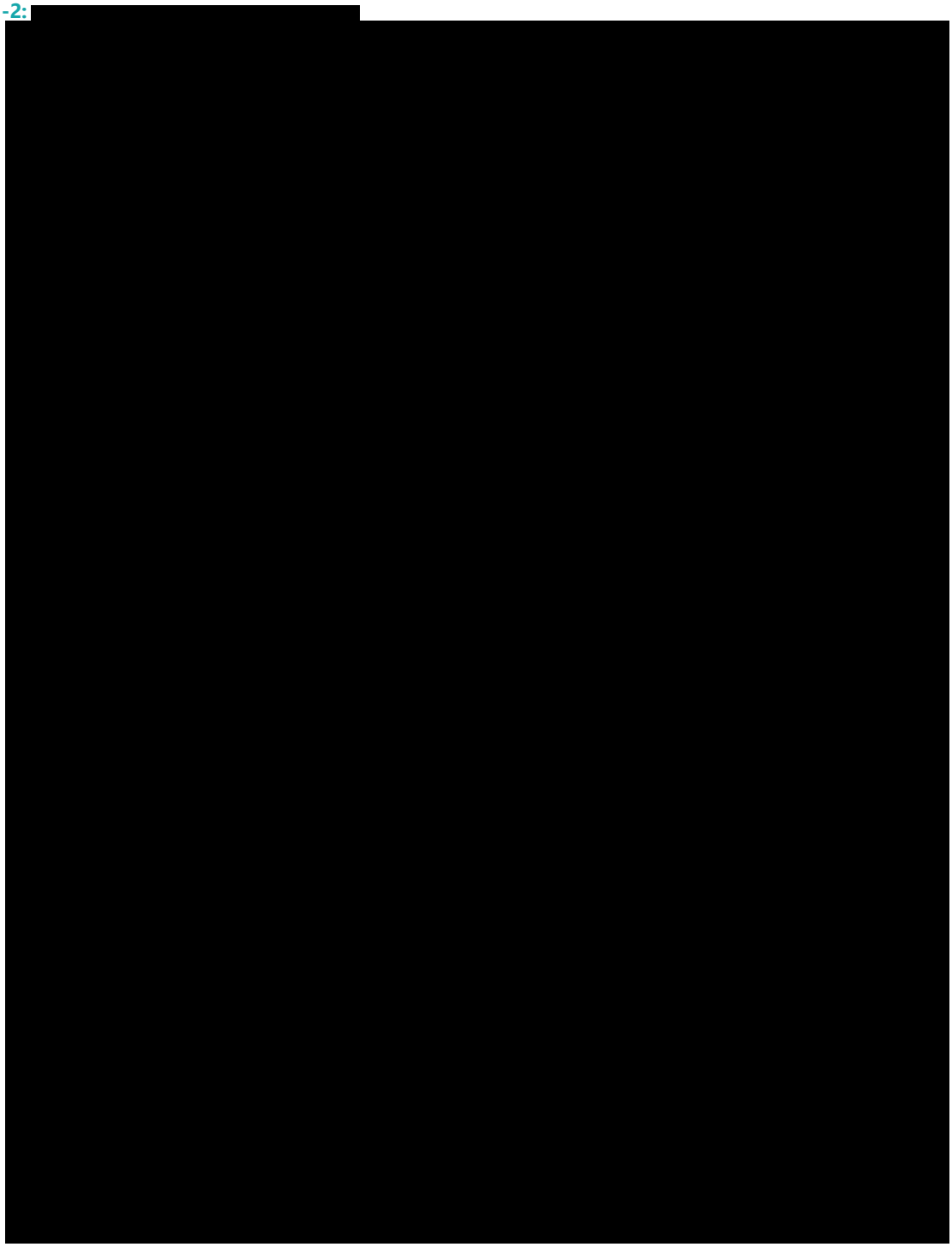


Table 3-2: Measurement systems deployments

[redacted]

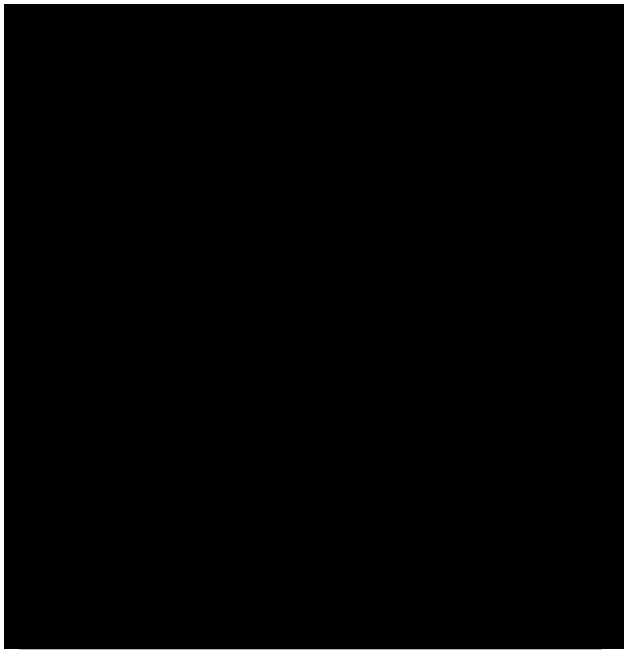
Table 3-3: Heights of measurements

[redacted]

3.2.2 Wind resource analysis

[redacted] 3.2.1 [redacted]

Figure 3-3: Project energy rose



[redacted]

3.3 Methodology and assumptions of energy estimates

[redacted] 3.3.1), [redacted] 3.3.2). [redacted] 3.3.3) [redacted]

3.3.1 Wind turbine generator specifications

[redacted] Table 3-4 su[redacted] - Project description

Table 3-4: WTG specifications

[redacted]

range of wind speeds from 3-30 m/s.

Figure 3-4: [redacted]

3.3.2 Project configuration

[redacted]

3.3.3 Losses

[redacted] Table 3-5.

Table 3-5: Overview of production losses

[redacted]

3.4 Energy production estimate and OREC Allowance

3.4.1 OREC period and turbines lifetime energy generation

[redacted] Table 3-6 [redacted] rgy output, and the total P50 net energy output over both the OREC period of 20 years and the turbine lifetime of 30 years.

Table 3-6: Gross energy output, losses, and net energy output

[redacted]

[redacted]

3.4.2 Equipment lifetime energy generation

[redacted] Table 3-6.

3.4.3 OREC Allowance

[redacted]

3.5 Coincidence to peak demand

To calculate the coincidence between time of generation for the Project and peak electricity demand, definition[31] of on-peak[32] and off-peak[33] is applied to [redacted]

As demonstrated in Table 3-7, [redacted] of project generation occurs during the PJM on-peak hours. Even when excluding weekends and six PJM holidays (New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, and Christmas Day), [redacted] of project generation occurs during PJM on-peak hours. This clearly demonstrates that the Project will consistently and significantly contribute to answering the New Jersey electricity demand.

Table 3-7: Summary of coincidence between time of generation and peak electricity demand

[redacted]

[31] https://www.pjm.com/Glossary

[32] On-peak is a period of time when consumers typically use more electricity -- normally on weekdays, when many businesses are operating. PJM typically considers weekdays from 7 a.m. to 11 p.m. on-peak, except for the following holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day.

[33] Off-peak is a period of time when consumers typically use less electricity: normally weekends, holidays or times of the day when many businesses are not operating. PJM typically considers New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day off-peak; as well as weekend hours and weekdays from 11 p.m. to 7 a.m.

3.6 Maintenance outage schedule

[redacted] Chapter 15- Operations and maintenance plan. [redacted] Chapter 15 - Operations and maintenance plan). It [redacted] 15.5.3).

4 Financial analysis

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Appendix 4-1: Cost input spreadsheet

Appendix 4-2: Financial statement for [redacted] & PBI

Solicitation requirements

Table 4-1 describes the Solicitation requirements of this chapter as put forth in the SGD, as well as the relevant sections addressing these requirements.

Table 4-1: Financial analysis - references for Solicitation requirements

Key Solicitation requirements	Application reference
A complete financial analysis of the Project (N.J.A.C. 14:8-6.5(a)(3)	Sections 4.2, 4.3 and 4.4 / Appendices 4-1 to 4-2

A comprehensive business plan with fully documented estimates of all associated and relied upon revenue and expense projections (N.J.A.C. 14:8-6.5(a)(3)(iv))	Sections 4.2 and 4.4 / Appendices 4-1 to 4-2
Tax credits, subsidies, or grants for which the Project will qualify (N.J.A.C. 14:8-6.5(a)(12)(viii)(2))	Section 4.2
Debt service costs and return on equity assumptions (N.J.A.C. 14:8-6.5(a)(12)(viii)(3))	Section 4.2
Taxes and depreciation assumptions (N.J.A.C. 14:8-6.5(a)(12)(viii)(4))	Section 4.2
The operation and maintenance ("O&M") plan for the Project must be integrated into the financial analysis of the Project (N.J.A.C. 14:8-6.5(a)(7)(vii)	Section 4.2
Coverage ratios for recourse and non-recourse debt tranches (N.J.A.C. 14:8-6.5(a)(16))	Section 4.2
A nominal levelized cost of energy ("LCOE") over the 20-year contract term using a 7% nominal discount rate and the Project's expected ("P50") output, as reported in the Application Form (N.J.A.C. 14:8-6.5(a)(16))	Sections 4.4
(Must include in attachments) An Excel file containing financial statements for the Project over the development, construction, operation, and decommissioning periods (A separate Excel file must be provided for each Project with the file name "Financial Statements – [Project Name]."), which must include: pro forma income statements (N.J.A.C. 14:8-6.5(a)(3)(i)); balance sheets (N.J.A.C. 14:8-6.5(a)(3)(ii)); cash flow projections for the proposed OREC period, including the internal rate of return, and a description and estimate of any State and/or Federal tax benefits that may be associated with the Project (N.J.A.C. 14:8-6.5(a)(3)(iii)); and all tax credits or other subsidies upon which the Applicant is relying, as described in Section 3.6 (N.J.A.C. 14:8-6.5(a)(5)(ii))	Section 4.4 / Appendix 4-2
(Must include in attachments) A full cost accounting of the Project, including total equipment, construction, O&M, and decommissioning costs (N.J.A.C. 14:8-6.5(a)(3)(v); N.J.A.C. 14:8-6.5(a)(12)(vii)(1))	Section 4.2 / Appendix 4-1
(Must include in attachments) The feasibility study used to determine the construction costs included in the cost accounting (N.J.A.C. 14:8-6.5(a)(3)(v))	Section 4.2 / Appendix 4-1
(Must include in attachments) The Project financial statements must include the Project's annual earnings before interest, taxes, depreciation, and amortization ("EBITDA") over the 20-year contract term (N.J.A.C. 14:8-6.5(a)(16))	Section 4.4 / Appendix 4-2
(Must include in attachments) The pro forma income statements should provide reasonable insight into the financing assumptions used to support Applicant's required return on investment ("ROI") (N.J.A.C. 14:8-6.5(a)(16))	Sections 4.4 / Appendix 4-2
(Must include in attachments) The full cost accounting of the Project must specifically identify the material and installation costs for the generator lead line between the offshore substation(s) and the LCS, and for the Prebuild Infrastructure (N.J.A.C. 14:8-6.5(a)(16))	Section 4.2 / Appendix 4-1

4.1 Summary

A robust financial analysis of the Project and the PBI is essential to ensure realistic and deliverable pricing that the NJ BPU can trust. Atlantic Shores, through extensive work performed since its inception in 2018, and leveraging our experience on Project 1, has built a strong foundation for its financial analyses, [redacted]

Atlantic Shores is proposing [redacted]

Section 4.2 elaborates on our detailed **assumptions and** the corresponding robust **business plans**. [redacted]

In Section 4.3, we highlight our approach to **cost control** and optimization, **risk identification and mitigation**, and **accounting and verification**, [redacted]

Section 4.4 includes our detailed **financial analysis and statements**. [redacted]

Financial analysis | Our commitment to New Jersey

- Highly mature and robust assumptions building on [redacted]nsive design studies, geophysical, geotechnical, and environmental surveys, and stakeholder engagement
- De-risked business case due to our long-term engagement and strong connection with key suppliers since [redacted] expertise on tax equity and market inputs
- Established processes for cost control, risk identification and mitigation, leveraging our 4+ years of experience as a JV
- Most credible and robust path towards effective delivery on our OREC price due to our deep understanding of requirements needed for reliable project delivery

[redacted]

4.2 Assumptions and business plans

This Application as a whole provides the comprehensive business plans for our Project and the PBI, with all inputs from project design (Chapter 2), energy estimates (Chapter 3), financing plan (Chapter 5), financial incentives assumptions (Chapter 6), revenue plan (Chapter 7), local content and workforce plans (Chapter 8), project schedule (Chapter 12), interconnection plan (Chapter 13), O&M and decommissioning plan (Chapters 15 and 16) contributing to cost and revenue estimates. The assumptions summarized in this chapter (see Table 4-3 and Table 4-4) shape the business plans and financial statements for the Project and the PBI, and thus ultimately define the proposed OREC prices. These assumptions base off extensive work performed over the [redacted] to mature our Project, including [redacted] This reliance on robust in-situ data has enabled us to ensure that our designs and pricing are firmly grounded in reality and achievable.

As further detailed in Chapter 8, Atlantic Shores is proposing to [redacted]

[redacted]

[redacted]

Table 4-2 below summarizes [redacted]

Table 4-2: Summary of [redacted]

[redacted]

[redacted]

Quantitative assumptions for the financial statements are detailed in the "Cost Input" spreadsheets attached for [redacted]. This Application and Appendix 4-1 together effectively cover the required feasibility study used to determine the construction costs contained in the cost accounting as well as the full cost accounting of the Project and the PBI. The full cost accounting covers total equipment, construction, O&M, and decommissioning costs.

Table 4-3: Summary of technical and cost assumptions of the financial analysis

[redacted]

[redacted]	[redacted]	[redacted] 2.2 - [redacted]
	[redacted]	[redacted] 2.3 - [redacted]
	[redacted]	[redacted] 2.3 - [redacted]

ATLANTIC SHORES offshore wind

- Operations and maintenance plan
- Financial analysis

[34] Assumptions in Appendix 4-1 "Cost input" spreadsheet

[35]

[redacted]	[redacted]	[redacted] 3.4 Energy production estimate and OREC Allowance
[redacted]	[redacted]	[redacted] Project timeline

Table 4-4: Summary of commercial and financial assumptions of the financial analysis

[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted] 7 Project revenue plan and strategy
[redacted]	[redacted]	[redacted] r 6 Documentation of financial incentives
[redacted]	[redacted]	[redacted] 4 Financial analysis
[redacted]	[redacted]	[redacted] 4 Financial analysis
[redacted]	[redacted]	[redacted] 4 Financial analysis
[redacted]	[redacted]	[redacted] 4 Financial analysis
[redacted]	[redacted]	[redacted] 5 Project financing plan
[redacted]	[redacted]	[redacted] 16 Decommissioning plan
[redacted]	[redacted]	[redacted] 13 Interconnection plan
[redacted]	[redacted]	[redacted] 4 Financial analysis

4.3 Cost and risk management

As demonstrated in the above section, our Project and PBI proposal and OREC prices are based on multiple inputs issued from multiple areas of expertise, requiring efficient coordination for an optimized offer. Additionally, once awarded, Atlantic Shores is committed to executing the Project in compliance with our commitments to the State, our stakeholders, and our Shareholders, which requires a strong project controls discipline, including cost, risk / opportunities and mitigation, and schedule management. The following sections summarize Atlantic Shores cost estimation, cost control, risk and opportunity management processes as well as its accounting function.

4.3.1 Cost estimation

[redacted]

[redacted]

[redacted]

4.3.2 Risk, opportunity and mitigation management

[redacted]

[redacted]

4.3.3 Cost controls, accounting and verification

[redacted]

[redacted]

4.4 Financial analysis and financial statements

Table 4-5 [redacted],

[redacted]

Table 4-5: Financial statements of our proposed Project and the Prebuild Infrastructure

[redacted]

[redacted]

5 Project financing plan

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Appendix 5-2: [redacted] Letter of Support
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Appendix 5-4: [redacted] Letter of Support
Appendix 5-5: [redacted] Letter of Support
Appendix 5-6: [redacted] Letter of Support
Appendix 5-7: [redacted] Letter of Support

Appendix 5-8: [redacted] Letter of Support

Appendix 5-9: [redacted] Letter of Support

Appendix 5-10: Redacted JV Operating Agreement

Solicitation requirements

Table 5-1 describes the Solicitation requirements of this chapter as put forth in the SGD, as well as the relevant sections addressing these requirements.

Table 5-1: Project financing plan - references for Solicitation requirements

Key Solicitation requirements	Application reference
The proposed method of financing the Project (N.J.A.C 14:8-6.5(a)(4))	Section 5.2
A detailed financial plan (N.J.A.C 14:8-6.5(a)(4)(iv))	Section 5.3
Identification of equity investors, fixed income investors, long and short-term debt, and any other sources of capital (N.J.A.C. 14:8-6.5(a)(4)(i), N.J.A.C. 14:8-6.5(a)(4)(iv))	Section 5.3
A demonstrated ability to finance construction through market sources, which may include tax exempt bond financing through the EDA (N.J.A.C. 14:8-6.5(a)(4)(iii))	Section 5.3 / Appendix 5-1
Names, functions, and fees of all financial and legal advisors (N.J.A.C. 14:8-6.5(a)(4)(iv))	Section 5.3.6
Specify if and under what conditions equity or other ownership interests in the Project can be transferred to other parties and considerations involved (N.J.A.C. 14:8-6.5(a)(4)(iv))	Section 5.4 / Appendix 5-10
Potential debt lenders (N.J.A.C. 14:8-6.5(a)(16))	Section 5.3.3
Expected amount of tax equity financing (N.J.A.C. 14:8-6.5(a)(16))	Section 5.3.5
(Must include in attachments) Evidence of the ability to finance the Project, such as: a letter of intent to offer credit from credible financiers, a letter of commitment from equity investors, and/or a guarantee from an investment grade party (N.J.A.C. 14:8-6.5(a)(4)(ii))	Appendix 5-2 to 5-9

5.1 Summary

A reliable, bankable project financing plan is fundamental to the successful development of large-scale renewable projects. Atlantic Shores developed a robust financial plan that ensures delivery of our Project, while providing sufficient flexibility to adapt to changing market conditions. This chapter is structured into two sections.

In Section 5.2, we elaborate on our proposed [redacted]

Section 5.3 outlines our **detailed financial plan** based on [redacted]

Finally, Section 5.4 specifies the **conditions under which** [redacted]

Project financing plan | Our commitment to New Jersey

- Reliable, robust and mature project financing plan based on detailed assessment by Atlantic Shores, our Shareholders, and legal and financial advisors

[redacted]

- [redacted] Documentation of financial incentives) [redacted]

[redacted]

5.2 Project financing method

[redacted] 6 [redacted] Documentation of financial incentives). [redacted] Tax [redacted]

5.3 Detailed financial plan

5.3.1 Capital cost requirements

Capital requirements for the Project and PBI are detailed in Table 5-2.

Table 5-2: Summary of capital costs for [redacted]

[redacted]

[redacted]

[44] EDF CAP30 Press Pack

[45] Shell's ambition to be a net-zero emissions energy business

[redacted] 5.3.2.

[redacted]

5.3.2 Financing approach

5.3.2.1 Funding mechanism and investors

Figure 5-1 [redacted]

[redacted]

[redacted]

5.3.2.2 Final investment decision requirements

[redacted]

5.3.2.3 Expected source of capital

Table 5-3 [redacted]

Table 5-3: Indicative anticipated financing structure

[redacted]

[redacted] **Potential** [redacted]

[redacted]

5.3.4 Shareholder financial capability for the financing approach

[redacted]

5.3.4.1 Shell New Energies' financial capability

[redacted]

Shell New Energies' financial strength is demonstrated through its Financial Statements attached as Appendix 1-5 Additionally, Shell's financial strength is demonstrated on their Shell 2022 Annual Report and accounts webpage, via its 2022 Financial Statements and 2022 Sustainability Report.

[46] Winner of the Project Finance Institute's European Renewables Deal of the year: 2018 PFI Awards

5.3.4.2 EDF Renewable's financial capability

[redacted]

EDF Renewables' financial strength is demonstrated through its Financial Statements attached as Appendix 1-6. Additionally, EDF's financial strength is demonstrated on their EDF 2022 Investors & Shareholders' webpage.

5.3.5 Details on [redacted]

[redacted]

[redacted] Documentation of financial incentives [redacted]

[redacted]

5.3.6 Financial and legal advisors

[redacted]

[redacted]

Table 5-4 [redacted]

Table 5-4: Financial and legal advisors

[redacted]

5.4 Equity and ownership transfer

[redacted]

6 Documentation of financial incentives

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Appendix 6-1: ITC eligibility of Prebuild Infrastructure

Solicitation requirements

Table 6-1 describes the Solicitation requirements of this chapter as put forth in the SGD, as well as the relevant sections addressing these requirements.

Table 6-1: Documentation of financial incentives - references for Solicitation requirements

Key Solicitation requirements	Application reference
Documentation to demonstrate that the Applicant has applied for all current eligible State and Federal grants, rebates, tax credits, and programs available to offset the cost of the Project or provide tax advantages (N.J.A.C. 14:8-6.5(a)(5)) (State grants, rebates, tax credits, and programs referenced here are not limited to New Jersey, and may include those from other states)	Sections 6.2 and 6.3
Documentation of all Federal and State tax incentives for which the Applicant is applying or has applied or otherwise are applicable, even if such incentives have not been sought or approved (N.J.A.C. 14:8-6.5(a)(5)(i)) (This list shall be consistent with the list of tax credits, subsidies or grants the Project will qualify for that is provided in the Financial Analysis (see Section 3.4))	Sections 6.2 and 6.3
The assumed Federal Investment Tax Credit and/or Production Tax Credit, Federal and State subsidies, grants, or other incentives that the Applicant expects to be eligible for, including but not limited to those available under the federal Inflation Reduction Act (L. 117-169) and	Section 6.4

Infrastructure Investment and Jobs Act (L. 117-58), and a proposed plan to secure such tax credits, subsidies, grants, or other incentives (N.J.A.C. 14:8-6.5(a)(16))	
Identification of additional Project costs associated with qualifying for tax credits (N.J.A.C. 14:8-6.5(a)(16))	Sections 6.1 and 6.2

6.1 Summary

As part of our extensive efforts to minimize OREC prices and thus ratepayer impacts, Atlantic Shores is committed to qualify and secure as many tax incentives, grants, rebates, and other programs as possible.

[redacted]

6.2 [redacted]

6.3 [redacted] 5 Project financing plan), [redacted]

6.4 [redacted]

[redacted]

[redacted]

6.2 Tax incentives, grants, and other programs

[redacted]

[redacted] 6.3 [redacted] 6.4 [redacted]

[redacted]

ATLANTIC SHORES offshore wind

[redacted]

[redacted] 5 Project financing plan [redacted]

[redacted]

[redacted]

[redacted] Interconnection plan, [redacted]

[redacted]

[redacted] 13-13) [redacted]

[redacted]

[redacted]

[redacted]

Table 6-2: Potential opportunities for [redacted]

[redacted]

7 Project revenue plan and strategy

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Appendix 7-1: Letters of support and affiliate company proposals for Energy Management, Trading, and Other Services

Solicitation requirements

Table 7-1 describes the Solicitation requirements of this chapter as put forth in the SGD, as well as the relevant sections addressing these requirements.

Table 7-1: Project revenue plan and strategy - references for Solicitation requirements

Key Solicitation requirements	Application reference
A Project revenue plan which forecasts revenues as well as identifies the strategy for offering the electricity provided in the electric market and for generating all expected revenues (N.J.A.C. 14:8-6.5(a)(6)(i)) (Includes all expected revenues in the energy, capacity, and, if applicable, ancillary services markets, as well as any bilateral sales)	Sections 7.3 and 7.4
Provide an estimate, with documented support, of the amount of electrical capacity the Project will make available that is calculated consistent with PJM rules and procedures (N.J.A.C. 14:8-6.5(a)(2)(vi))	Section 7.4
The Project revenue plan must link the anticipated revenues to the Project time schedule (see Section 3.12) and costs for the entire Project's lifecycle term extending to the expected life of the turbines and eventual decommissioning (N.J.A.C. 14:8-6.5(a)(6)(ii))	Sections 7.3 and 7.4
Specify financial expectations and marketing strategies for securing revenue from expected capacity-based payments in PJM markets, energy-based payments in PJM markets, Renewable Energy Certificate ("REC") revenue from Renewable Portfolio Standard ("RPS") or voluntary markets, and emission credits from various air emission reduction cap and trade programs (N.J.A.C. 14:8-6.5(a)(6)(iii))	Section 7.4
The quantity of Unforced Capacity ("UCAP") that the Applicant expects the Project to offer into the PJM Base Residual Auction ("BRA"), and the basis for this quantity of UCAP (N.J.A.C. 14:8-6.5(a)(16))	Section 7.4.2
Describe the approach to calculating a capacity price forecast, and, if different than the proxy used by Board Staff for evaluation, provide an explanation of why the Applicant's approach is preferred (For evaluation purposes, Board Staff will base capacity proxy prices on the average of the previous three BRA resource clearing prices of relevance in New Jersey – see RFP) (N.J.A.C. 14:8-6.5(a)(16))	Section 7.4
Any adjustments contemplated to the operating revenues related to UCAP sales under PJM's anticipated capacity accreditation principles (e.g., Effective Load Carrying Capability) ((N.J.A.C. 14:8-6.5(a)(16)))	Section 7.4
How capacity market risk, including capacity performance penalty or incentive payments will be addressed (N.J.A.C. 14:8-6.5(a)(16))	Section 7.4
Strategies for maximizing Project revenues that do not depend on routine settlement in PJM's day-ahead and/or real-time markets, and how, if at all, the Applicant intends to address any risk associated with such strategies (N.J.A.C. 14:8-6.5(a)(16))	Section 7.4

A description of how the applicant intends to manage hedging mechanisms and revenue settlement operations, and how the applicant intends to allocate risk associated with such mechanisms (N.J.A.C. 14:8-6.5(a)(16))	Section 7.4
A description of the Applicant's contingency plan to address how capacity revenue may be realized over all or a portion of the OREC term if the Project is not eligible to participate in PJM's annual BRA (N.J.A.C. 14:8-6.5(a)(16))	Section 7.4.2

7.1 Summary

A solid and reliable project revenue plan, combined with a sound, future-proof marketing strategy, are key to minimizing the impact of offshore wind projects on ratepayers. We as Atlantic Shores take the task of maximizing ratepayer recovery very seriously by looking at and leveraging all possible revenue streams, as outlined in this chapter.

Section 7.2 outlines **general principles** regarding the revenue plan and strategy, as well as **current regulatory considerations**, [redacted]

Section 7.3 details Atlantic Shores' **project revenue plans** with corresponding revenue sources under the current regulatory framework. [redacted]

Section 7.4 demonstrates Atlantic Shores' **financial expectations and marketing strategies** to secure the revenues from the presented revenue forecasts for each identified revenue source. [redacted]

Project revenue plan and strategy | Our commitment to New Jersey

[redacted]

[redacted]

7.2 General principles and regulatory considerations

7.2.1 General principles and considerations

Atlantic Shores recognizes and embraces its obligation to earn and return to ratepayers all non-OREC proceeds over the 20-year OREC term. During that period, the Project will seek to maximize the proceeds available to the ratepayers across market-wide or bilateral revenue sources. [redacted]

[redacted]

[redacted] 7.4. [redacted]

[redacted] 7.3 [redacted]

[redacted]

7.2.2 Regulatory considerations

[redacted]

[redacted]

7.3 Project revenue plan

As demonstrated in Table 7-2 and further detailed in Sections 7.3.1 - 7.3.4., the base case revenue plan monetizes the following items during each time period:

Table 7-2: Base case revenue plan

✓ indicates that revenues are included, and ✗ indicates that corresponding revenues are not included in the base case revenue plan

[redacted]

[50] Defined, per NJ BPU guidance, as when 90% of turbines in a phase are commissioned and generating power

[redacted]

7.3.1 Energy revenues

[redacted]

7.3.2 Capacity revenues

[redacted]

7.3.3 RECs revenues

[redacted]

[redacted]

7.3.4 Revenues of other products

[redacted]

7.4 Financial expectations and marketing strategies

[redacted]

7.4.1 Energy

7.4.1.1 Base Case

[redacted]

[redacted]

7.4.1.2 Alternative energy offtake structures not included in base case

[redacted]

[redacted]

7.4.2 Capacity

7.4.2.1 Base Case

[redacted]

[redacted]

Figure 7-1: [redacted]

Table 7-3: [redacted]

Figure 7-2: [redacted]

7.4.2.2 Capacity market risk assessment

7.4.2.3 Contingency plans

[redacted]

7.4.3 RECs

7.4.3.1 Base Case

[redacted]

7.4.3.2 Alternative RECs not included in base case

[redacted]

7.4.4 Other products

[redacted]

7.4.4.1 Ancillary services

[redacted]

7.4.4.2 New products

[redacted]

7.4.5 Revenue forecasts

[redacted]

Figure 7-3: Revenue forecast for Project 2

Table 7-4: Summary of the revenue forecast in

[57] Defined, per NJ BPU guidance, as when 90% of turbines in a phase are commissioned and generating power

8 Economic development plan

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Appendix 8-6: [redacted]
Appendix 8-7: [redacted]
Appendix 8-8: [redacted]
Appendix 8-9: [redacted]

Solicitation requirements

Table 8-1 describes the Solicitation requirements of this chapter as put forth in the SGD, as well as the relevant sections addressing these requirements.

Table 8-1: References for solicitation requirements

Key solicitation requirements	Application reference
Detailed job creation information, including location, type of activity or occupation, and wages or salaries for employment activities to be created by the Project and assumed employment impacts within New Jersey, with job totals expressed as full-time equivalent positions assuming 1,820 hours per year (N.J.A.C. 14:8-6.5(a)(11)(vi); N.J.A.C. 14:8-6.5(a)(11)(xiii)) (Applicants are encouraged to be as specific as possible about the specific job types, including the occupational categories/applicable trades and average annual salaries, associated with each distinct Project. Information provided in this section of the Application Narrative must be consistent with the data provided in the Application Form.)	Section 8.2.3
Method for confirming employment impacts (N.J.A.C. 14:8-6.5(a)(11)(vi))	Section 8.2.5
Other benefits, such as increased in-State activity from construction, O&M, and equipment purchases (N.J.A.C. 14:8-6.5(a)(11)(iv))	Section 8.2.4
Proposed consequences if the claimed in-State employment and spending benefits do not materialize (N.J.A.C. 14:8-6.5(a)(11)(vii))	Section 8.3
A detailed input-output analysis of the impact of the Project on income, employment, wages, indirect business taxes and output (Output refers to the sales of sectors or industries that would be supplying the Project with materials (such as turbines, steel and cement for support structures, wire for transmission cables), and services (such as construction and installation services, as well as engineering, legal, finance, and other professional services).) in the State with particular emphasis on in-State manufacturing employment (N.J.A.C. 14:8-6.5(a)(11)(i); N.J.A.C. 14:8-6.5(a)(11)(v)) (Applicants may use any regional economic input-output model	Sections 8.2 / Chapter 17 / Appendices 17-1 to 17-3

that accurately measures New Jersey economic benefits. Suggested models include, but are not limited to: Rutgers R/ECON model, Regional Economic Models, Inc. REMI model, IMPLAN's IMPLAN model, and the US Bureau of Economic Analysis RIMS II model.)	
Planned in-State spending to support planning and development, component manufacturing and equipment purchases, construction and installation, and O&M (N.J.A.C. 14:8-6.5(a)(16))	Section 8.2.2
Method for calculating and tracking in-State spending (N.J.A.C. 14:8-6.5(a)(16))	Section 8.2.5
Identification of the supply chain components and installation labor that are expected to be provided by in-State businesses and/or workers (N.J.A.C. 14:8-6.5(a)(16))	Section 8.2.1.2
A description of the Applicant's plan for incremental investments in infrastructure, supply chain, workforce development and other offshore wind-related programs, and the associated economic benefits for the State, with a focus on: Workforce development, investments in innovation, investments in existing infrastructure, use of the marshalling and/or manufacturing facilities at the New Jersey Wind Port (See additional information regarding the New Jersey Wind Port, https://nj.gov/windport/index.shtml.), and development of alternative ports in New Jersey for manufacturing, and O&M activities (N.J.A.C. 14:8-6.5(a)(16))	Sections 8.2 and 8.4
A description of how the economic development plans, including supply chain and other arrangements, will promote effective competition and reduce risk in the offshore wind marketplace (N.J.A.C. 14:8-6.5(a)(16))	Section 8.5
For each proposed manufacturing or port facility, provide the status of any arrangement or commitment to utilize the site and describe plans, or provide plans if they have already been prepared, to develop the site, including construction or rehabilitation of shoreline protection structures, wharf structures and other infrastructure improvements (N.J.A.C. 14:8-6.5(a)(16))	Section 8.4
For each proposed manufacturing or port facility, explain the status of any arrangement or commitment to utilize the site that reflects reasonable expectations on the part of the Applicant to receive financial support from the State of New Jersey and/or the Federal government, including under the Inflation Reduction Act or the New Jersey Offshore Wind Tax Credit (N.J.A.C. 14:8-6.5(a)(16))	Section 8.4
(Local Supplier Engagement Plan) A description of the Applicant's plan to engage with and provide opportunities in a timely manner to local suppliers and manufacturers, with an emphasis on New Jersey Small, Minority, Woman, or Veteran-owned Business Enterprises ("SMWVBEs"), including strategies to prepare New Jersey firms for contracting and subcontracting opportunities connected to new supply chain facilities (N.J.A.C. 14:8-6.5(a)(16))	Section 8.4.1
(Local Supplier Engagement Plan) A description of the Applicant's plan to advertise business opportunities to New Jersey firms including, at a minimum, notices for all bids for supplier contracts over $1,000,000 by the Applicant and by the Applicant's direct suppliers to New Jersey companies (at minimum those listed on the New Jersey Offshore Wind Supply Chain Registry) (See https://a812898.fmphost.com/fmi/webd/OSWSupplyChain.fmp12?script=FindServices.) (N.J.A.C. 14:8-6.5(a)(16))	Section 8.4.1
(Local Supplier Engagement Plan) A description of the Applicant's plan to advertise business opportunities to New Jersey SMWVBEs including, at a minimum, notices for all bids for supplier contracts for goods over $250,000 and services over $100,000 by the Applicant and by the Applicant's direct suppliers to New Jersey companies (at minimum those listed on the New Jersey Selective Assistance Vendor Information, or "NJ SAVI") (See https://www20.state.nj.us/TYTR_SAVI/vendorSearch.jsp.) (N.J.A.C. 14:8-6.5(a)(16))	Section 8.4.1

(Local Supplier Engagement Plan) An acknowledgement that the Applicant and the Applicant's direct suppliers will make best efforts to consult both the New Jersey Offshore Wind Supply Chain Registry and NJ SAVI for all contracts, regardless of the value of these contracts (N.J.A.C. 14:8-6.5(a)(16))	Section 8.4.1
(Local Supplier Engagement Plan) Specific targets for contracts awarded to New Jersey firms as a percentage of total development, construction, and operations spending, either on an overall basis or differentiated by Project phase, and whether the Applicant will commit to making those targets public (N.J.A.C. 14:8-6.5(a)(16))	Section 8.4.1
(Local Supplier Engagement Plan) Specific targets for contracts awarded to New Jersey SMWVBEs as a percentage of total development, construction, and operations spending, either on an overall basis or differentiated by Project phase, and whether the Applicant will commit to making those targets public (N.J.A.C. 14:8-6.5(a)(16))	Section 8.4.1
(Local Supplier Engagement Plan) A description of proposed plans to collaborate with State agencies and other public, non-profit, and private partners to support engagement with New Jersey businesses, including, but not limited to, organizing meet-the-buyer events, providing technical assistance, etc. (N.J.A.C. 14:8-6.5(a)(16))	Section 8.4.1
(Local Supplier Engagement Plan) A description of the Applicant's plan to use domestically-sourced materials, including, but not limited to, iron and steel, in the construction of the Project (N.J.A.C. 14:8-6.5(a)(16))	Section 8.4.1
(Workforce Development Plan) A description of the Applicant's approach to workforce development and the Applicant's plan to provide workforce training programs and employment opportunities for New Jersey residents through engagement with the Wind Institute and its associated programs and any other relevant State programs (Applicants are encouraged to consult the following reports as part of the development of their workforce development plan: NJEDA's New Jersey Offshore Wind Workforce Assessment through 2035 (https://www.njeda.com/wp-content/uploads/2022/09/2022-NewJersey-OSW-Workforce-Assessment-Report.pdf) and the NJ Council on the Green Economy's Green Jobs for a Sustainable Future (https://www.nj.gov/governor/climateaction/council/greenreport/).) (N.J.A.C. 14:8-6.5(a)(16))	Section 8.4.4
(Workforce Development Plan) Identification of potential job opportunities for residents of OBCs and any associated diversity and inclusion initiatives (N.J.A.C. 14:8-6.5(a)(16))	Section 8.4.4
(Workforce Development Plan) Specific targets for hiring New Jersey residents and residents of OBCs, either on an overall basis or differentiated by Project phase, and whether the Applicant will commit to making those targets public (N.J.A.C. 14:8-6.5(a)(16))	Sections 8.2.3, 8.4.4 and 8.4.6
(Workforce Development Plan) Applicants are encouraged, but not required, to also set specific targets for hiring members of other specialized populations, such as incumbent workers from the nonrenewable energy sector, veterans, or justice-involved individuals, either on an overall basis or differentiated by Project phase (N.J.A.C. 14:8-6.5(a)(16))	Section 8.4.4
(Workforce Development Plan) A description of the Applicant's plan to use unionized labor, including identification of specific unions, if available, for construction and for O&M, including considerations related to prevailing wages, project labor agreements, labor harmony agreements, union neutrality agreements, provisions for workplace disputes, jurisdictional disputes and other best practices to prevent Project disruption, and participation in community benefit agreements that include commitments to local hiring and skills training for local residents, including those in OBCs (N.J.A.C. 14:8-6.5(a)(16))	Sections 8.2.3 and 8.4.4

(Workforce Development Plan) Identification of occupations with the highest, moderate, and limited expected opportunities for New Jersey residents, including rationale for determination and core skills required, and strategies to increase opportunities for occupations identified as having limited opportunities for New Jersey residents (N.J.A.C. 14:8-6.5(a)(16))	Section 8.4.4
(Workforce Development Plan) A description of the Applicant's approach to engage with stakeholders in a timely manner to prepare a well-trained and available local workforce through the development of new and/or utilization of existing training, education, and/or outreach programs and ensure that stakeholders are aware of industry-specific certifications and expectations in order to enable their effective participation in such programs (N.J.A.C. 14:8-6.5(a)(16))	Section 8.4.4
A description of the Applicant's approach to fostering innovation in the offshore wind industry, particularly where there are open market opportunities for existing and start-up companies in New Jersey, opportunities to utilize or support existing initiatives, opportunities to attract additional investment to build an offshore wind innovation hub in the State, any plans by the Applicant to enhance the use of offshore wind electricity through energy storage, green hydrogen technologies, carbon capture and others, and plans to coordinate and engage with the Wind Institute as part of these efforts and opportunities (N.J.A.C. 14:8-6.5(a)(16))	Sections 8.2 and 8.4.4
(Must include in attachments) Documentation including, but not limited to, contracts or other binding commitments to substantiate any claims that manufacturing services related to the Project will be sourced from a New Jersey location (N.J.A.C. 14:8-6.5(a)(1)(vii)) (Applicants can also submit non-binding commitments, memoranda of understanding, or similar documents. If non-binding documents are submitted, the Applicant should be explicit about the nature of the agreement, and provide a timetable for finalization.)	Section 8.2 / Appendices 8-6 to 8-7

8.1 Summary

As the US offshore wind industry rapidly grows, the opportunity for economic development is in many ways driven by the priorities of the states. With multiple states seeking to localize major components manufacturing in the near-term and Tier 1 suppliers working across multiple markets, the states moving most quickly to secure offshore wind projects with ambitious local content development and workforce development plans will ensure long-lasting benefits to their economy and ratepayers. New Jersey, with its ambitious 11 GW by 2040 offshore wind goal, and large investments in the NJWP and the WIND Institute, is on the right track to seize a large portion of the benefits of US offshore wind market. But to make these goals into a reality, New Jersey needs trustworthy and reliable partners. [redacted] Our economic development plan will describe our long-term ambition for New Jersey, our understanding of the local workforce, our experience with the global supply chain, and the unmatched market focus for New Jersey.

Section 8.2 describes in detail our **local content for the State** with direct investments [redacted] (see Table 8-11). [redacted]

Section 8.3 details our **guaranteed local content and job commitments**, as well as our proposed **compensation mechanism in the event of shortfalls** in economic benefits or jobs, both during the development and construction period, and the operations period of [redacted]

[redacted]

[redacted]

Section 8.4 presents our detailed supply chain development plan and associated commitments to New Jersey. This mature plan [redacted]

[redacted]

Finally, Section 8.5 describes Atlantic Shores' approach to **promoting effective competition in the offshore wind industry**.

[redacted]

Table 8-2: Summary of guaranteed local content commitments[61]

Commitment / Phase	[redacted]	[redacted]	[redacted]
In-State spend for development and construction (incl. Fabrication)	[redacted]	[redacted]	[redacted]
Jobs associated with Development and Construction (FTEs[63])	[redacted]	[redacted]	[redacted]
Annual in-State spend for Operations	[redacted]	[redacted]	[redacted]
Annual Operations jobs (FTEs)	[redacted]	[redacted]	[redacted]

Economic development plan | Our commitment to New Jersey

[redacted]

[redacted]

[redacted]

8.2 Our local content promise to New Jersey

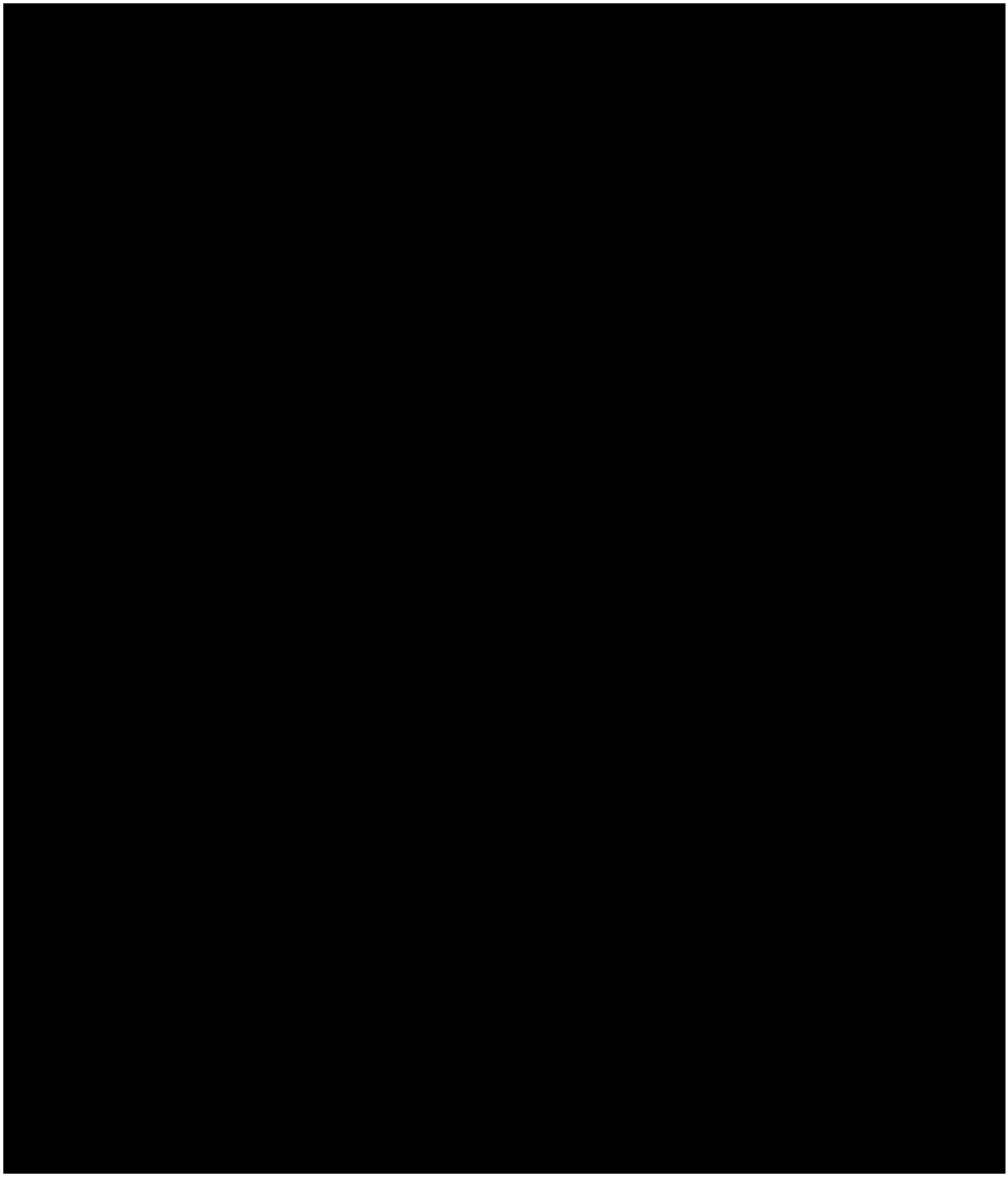
8.2.1 Local activities of Atlantic Shores in New Jersey

Since our Project 1 OREC award in the State's 2nd Solicitation, Atlantic Shores has already spent [redacted] to date in New Jersey and has been a leader in the region by establishing local supply chains and seeking innovative ways to expand the labor force needed for offshore wind development. Atlantic Shores will grow this investment as we continue to provide significant economic benefits to New Jersey in the form of in-State spending, jobs, and general economic activity.

[redacted]

As Atlantic Shores continues its efforts, we hope to find ways to spread positive impact across all counties in New Jersey. A map showing the counties where current or expected investment takes places is shown in Figure 8-1. The following sections provide an overview of our local content commitments to the State. The details of these engagements are elaborated in Section 8.4.

Figure 8-1: Map of Atlantic Shores current and planned investment in New Jersey.

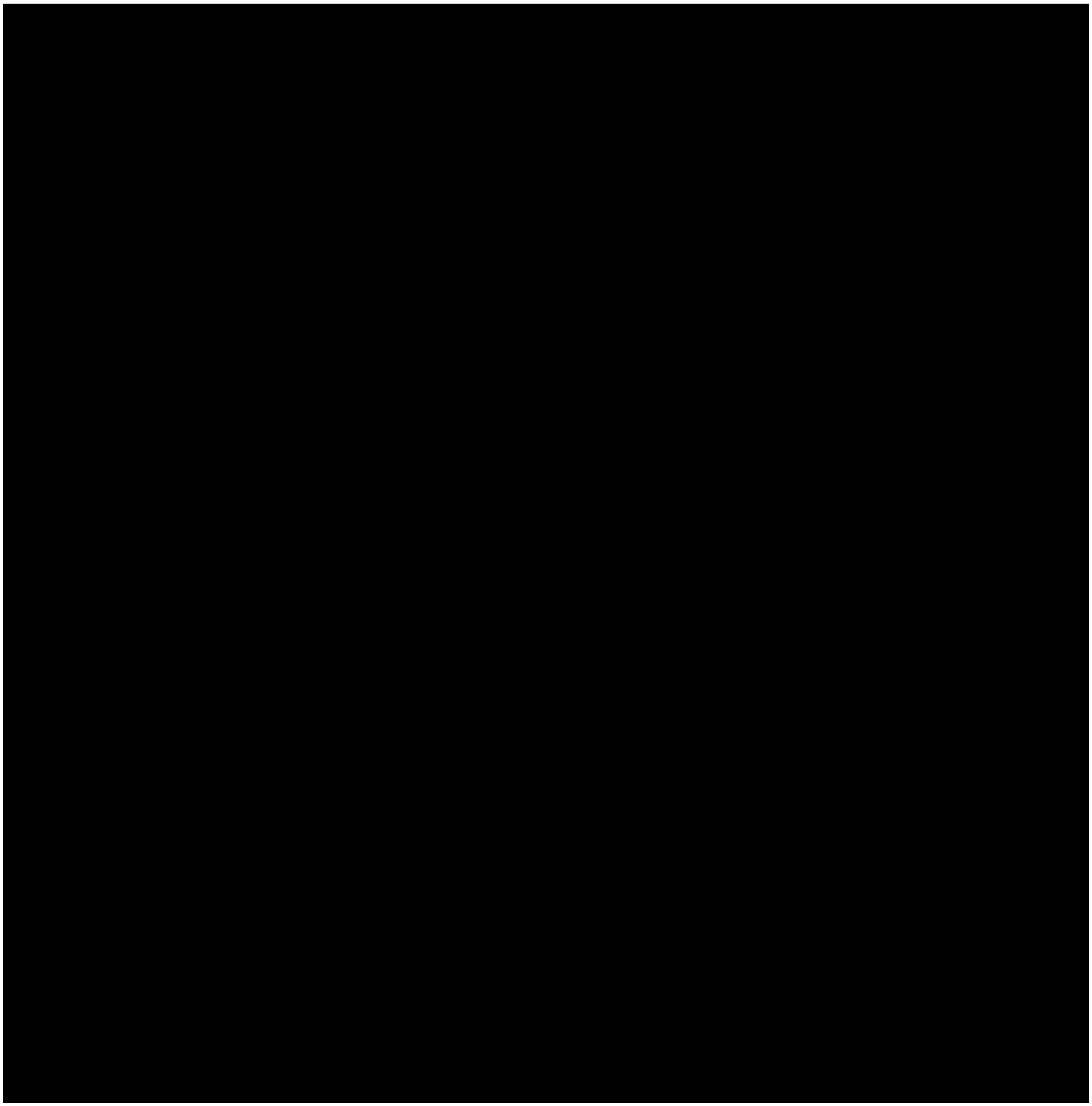


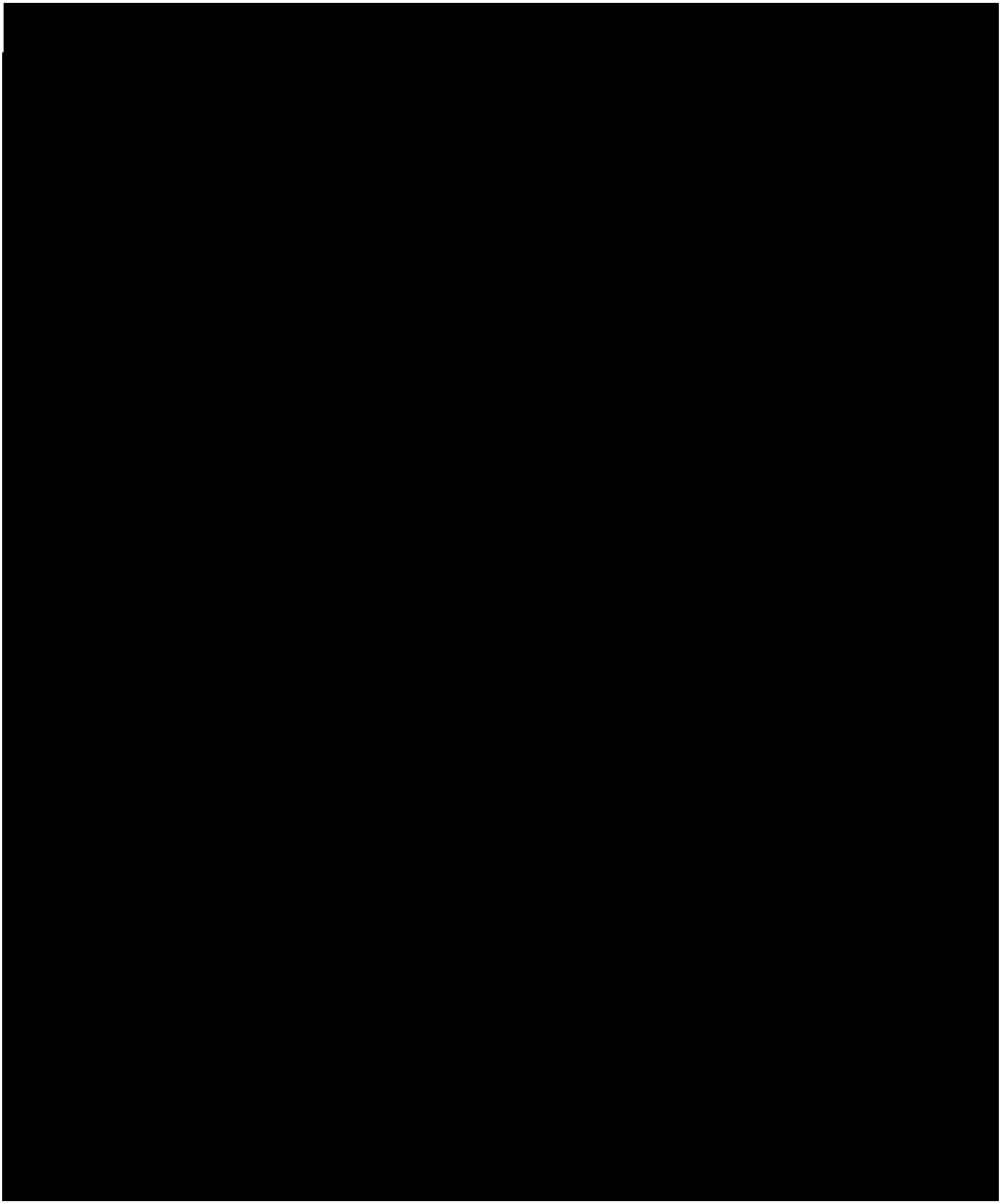
8.2.1.1 Details on project development activities

Atlantic Shores has relied on local suppliers and NJ businesses over the past 4+ years, leveraging their existing local expertise to support our development across the entire supply chain. Beyond the local manufacturing (more details in Section 8.2.1.2),

examples of the use of local suppliers and partners includes the use of NJ ports and fishing vessels for our G&G campaigns, local counsel, and advisors as well as the contracting of local environmental and technical firms for the design of our Project. Atlantic Shores will keep expanding this list of New Jersey suppliers throughout the development of the Project. An overview of all our existing activities conducted by New Jersey suppliers and service providers is presented in Table 8-3.

Table 8-3: Key partners for project development activities conducted and planned in New Jersey





[redacted]

8.2.1.2 Details on supply chain components and installation from New Jersey businesses or labor

While several parts of the offshore wind supply chain for the largest components still need to be created in New Jersey, Atlantic Shores is firmly committed to supporting the State in securing a large portion of the economic benefits of US offshore wind development. In fact, Atlantic Shores [redacted].

[redacted]

An overview of the suppliers [redacted] are displayed in Table 8-4.

Table 8-4: Key partners for supply chain activities conducted and planned in New Jersey

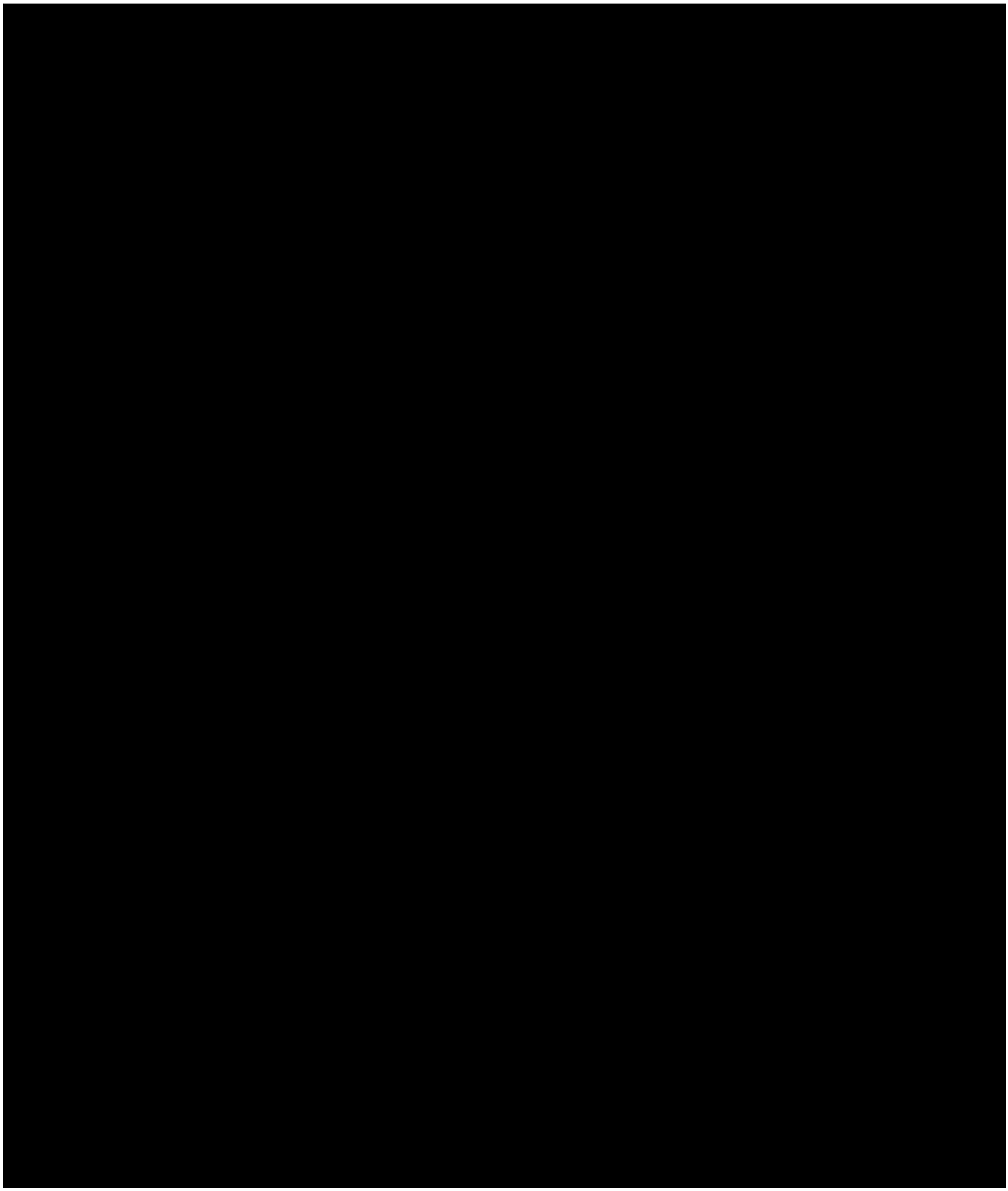
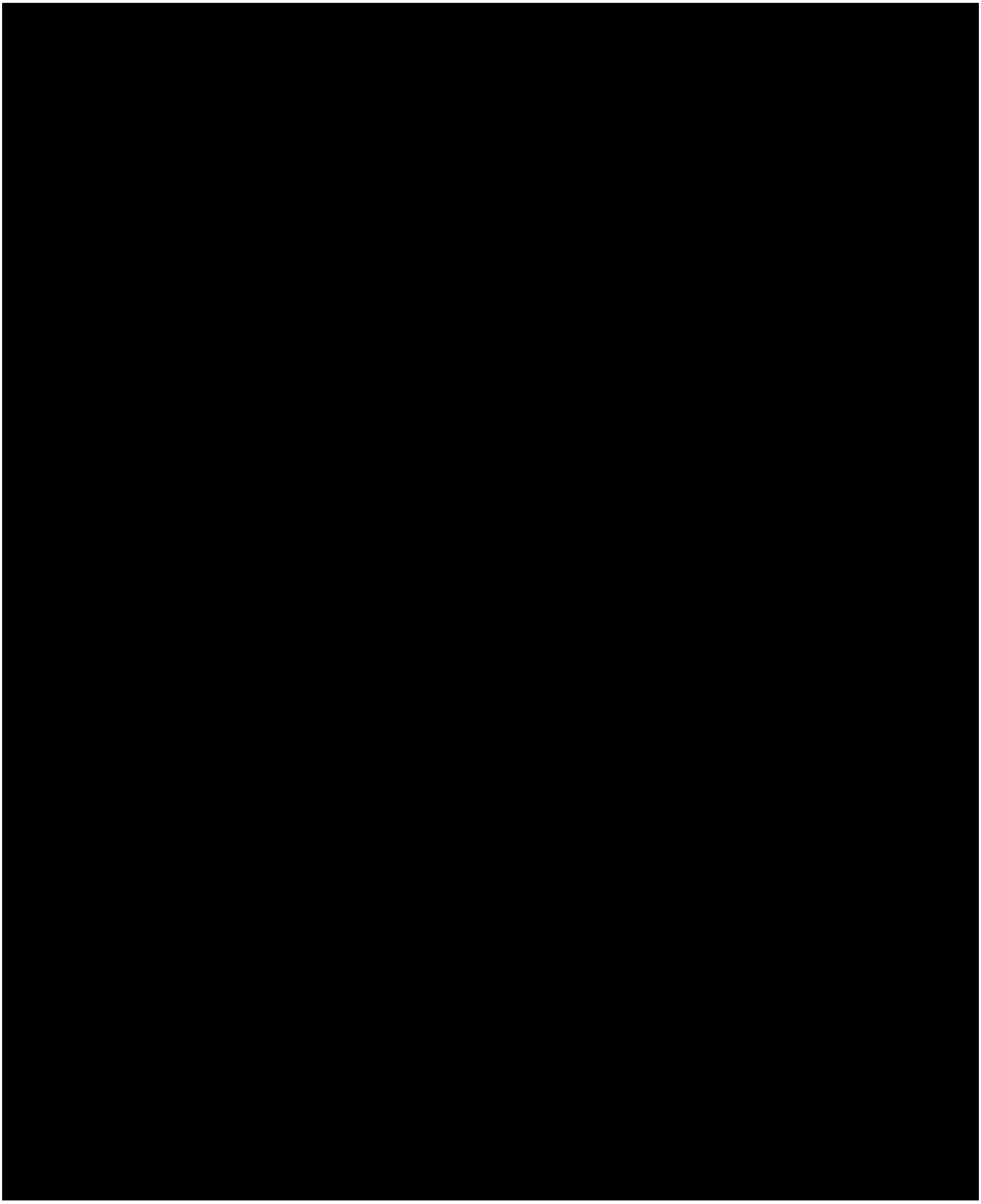


Table 8-5: Key supplier activities planned in New Jersey [redacted]

[redacted]



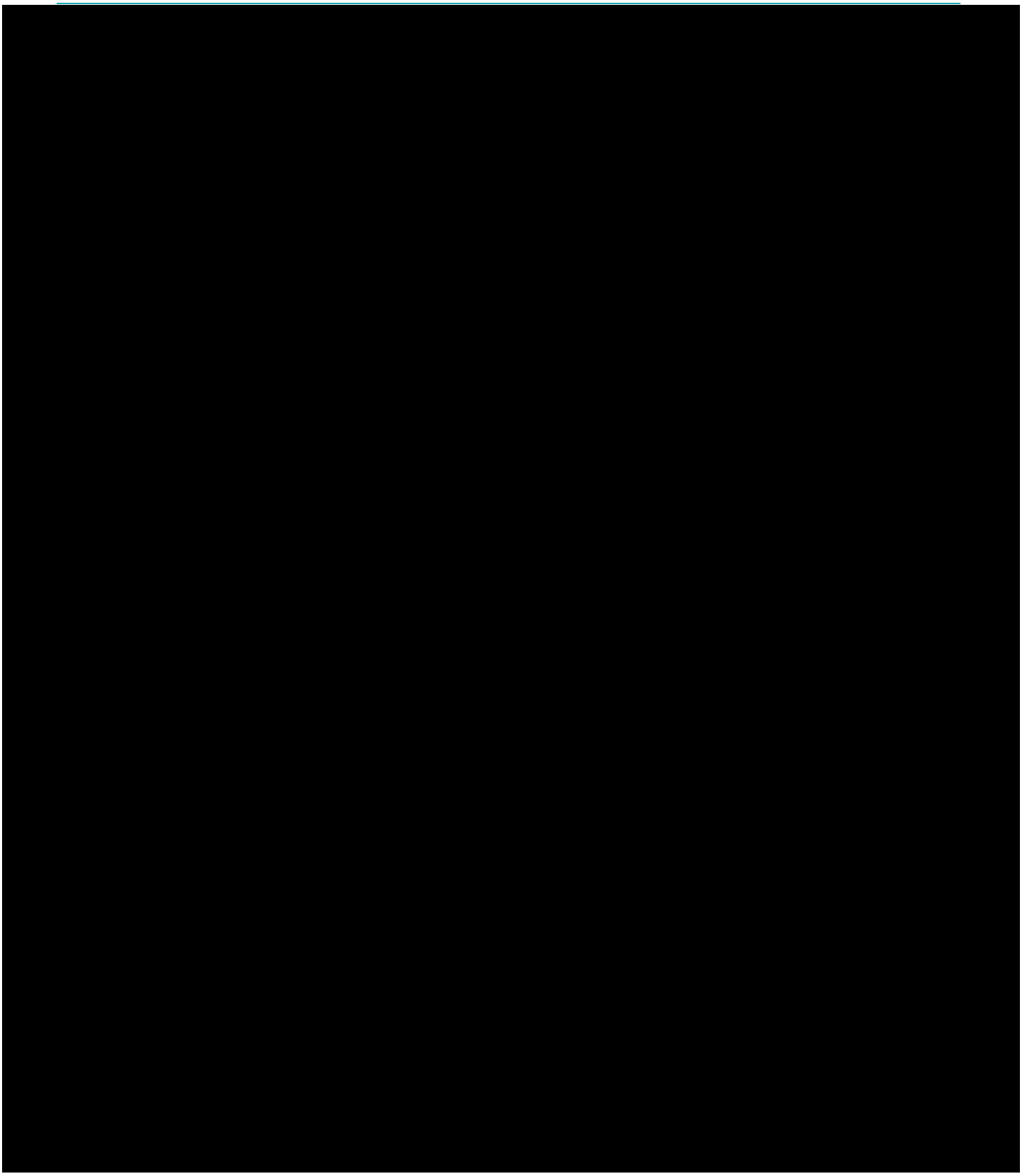
[redacted]

8.2.1.3 Details on workforce and community initiatives

Leveraging our many years of work in New Jersey, Atlantic Shores' workforce development focus is to expand access to training that will enable residents from OBCs to find well-paid and stable careers in this new, rapidly growing industry. Atlantic Shores will do this by [redacted]. A full list of all our key partners and activities in New Jersey are displayed in [redacted]

Table 8-6: Key partners for workforce and community initiatives conducted and planned in New Jersey

[redacted]



[redacted]

Table 8-7: Key workforce and community initiatives planned in New Jersey for [redacted]

[redacted]

[redacted]

8.2.1.4 Details on research initiatives

Investing in innovation is critical as the offshore wind industry seeks to drive down future costs and localize more of the supply chain. Through partnerships with [redacted]

- [redacted]
- [redacted]
- [redacted]

[69] Commitment regardless of a potential Project award

[redacted]

8.2.2 Planned in-State spending

As a result of its continuing efforts and local presence since 2018, [redacted]

Table 8-8: Manufacturing facilities brought to New Jersey

[redacted]

[redacted]

[redacted] The values shown below have been generated using an Input-Output (I-O) model. The NJ BPU has provided guidance on specific tools that are allowed to be used to calculate this, and we have chosen to use [redacted].

The I-O analysis models a change to an industry or commodity revenue and the resulting supply chain and business-to-business transactions that constitutes an industry spending pattern. "Direct impacts" to the regional economy (in this case the State of New Jersey) represent the initial impacts or change in the industry such as the number of jobs created, increases

[redacted]

in labor income or the total amount of sales or production. "Indirect impacts" are changes in inter-industry transactions when supplying industries respond to increased demands from the directly affected industries. "Induced impacts" reflect changes in local household spending that result from income changes in the directly and indirectly affected industry sectors. Further information on this model is provided in Chapter 17 - Cost-benefit analysis.

Table 8-9: Total (direct) in-State spending[71]

[redacted]

[redacted]

8.2.3 Local job creation and union commitments

8.2.3.1 Job creation in New Jersey

Atlantic Shores is the only bidder in this 3rd Solicitation which is *already* stimulating a significant number of jobs in the State of New Jersey. While this is primarily driven by our Project 1, we also have a full-time staff of [redacted], most of whom focus on development and construction in the State. [redacted]

[redacted]

[redacted]

Table 8-10: Summary of employment impacts

[redacted]

The direct jobs will be created across both development and construction, as well as operations and decommissioning. Thereby, New Jersey will benefit from increased employment both in the short term (before COD) and long term (from COD until completion of decommissioning), as described in Table 8-11.

Table 8-11: Direct jobs in different phases

[redacted]

The direct jobs for over all phases of the project will primarily be:

[redacted]

[redacted]

[redacted]

The direct jobs and the direct spend will create thousands of indirect and induced jobs as well, as described in Table 8-10. The indirect jobs are primarily in management services, wholesale trade and transportation, but also real estate, finance and insurance and several other New Jersey industries will benefit from increased economic activities. The induced jobs are in sectors such as health care and social assistance, retail trade and accommodation, and food services, which will also benefit from the thousands of workers brought to the region to deliver on our landmark [redacted] in New Jersey.

The jobs will be well-paid, also when comparing to the industry average. As an example, the average salary rate is estimated to be $35/hour for production, transportation, and construction employees. The jobs will range across industries, creating jobs for all categories of New Jersey labor. Atlantic Shores will use its environmental justice initiatives noted in Section 8.4.6 to ensure a diverse workforce is recruited, reflecting the communities Atlantic Shores operates in, and the ratepayers Atlantic Shores will provide green electricity for.

The consequences if the economic benefits to New Jersey do not materialize are presented in Section 8.3. Our proposed local content shortfall compensation mechanism addresses these consequences via [redacted]

The offshore wind project-related jobs, the PBI-related jobs, and the jobs from constructing and working at the [redacted] in New Jersey will be dispersed across the state, providing jobs in [redacted] and several other New Jersey communities.

8.2.3.2 Labor union commitments

Atlantic Shores has sought and will continue to seek ways to maximize the use of New Jersey organized labor, starting with manufacturing and construction. [redacted]

- [redacted]
- [redacted]
- [redacted]
- [redacted]
- [redacted]

[redacted]

[redacted]

[redacted]

8.2.3.3 Continued and expanded O&M

[redacted]

8.2.4 Increased in-State activity

Table 8-12 provides a summary of the increase in-State activity from the Project [redacted] and the PBI across their lifetime and includes direct, indirect & induced effects. The table includes five parameters:

[redacted]

[redacted]

Table 8-12: Increased in-State activity

[redacted]

As such, the Project and the PBI are expected to create significant economic activity in New Jersey, irrespective of which measurement is used.

8.2.5 Methods and substantiation of claims

The employment impacts and in-State spending have been developed and estimated through [redacted]

[redacted]. The estimates captured in this section are additional to any previous commitments from Project 1 (i.e., estimates in this section are over and above anything related to Project 1).

[redacted]

[redacted]

8.3 Guaranteed amounts and economic benefit shortfall compensation mechanism

8.3.1 Guaranteed in-State spend and jobs

As specified in the Solicitation, Atlantic Shores is prepared to guarantee its in-State spending and jobs. Such guarantees are split between (a) the development and construction phases and (b) the operations phase (including decommissioning).

[redacted]

Table 8-13: Summary of guaranteed in-State spend and jobs

[redacted]

[redacted]

8.3.2 Shortfall compensation mechanisms

[redacted]

Table 8-14: Shortfall mechanisms for different project phases

[redacted]

Item	Share of shortfall	Guarantee / cure mechanism
[redacted]		

8.3.3 Verification methods

Our guaranteed in-State spend amounts for each phase can be found in Table 8-13. [redacted]

[redacted]

[redacted]

Table 8-15: [redacted] shortfall compensation examples

[redacted]

8.4 New Jersey supply chain development plan

8.4.1 Local supplier engagement plan

[redacted]

Table 8-16: Targets for in-State spend by Phase

[redacted]

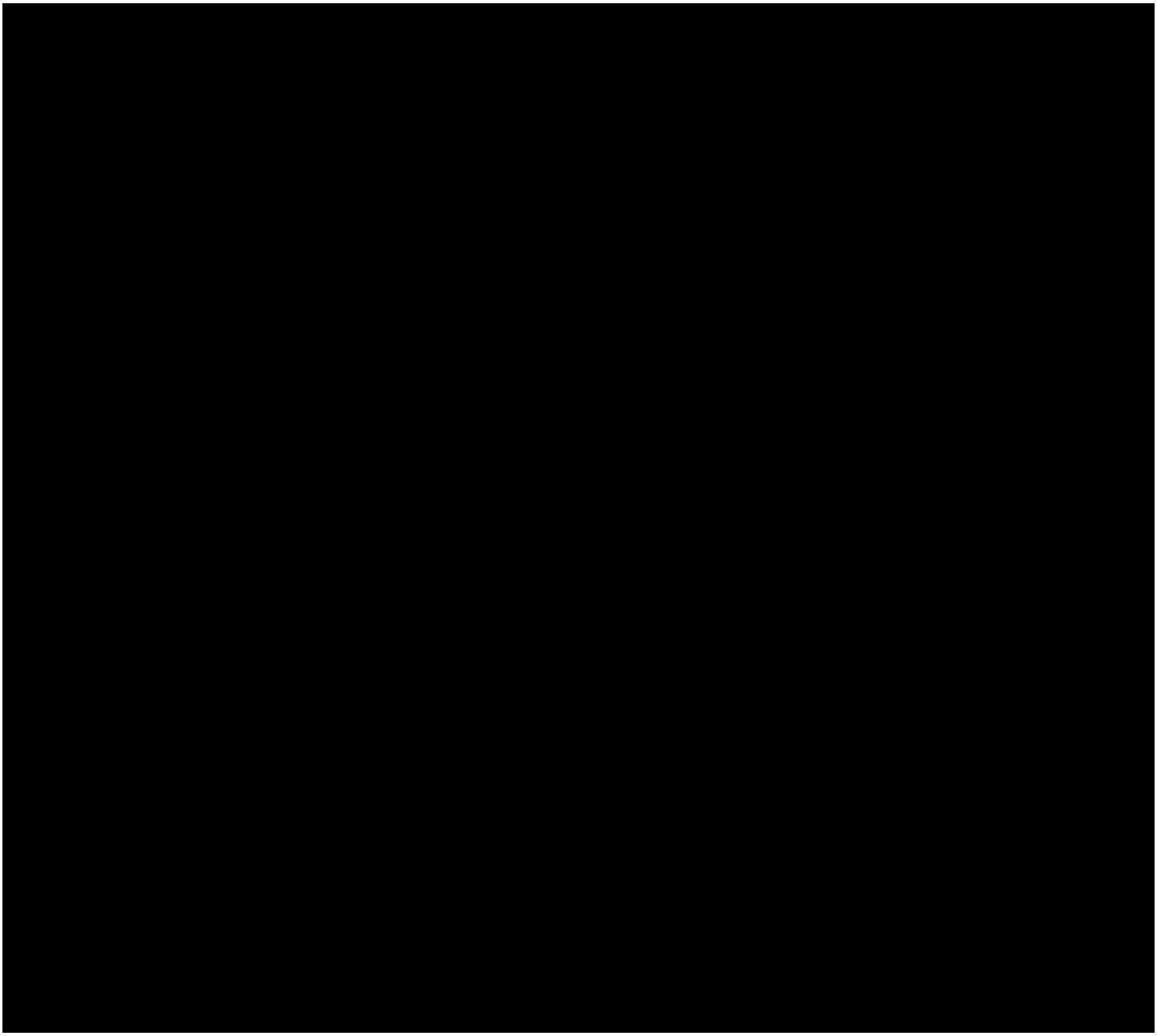
As the industry matures and supply chain opportunities grow, Atlantic Shores seeks to continuously raise the targets that are possible for our Project. That is particularly true for SMWVBEs, which continue to ramp up to support the industry. [redacted]

Atlantic Shores [redacted]

8.4.1.1 Engagement of SMWVBEs

Atlantic Shore's ambition is to partner with high-performing suppliers who share our commitment to excellence and core values. We seek suppliers who consistently align with our values and uphold standards of diversity, equity, and inclusion. By fostering diverse teams and inclusive environments, we believe in harnessing unique perspectives for success. Partnering with diverse suppliers enables us to achieve safe and efficient operations, drive innovation, and create positive impacts. As part of our Atlantic Shores commitment to engaging with SMWVBEs and to comply with bid requirements, we [redacted]

[redacted]



The offshore wind industry will create a new era of US industry, and we at Atlantic Shores take this responsibility seriously. We want to be sure that this new workforce is the best trained, safest, most productive and most diverse workforce possible. Atlantic Shores has already committed to training in our support of the NJ WIND Institute as well as signing a first-of-its-kind MOU focused specifically on training and collaboration with key Building Trade Unions in New Jersey as described in Section 8.2.3.2.

As we have spent time in New Jersey, we have learned much about the quality workforce that this State offers. We have created and maintained meaningful relationships with the State's unions and their training programs, and we have been marrying our partners in education and workforce development with our union partners to encourage synergy in recruitment, training, and job placement practices. Expanding opportunities to a diverse bidding pool will not only increase diversity, but it will equally increase innovation and jobsite equity. Opening the door to minority, women, disadvantaged and veteran-

owned contractors will increase investment in New Jersey's local communities and will spur meaningful and far-reaching economic development well past the boundaries of our lease areas.

[redacted]

Examples of certain upgrades and equipment are shown below in Figure 8-2.

Figure 8-2: [redacted]

[redacted]

[redacted]

The below Table 8-17 summarizes the estimated full-time job creation and capital spending per phase:

Table 8-17: [redacted]

[redacted]

[redacted]

Figure 8-3: Proposed layout for [redacted]

Figure 8-4: [redacted]

[81] For example purposes only

Figure 8-5: [redacted]

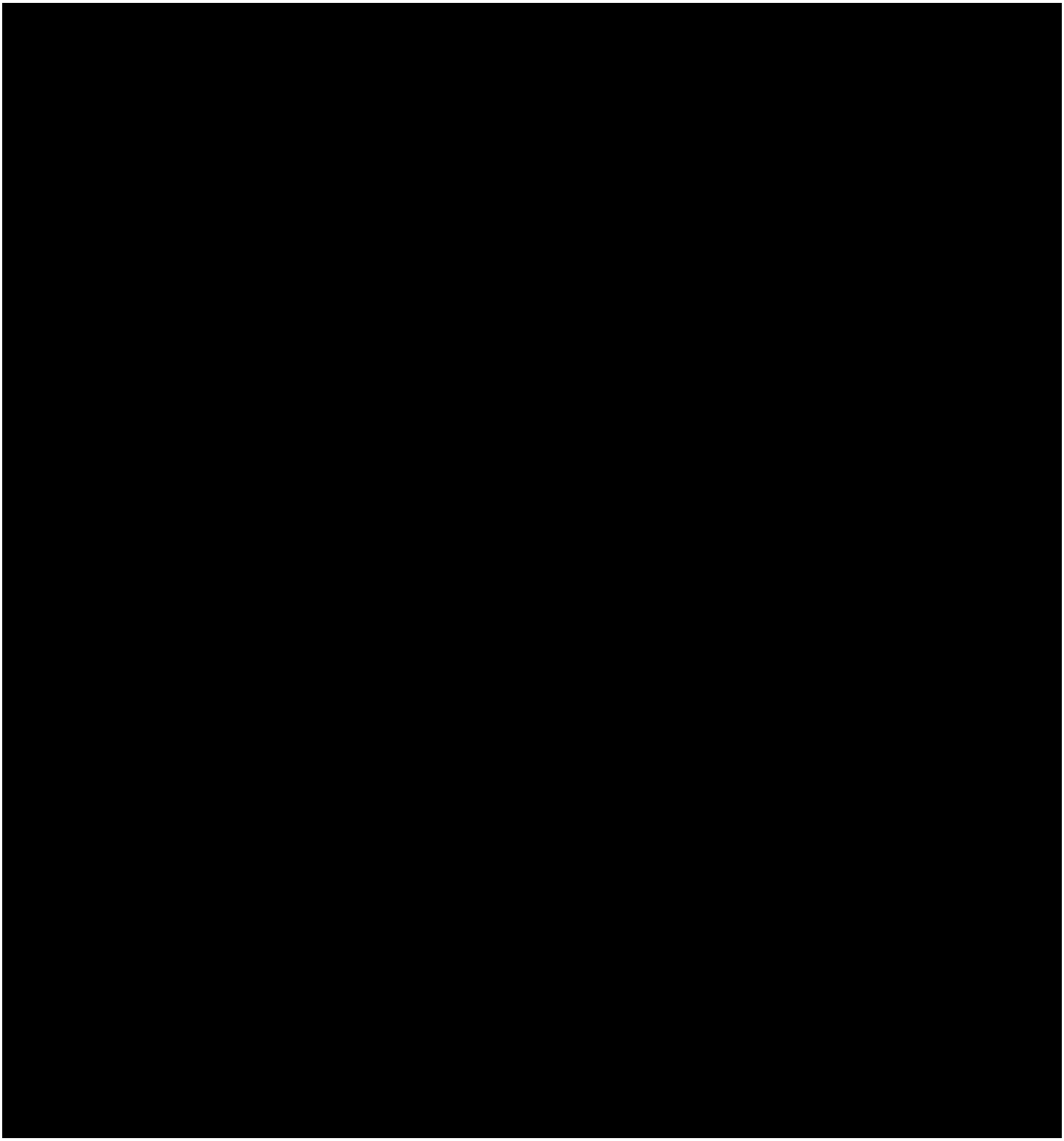


Figure 8-6: [redacted]

Figure 8-7: [redacted]

[redacted]

Figure 8-8: [redacted]

[redacted]

[redacted]

Figure 8-10: [redacted]

[redacted]

Table 8-18: Procurement details for base case of [redacted]

[redacted]

[redacted]

Table 8-19: [redacted]

[redacted]

Figure 8-11: [redacted]

[redacted]

[redacted]

Table 8-20: [redacted]s

[redacted]

[redacted]

Figure 8-12: [redacted]

[redacted]

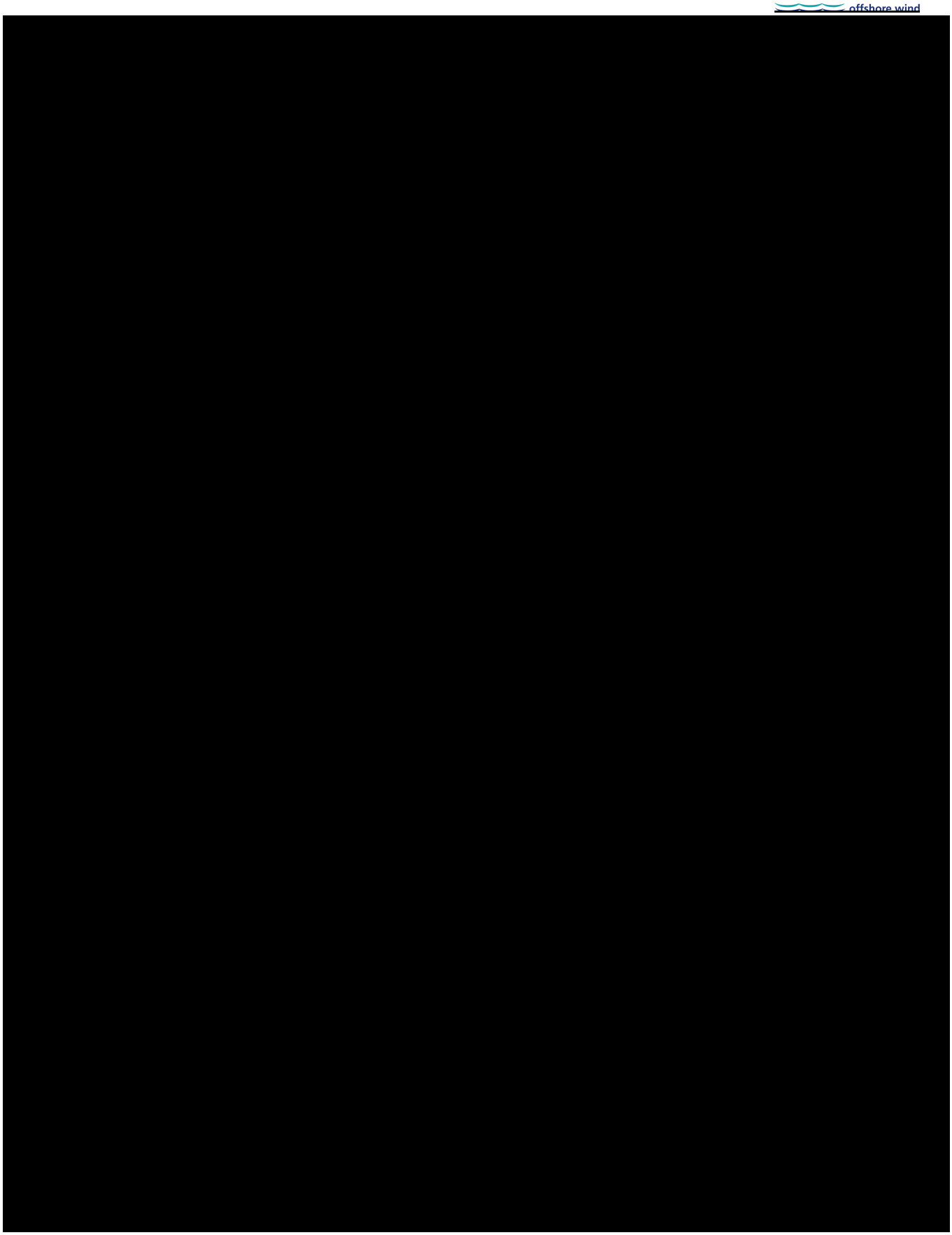


Figure 8-13: [redacted]

Figure 8-14: [redacted]

8.4.3 Developing and using New Jersey ports

[redacted]

[redacted]

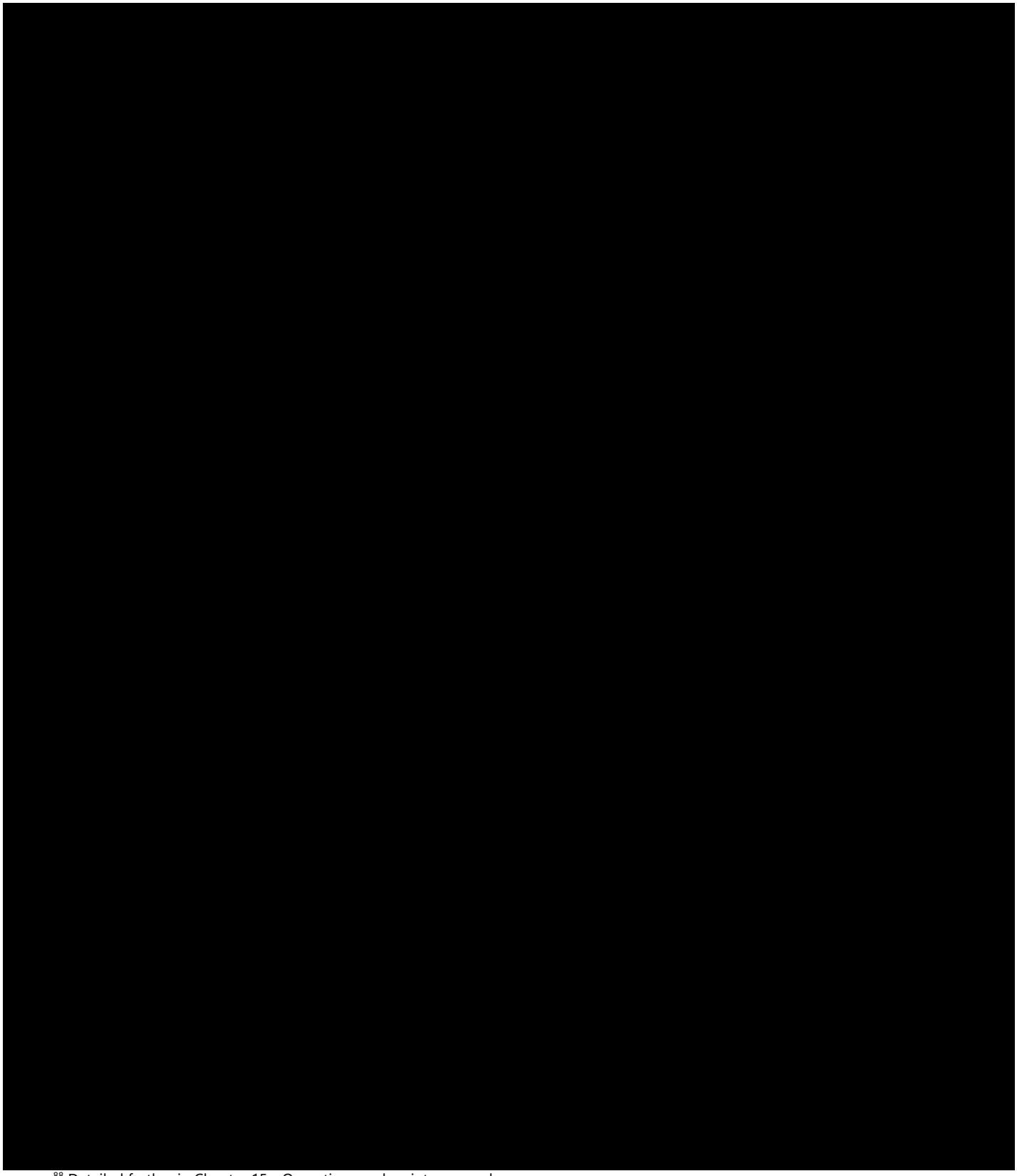
Purpose-built industrial ports are a key element for New Jersey on its path to become a leading offshore wind hub – these ports need to be designed for unconstrained manufacturing, staging, assembly, transportation, and service of offshore wind turbines and BOP. As noted above, Atlantic Shores will focus on [redacted]

[redacted]

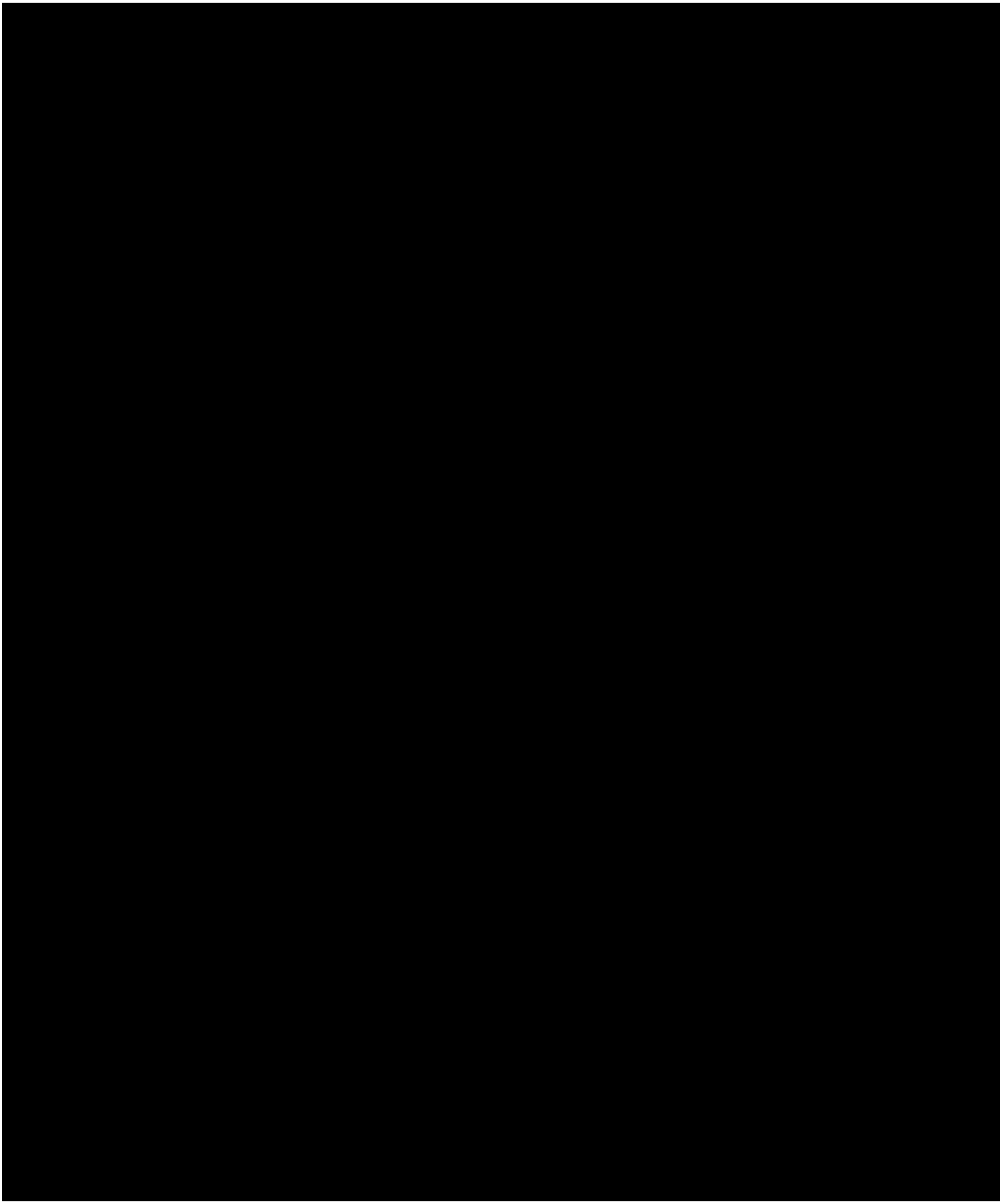
Atlantic Shores will continue to contribute to making New Jersey a hub for offshore wind by using and developing its ports across the State, following in the footsteps of our commitments and activities from Project 1. [redacted]

Table 8-21: Atlantic Shores' activities in NJ ports and harbors

[redacted]



[88] Detailed further in Chapter 15 - Operations and maintenance plan.



[redacted]

8.4.4 Workforce development

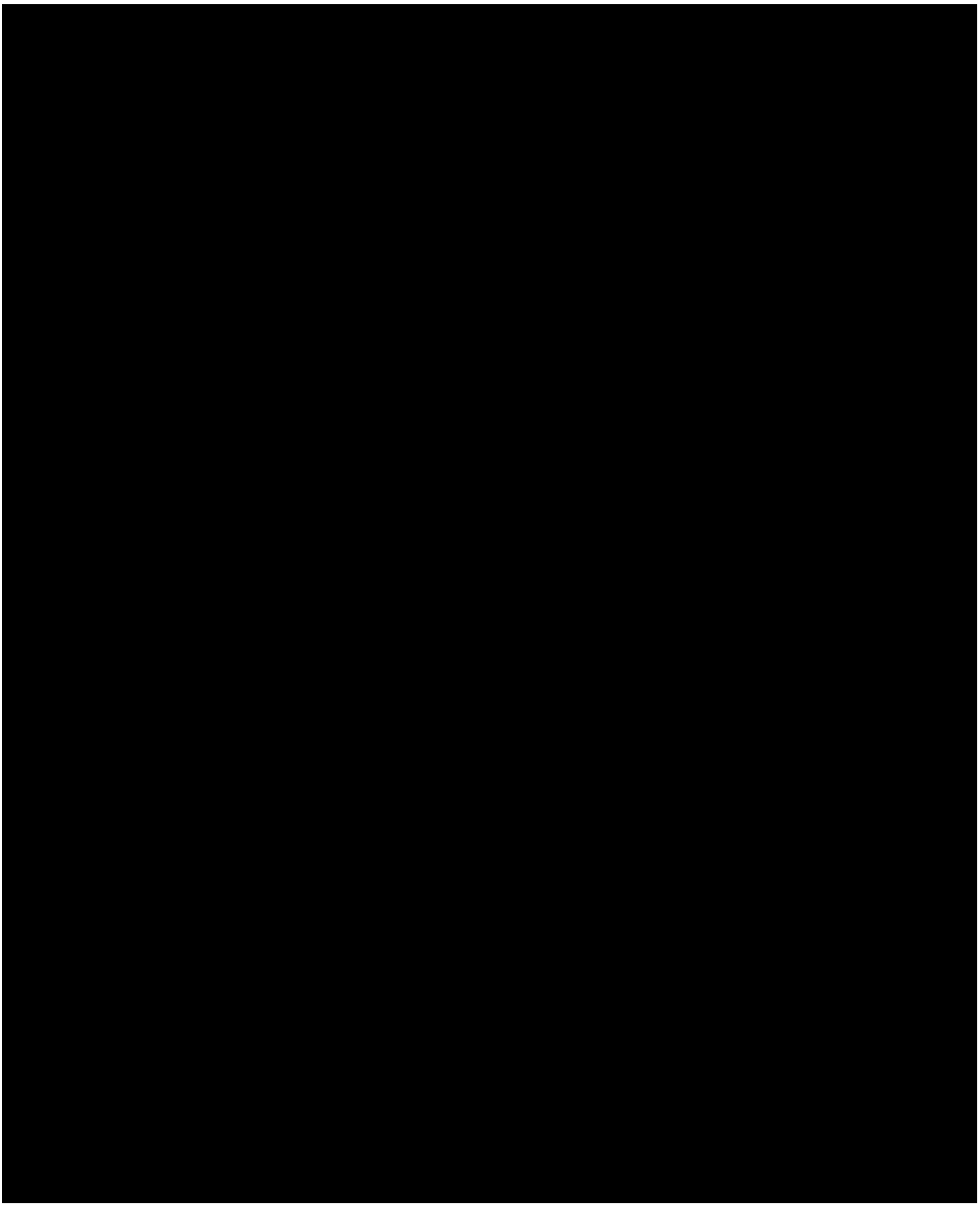
Positioning New Jersey as a hub for offshore wind with an abundant and capable workforce requires supporting the entire offshore wind value-chain including project development, component manufacturing, assembly, transportation, installation, and O&M, as well as all the subcomponent suppliers and indirect service companies that comprise the industry overall. The capabilities required span across multiple disciplines and trades including engineering, construction, installation, repair, and vessel operations, among others. All in all, the industry will require tens of thousands of highly qualified professionals working in well-paid, sustainable jobs with a shared objective of contributing to a greener New Jersey. Atlantic Shores is making a commitment to [redacted]. This will enable existing institutions to leverage their outreach and involvement in the community to reach the broadest pool of potential students and future business owners as possible.

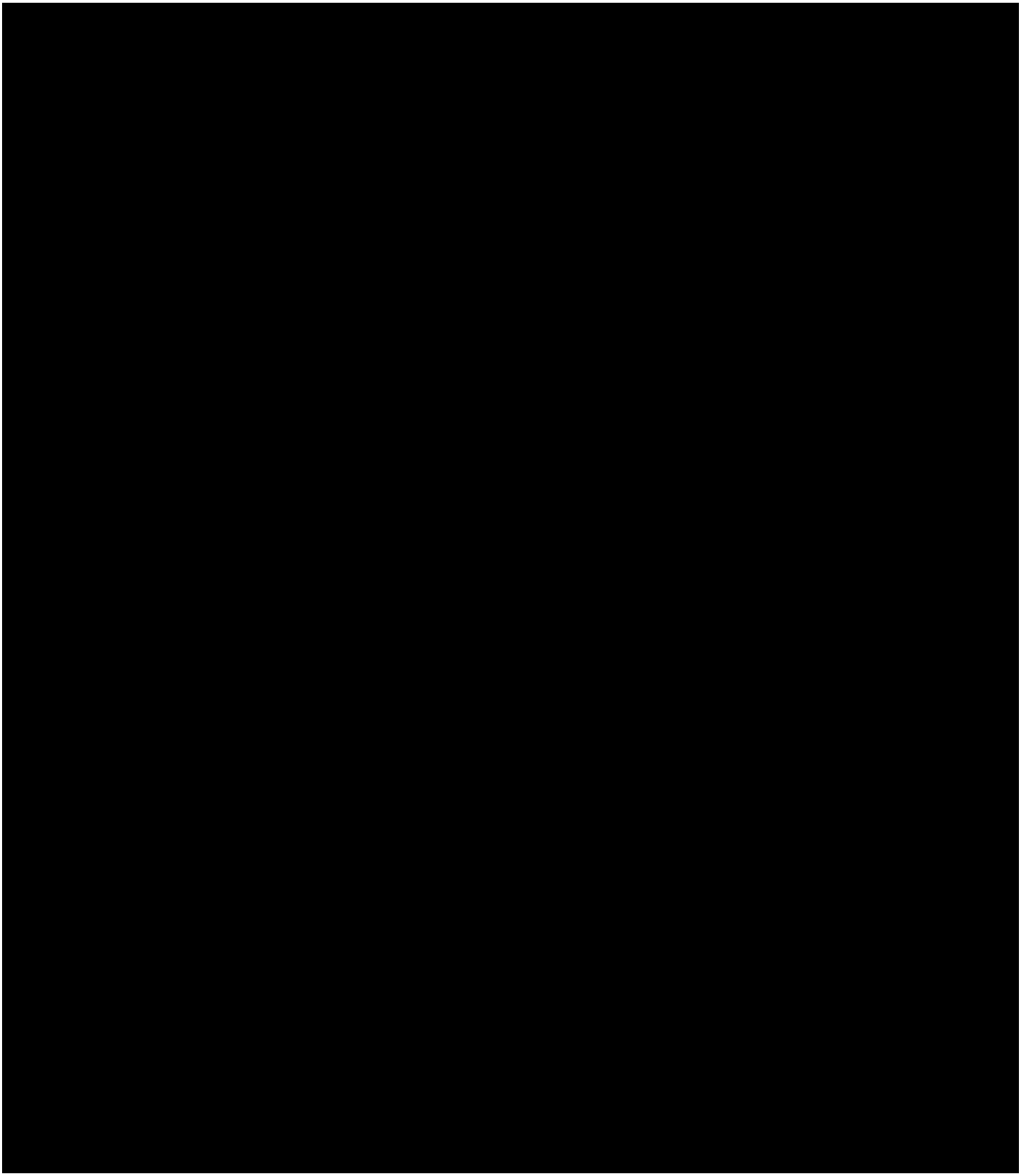
New Jersey already has a very capable and strong existing workforce with transferable experience and skillsets including those in general construction that can be applied to onshore underground cable installation and substation assembly, the many skills and trades involved in loading and unloading goods at the ports, and in vessel operations (among others). [redacted] Additionally, the State's wide array of educational institutions have numerous programs that can be expanded and built upon to provide the necessary industry-specific training and certifications. New Jersey must rapidly expand its efforts to create an offshore wind ecosystem that supports a diverse supplier base and educates and trains individuals to enter the offshore wind industry. Atlantic Shores will invest in several initiatives to contribute to New Jersey's emergence as the strongest offshore wind workforce on the Eastern seaboard. The full overview of our initiatives can be seen in Section [redacted]

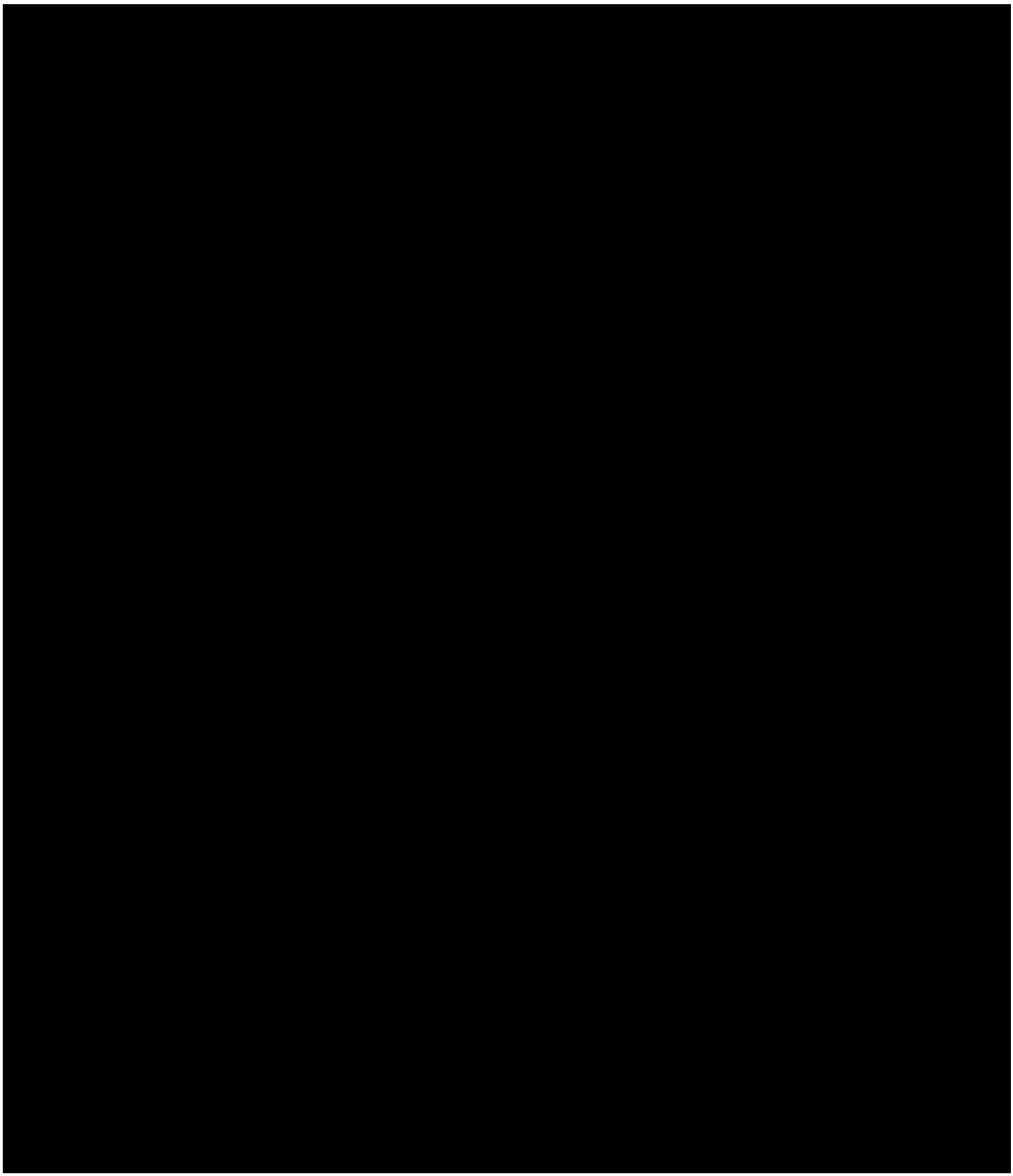
8.4.4.1 Key strategic initiatives

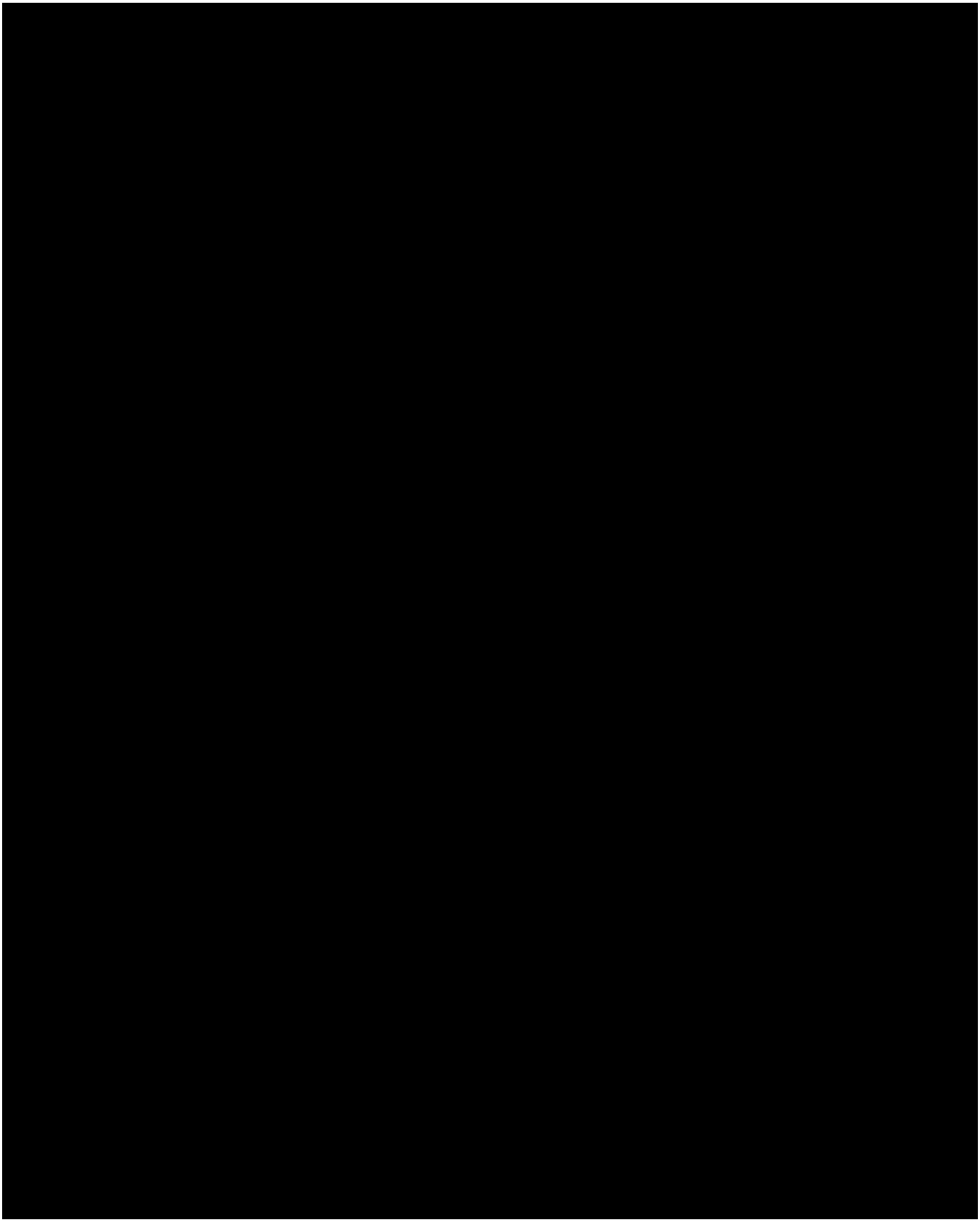
The following highlights each of the key strategic initiatives and our commitment to develop the workforce of the future in New Jersey.

[redacted]









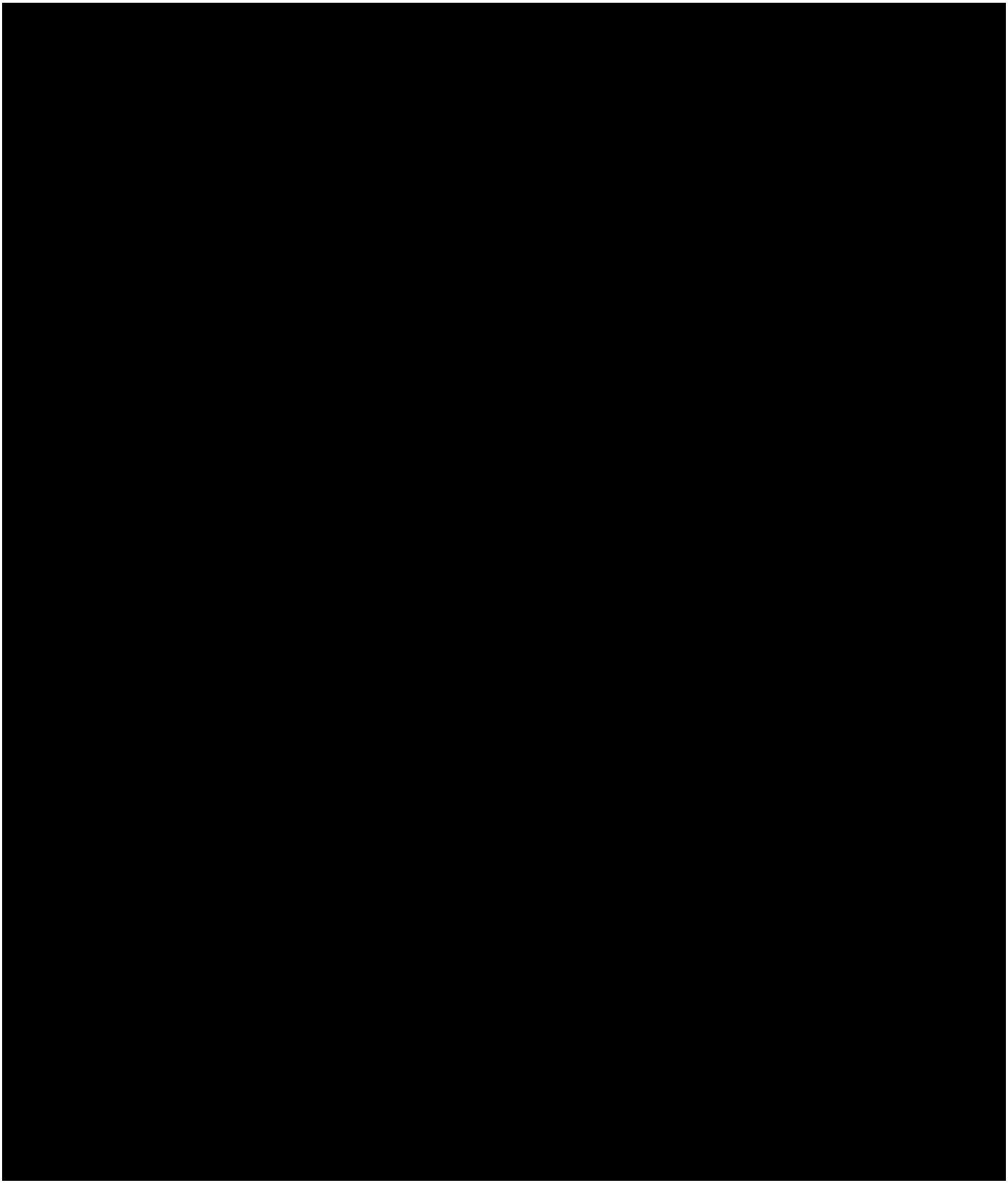
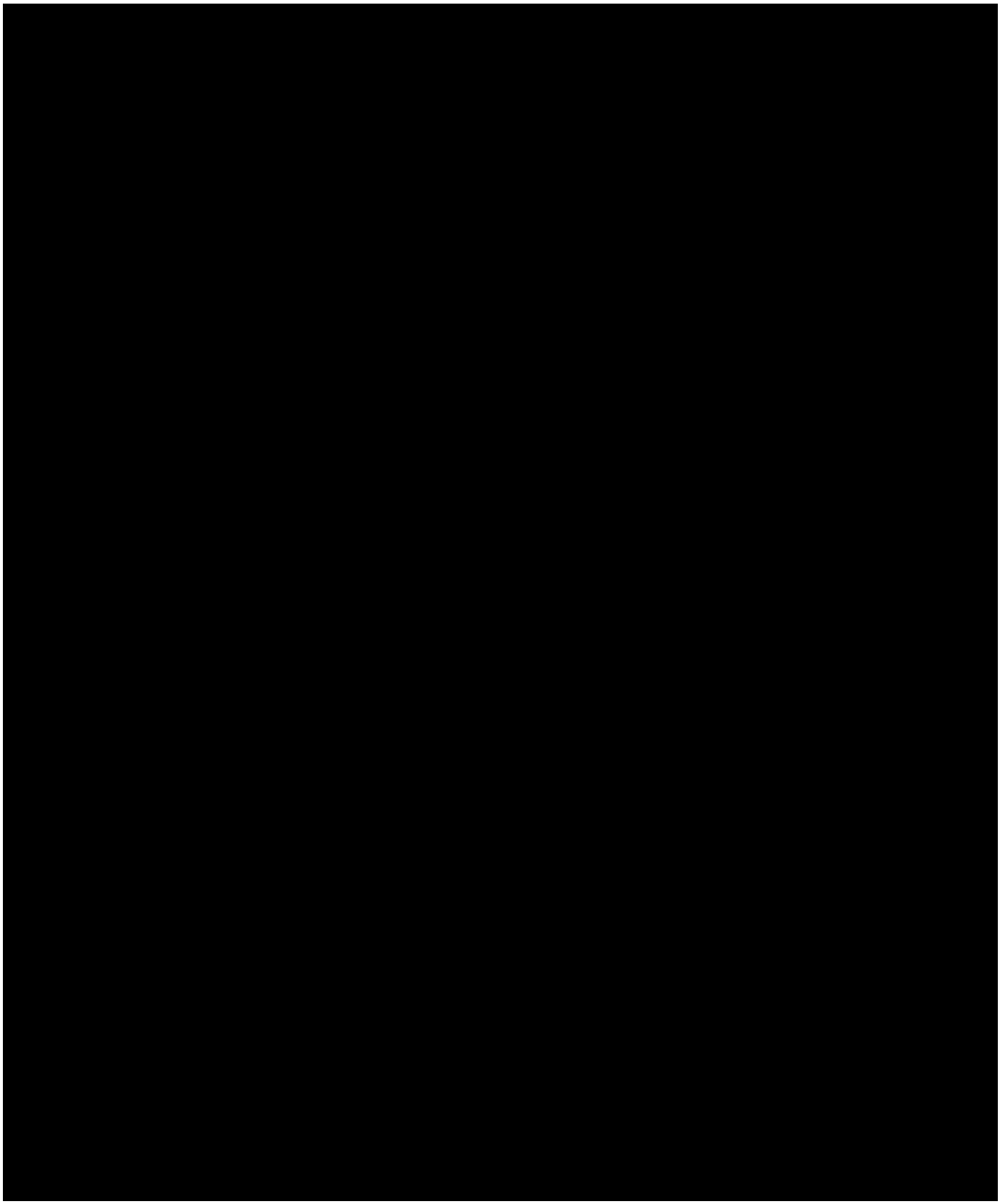


Figure 8-15: Impressions from special docking and tour of Fugro Enterprise surveying vessel

With [redacted] Atlantic Shores and Commissioner Robert Asaro-Angelo, Kerri Gatling and Catherine Carroll from the New Jersey Department of Labor

8.4.4.2 Job opportunities for NJ residents and OBCs

With our strategic initiatives, we aim to provide opportunities for NJ residents, with a particular focus on OBCs. As part of this, we also aim to fund efforts to enable a diverse and inclusive education. [redacted]



[redacted]

Table 8-22: [redacted]

[redacted]

8.4.5 Fostering innovation in the offshore wind industry

Research and innovation are at the core of offshore wind development, with new technologies and approaches constantly evolving in unique partnerships between actors such as developers, suppliers, and research institutions. As part of our Project development efforts, Atlantic Shores has established robust working relationships with several research organizations and universities to foster innovative and environmentally responsible approaches to offshore wind development, as highlighted in Section 8.2.1.4. The key strategic initiatives focused on innovation that will be pursued as part of this Application are elaborated in more detail in the following.

- Project description,

[redacted]

8.4.6 Supporting environmental justice and overburdened communities

Atlantic Shores recognizes the opportunity to directly benefit environmental justice communities through thoughtful and targeted development choices and has taken steps to be inclusive in how it develops, constructs, and maintains its Project. Atlantic Shores recognizes the responsibility it must deepen and maintain the trust built in [redacted] where it works.

[redacted]

8.4.6.3 Supporting the SMWVBE supply chain

Atlantic Shores' existing network of suppliers and consultants demonstrates its commitment to utilizing SMWVBEs whenever possible. This commitment will continue through development, construction, and operations and maintenance. Atlantic

[redacted]

Shores' significant partnership with the [redacted], paving the way for a more diverse array of firms participating in the industry. In partnership with the Supply Chain partners listed below, we have deepened relationships and increased opportunities for underrepresented groups in the offshore wind supply chain. [redacted]

[redacted]

Together, these initiatives reflect Atlantic Shores' commitment to meaningful partnerships that will yield economic and environmental benefits to environmental justice and overburdened communities around the state and that will seed a diverse and dynamic offshore wind ecosystem in New Jersey. As referenced in Section 8.4.1.1, Atlantic Shores will continue to make commitments to hire and recruit from these programs to ensure New Jersey's offshore wind workforce resembles the communities in which our projects are being built.

8.4.7 Summary of economic development Initiatives

[redacted]

Table 8-23: Overview of funding commitments to workforce development, innovation and labor

[redacted]

[redacted]

8.5 Effective competition promotion and risk reduction in offshore wind industry

[redacted]

9 Stakeholder engagement

Contents

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Solicitation requirements

Table 9-1 describes the deliverables of this chapter, and the following sections below contain the required bid writing content.

Table 9-1: References for solicitation requirements

Key solicitation requirements	Application reference
A description of the Applicant's values and philosophy related to stakeholder engagement (N.J.A.C. 14:8-6.5(a)(16))	Section 9.2
Identification of key stakeholders by category and specific organizations or entities, and goals for engagement with these stakeholders, including, but not limited to, tribal nations, community-based organizations, local and county elected officials, recreational and commercial fisheries, labor unions, higher education, coastal residents and business owners, economic and workforce development organizations, environmental and environmental justice groups, OBCs, and New Jersey SMWVBEs (N.J.A.C. 14:8-6.5(a)(16))	Sections 9.3 and 9.4
Specific stakeholder engagement activities the Applicant has already conducted, what concerns have been raised, what has been done to date to address those concerns, and what activities the Applicant will take to address any concerns that have not been addressed (N.J.A.C. 14:8-6.5(a)(16))	Sections 9.3 and 9.4
Specific stakeholder engagement activities that the Applicant plans to conduct through COD (N.J.A.C. 14:8-6.5(a)(16))	Sections 9.3 and 9.4
A description of the Applicant's strategies for engaging with New Jersey government entities (N.J.A.C. 14:8-6.5(a)(16))	Section 9.3

9.1 Summary

Active stakeholder engagement is critical for any offshore wind project in New Jersey to build trust, foster acceptance, and maximize long-term development success. Our Stakeholder Engagement Plan expands on our already established relationships with agencies, communities, and research institutes that initiated with the inception of Atlantic Shores' acquisition of our original New Jersey lease area (OCS-A 0499) in 2018. Atlantic Shores adopted a Portfolio approach with respect to stakeholder engagement to foster long-term collaboration and support for sustainable and successful development of all of our planned projects. The key pillars of our engagement are highlighted in this chapter.

Section 9.2 highlights our **stakeholder engagement values, strategy and team**. Our plan builds on our four core values: *Be safe, Be a good neighbor, Be a good steward of our environment* and *Lead with science*. We have cultivated these values in New Jersey since launching in 2018 with the aim to bring a net positive benefit to the State with each of our projects. Our commitment to live up to these values and care for our workforce and community is evidenced for instance by the nearly [redacted] In addition, we invest into a wide range of initiatives across New Jersey communities to generate a measurable social benefit for local individuals and organizations and provide us with an invaluable understanding and feedback to help anticipate, surface, and troubleshoot problems related to our current and future projects and their delivery.

Our engagement strategy focuses on increasing awareness and broadening public support for our Portfolio and the New Jersey green energy economy in general. We aim to provide community members with the best information about our construction schedule and community investments while working hand-in-hand to create opportunities for feedback that shape our Project. Our approach to stakeholder engagement has helped establish Atlantic Shores as a respected, authentic brand in the offshore wind industry. Atlantic Shores' stakeholder engagement activities are supported by a team of Community Liaison Officers, all of whom are Garden State residents that have been actively involved in New Jersey civic life for at least 20 years, including a former coastal community Mayor from Island Heights, NJ.

Section 9.3 describes the **identification and our understanding of key stakeholders.** Atlantic Shores has identified stakeholders that are vital for the success of our Project and PBI including communities in Atlantic[redacted], local and county elected officials, civic and community-based organizations, labor unions, environmental non-governmental organizations (eNGOs), tribes, OBCs, and SMWVBEs. We know most of these stakeholders already, and they know us, as we have gained their support (LOS and MOU for selected partners in Appendices 9-1 to 9-3 and 9-5 to 9-21) and worked with them extensively over the past +4 years. As part of these efforts, Atlantic Shores has cultivated deep and meaningful relationships with community residents and civic leaders in areas affected by our Project and PBI. Some of these connections are:

[redacted]

Through countless touchpoints and conversations, we have worked to build trust and mutual understanding of the desires and concerns stakeholders and local communities have regarding offshore wind that we elaborate on in this section. Atlantic Shores leverages this hard-earned knowledge to develop our stakeholder engagement activities and partnerships ultimately aiming to ensure a high-quality Project delivery that maximizes the potential benefits for the communities we serve.

Atlantic Shores has deepened and enhanced our unique strategic partnership with [redacted]

Section 9.4 dives into our **Stakeholder Engagement Plan** detailing our dedicated engagement tools and feedback loop. In addition to our targeted initiatives detailed above, we engage with a wider audience for instance through our active participation in local membership organizations [redacted] as well as different community and signature events that we host at the ECO Center such as [redacted]. In addition, Atlantic Shores deploys innovative, novel [redacted] to make offshore wind development more tangible for the community, by partnering with [redacted]

Stakeholder engagement | Our commitment to New Jersey

- Continued dedication to our four core values: *Be safe, Be a good neighbor, Be a good steward to the environment* and *Lead with science*
- Stakeholder engagement plan building on hard-earned relationships established over the past 4+ years
- Support by the community as evidenced by over [redacted] with selected partners
- [redacted] invested to implement and scale high-quality public information, education and research programs
- Strategic partnerships with multiple [redacted] into high impact workforce development programs
- Local team of Community Liaison Officers consisting of Garden State residents that served in local civic life for at least 20 years, including a former coastal community Mayor

[redacted]

9.2 Stakeholder engagement values, strategy and team

9.2.1 Our core values

Atlantic Shores is built on a commitment to four core values: *Be safe, Be a good neighbor, Be a good steward of our environment, Lead with science.*

Be safe

Health, Safety, Security and Environment (HSSE) is a cornerstone of our corporate culture, commercial strategy, and overall approach to stakeholder engagement. We endeavor to safely, responsibly, sustainably, and ethically develop renewable energy. Atlantic Shores has a rigorous and robust safety culture informed by the EDF Renewables Health, Safety, and Environmental goals and Shell Goal Zero ambition to work injury and incident-free. This includes our work on the water with contractors, our engagement with the public onshore and everything in between.

Atlantic Shores encourages a learner mindset that incorporates best practices and lessons learned in the service of public safety. Some examples of our HSSE success story include conducting [redacted] as well as two diversions to help mariners in distress.

Be a good neighbor

In addition to cultivating an extensive safety culture, being a good neighbor is a key component of our values and philosophy. Since launching in 2018, Atlantic Shores has been a visible, reliable, consistent presence in the Garden State, participating in [redacted] and information sessions with people who have an interest, concern or will be influenced by any of our projects. Being a good neighbor means listening to community voices, educating the public about offshore wind, and creating meaningful opportunities to shape our projects.

In addition to conducting stakeholder engagement activities, being a good neighbor means investing in the community. Atlantic Shores funds initiatives and strategic partnerships across New Jersey with a particular focus on the coastal communities of [redacted], and Overburdened Communities (OBCs) including [redacted] These programs serve to improve our understanding of community needs, generate a measurable social benefit for local individuals and organizations, and provide us with invaluable feedback to help anticipate, surface, and troubleshoot problems related to project delivery. Atlantic Shores believes in a purposeful clean energy transition rooted in jobs and workforce development, and we are proud of our contributions to New Jersey's civic, cultural, and economic prosperity.

Be a good steward of our environment

We aim to be a good steward of the environment. Atlantic Shores takes a long-term, balanced approach to a shared use of our ocean and onshore Project area, seeking to understand and mitigate any potential effects our Project may have on the environment, wildlife and industries that fuel our local economies. Being a good steward of the environment means working to ensure natural resources are prioritized and protected throughout the lifecycles of our Project, from pre-construction through decommissioning. Atlantic Shores has completed more than [redacted] environmental impact assessments and is planning additional studies to understand how to best avoid, minimize, and mitigate any adverse impacts on the natural environment. seek to drive initiatives that support restoration and enhancement of these resources and considerations. With this understanding, we aim to develop and deliver a Project that results in a net positive impact on the communities and environments that we operate in (see Chapter 9).

Lead with science

We take a rational, evidence-based approach to project design, development, construction, and operations. We evaluate and deploy innovative technologies that improve our Project while lending our knowledge, expertise, and resources to enhance research and monitoring initiatives that benefit all ocean users. In the spirit of collaboration and transparency, Atlantic Shores publishes a weekly bulletin detailing our vessel operations and what type of activities are being performed. This provides helpful information to mariners and other ocean users (see Chapter 11) and serves to demystify our work and combat misinformation.

Through our strategic partnerships with the Mid-Atlantic Regional Association Coastal Ocean Observing System (MARACOOS) and the [redacted], Atlantic Shores shares atmospheric and ecological data collected from our Lease Area (see Appendix 10-4) to improve the overall quality of research related to the impacts of offshore wind development on climate change. We live by our values and lead with science in our efforts to develop offshore wind.

9.2.2 Our engagement strategy

The goal of our stakeholder engagement strategy is to increase awareness and public support for our offshore wind projects. This includes providing community members with the best information about our construction schedule and community investments as well as creating convenient channels and opportunities for feedback that serve to improve our Project. We aim to deliver high-quality clean energy infrastructure in true public-private partnership.

[redacted]

As part of these efforts, we have learned that there is a deep public interest in learning more about offshore wind and understanding the product, not just in the abstract terms of "green" or "clean" but in terms of real-world economic and environmental benefits. We have been honored and humbled to meet the demand for additional information in this regard and have responded with community investments and partnership initiatives that address these issues head-on. In addition to taking a more grounded approach to marketing our projects, we have also learned that you can never have enough touchpoints or "door knocks" with potential supporters. As we continue to transition from virtual-only meetings and return to more traditional in-person outreach activities, Atlantic Shores will remain visible, active, and unmatched not just in [redacted], but across the region and the State of New Jersey.

For this 3rd Solicitation, Atlantic Shores has invited the identified key stakeholders to join us in dialogue about our Project and encouraged them to provide feedback in the spirit of more diverse, equitable, and inclusive construction and operations plan. Mindful of information access for instance in historically marginalized environmental justice (EJ) and officially designated overburdened communities (OBCs), Atlantic Shores has a dynamic and robust outreach plan that builds on our past track record, lessons learned and includes strategic partnerships, targeted outreach activities and multiple communication channels to reach stakeholders where they are. The Atlantic Shores Stakeholder Engagement Plan is based on doing right by New Jersey, showcasing our commitment to the four core values and an operating framework with clear timelines and deliverables.

9.2.3 Our team of community liaison officers

Our stakeholder engagement team actively engages with our communities ensuring our values are at the core of these interactions. This team comprises Atlantic Shores management, community relations staff, government relations staff, and Community Liaison Officers (CLOs).

CLOs are at the heart of our community engagement as they interact daily with stakeholders and meet behind the scenes to discuss feedback and act as designated points of contact for project stakeholders. Our CLOs and many staff are New Jersey residents and New Jersey college graduates with family in-State. Everyone possesses prior experience in New Jersey coastal communities and draws upon their decades of work and living in the area to gain a deeper understanding of the stakeholder groups they represent. Atlantic Shores and our CLOs are deeply rooted in the community and believe that early and often, transparent, and productive dialogues with our stakeholders are essential to ensure an effective development of our Project and maximized net benefits to NJ residents.

Besides our local CLOs, members of every Atlantic Shores team participate in events. This includes members of our team from our interns to our CEO, who show up at community events to make sure they understand where we work and how we engage with the community. We also encourage team members who are not often the public face of the company to participate and understand the community.

Meet Atlantic Shores' Community Liaison Officers

9.3 Identification and understanding of key community and economic stakeholders

Atlantic Shores has a proven track record of success identifying a large and diverse group of stakeholders that represent individuals and organizations involved in or interested in our Project. We have been invested in the community since our JV inception and leverage the established relationships and collaborations across the public, private, and non-profit sectors from Project 1 to ensure that all stakeholders' voices are heard and valued. Our approach prioritizes inclusivity, as we believe that unique perspectives are vital to not only our [redacted] but our entire Portfolio's success.

This section identifies the key stakeholders that we have and will continue to engage with to support our mission. These groups include elected officials and government staff, community organizations, residents, local fisheries, workforce development leaders, labor, higher education, and environmental advocates. Our engagements are described in detail in this section to demonstrate the depth of our understanding of each of these stakeholders. We can present an extensive track record of past engagements and initiatives, most of which will continue in support of our overall Portfolio. We stand by our words and will continue to be active members of the community and find new ways to engage stakeholders that will cement our position in the midst of our communities. For this reason, we have compiled a comprehensive set of new engagement initiatives. A full overview on our previous and future engagements is provided in Appendices 9-1 to 9-21 and Table 9-2.

9.3.1 Summary of engagement initiatives

Table 9-2: Past and ongoing initiatives and engagements in our community

[redacted]

The continuing work and expansion of outreach fullfill our core values, especially to be a good neighbor. We are building on our track record from Project 1 where we engaged the community directly in many ways. This included: holding an [redacted], creating a [redacted] participating in mulitple events [redacted] working with [redacted] and [redacted], collaborating with [redacted]io, supporting [redacted], sponsoring [redacted] and [redacted], and fuding expansion of [redacted]

Figure 9-1: Images from Atlantic Shores' past stakeholder engagement activities in the State

Details on selected initiatives pursued as part [redacted] are provided in the following sections below for each stakeholder groups. Additional details on initiatives pursued with respect to environmental and fisheries protection as well as workforce development are provided in Chapters 8 - Economic development plan, 10 - Environmental protection plan and emission impact and 11 - Fisheries protection plan, respectively.

9.3.2 Engagement record per stakeholder group

9.3.2.1 Local and county elected officials

Atlantic Shores has engaged local and county elected officials, along with staff, across New Jersey, with particular focus on the [redacted] in the towns shown on the map in Figure 9-2.

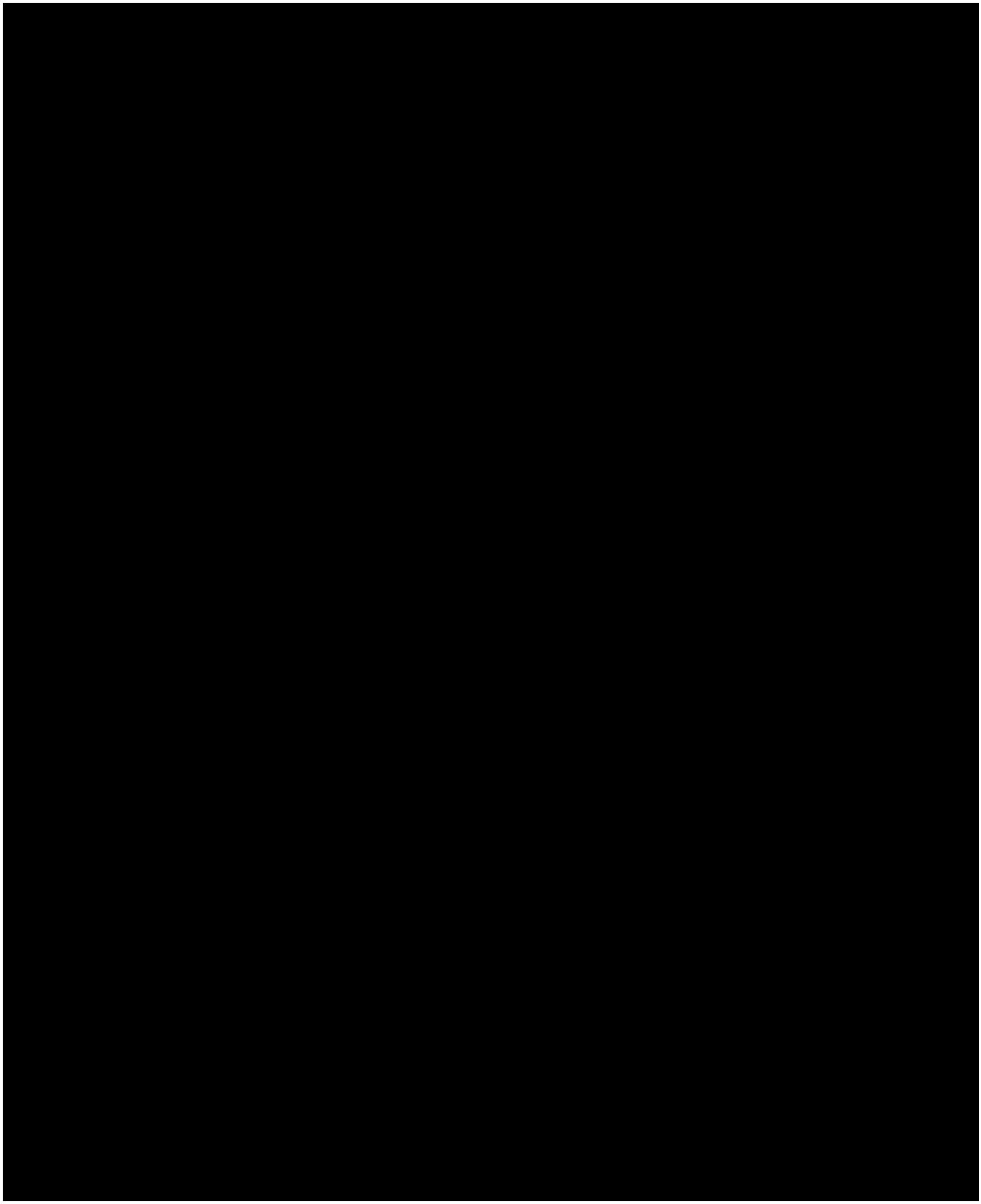


Figure 9-3: Atlantic Shores at
Atlantic Shores Community Liaisons at

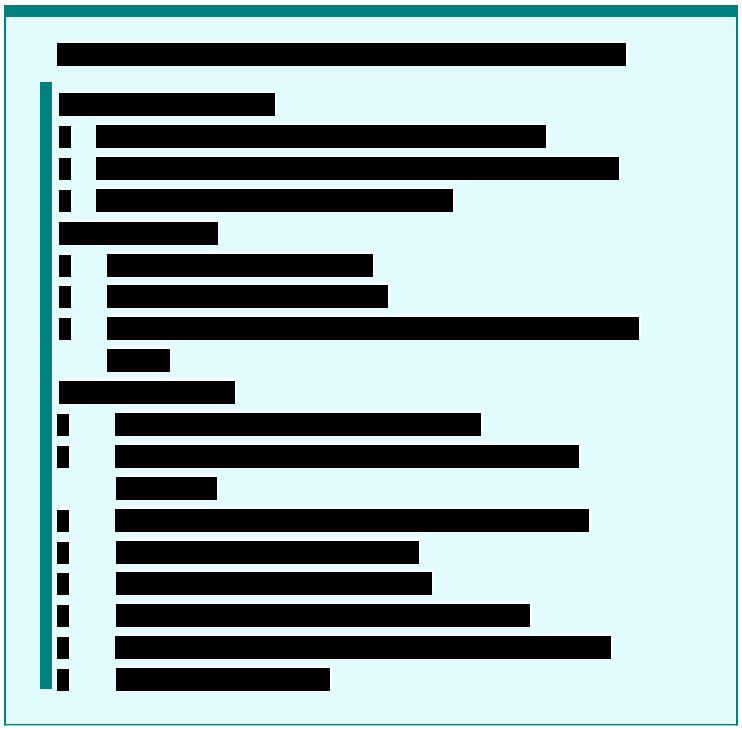
9.3.2.2 Federal and New Jersey state government entities

permit stipulations, Atlantic Shores has added value to both our projects and the public interest when engaging government

[redacted]

9.3.2.3 Community-based organizations

The success of New Jersey's ambitious offshore wind and renewable energy goals requires active engagement and backing by the public. Atlantic Shores has recognized that high-quality information and education programs for the community are essential to nurture public support for not just offshore wind and our [redacted], but also the entire nascent New Jersey renewable energy sector.



Community-based organizations (CBOs) can play a pivotal role in building support in our communities and addressing the lack of awareness and knowledge about this industry. Therefore, we have partnered with CBOs to create experiences that allow community members to learn more about offshore wind and the clean energy economy including but not limited to: Atlantic Shores presentations at community meetings, Sponsorship of community events, or simply taking time to answer questions from curious constituents. In our interactions with NJ residents, we have noticed an incredible appetite to learn more about our work and Project. As our Project matures, we will grow our strategic partnerships with CBOs notably across [redacted] and beyond to serve this desire, gain valuable local knowledge, build trust and enhance our reputation, as well as collect feedback that shapes the development and decision-making of our Project.

A specific example of partnership to reach the community is our productive working relationship with the [redacted]

Figure 9-4: Supporters and materials for offshore wind at our [redacted]

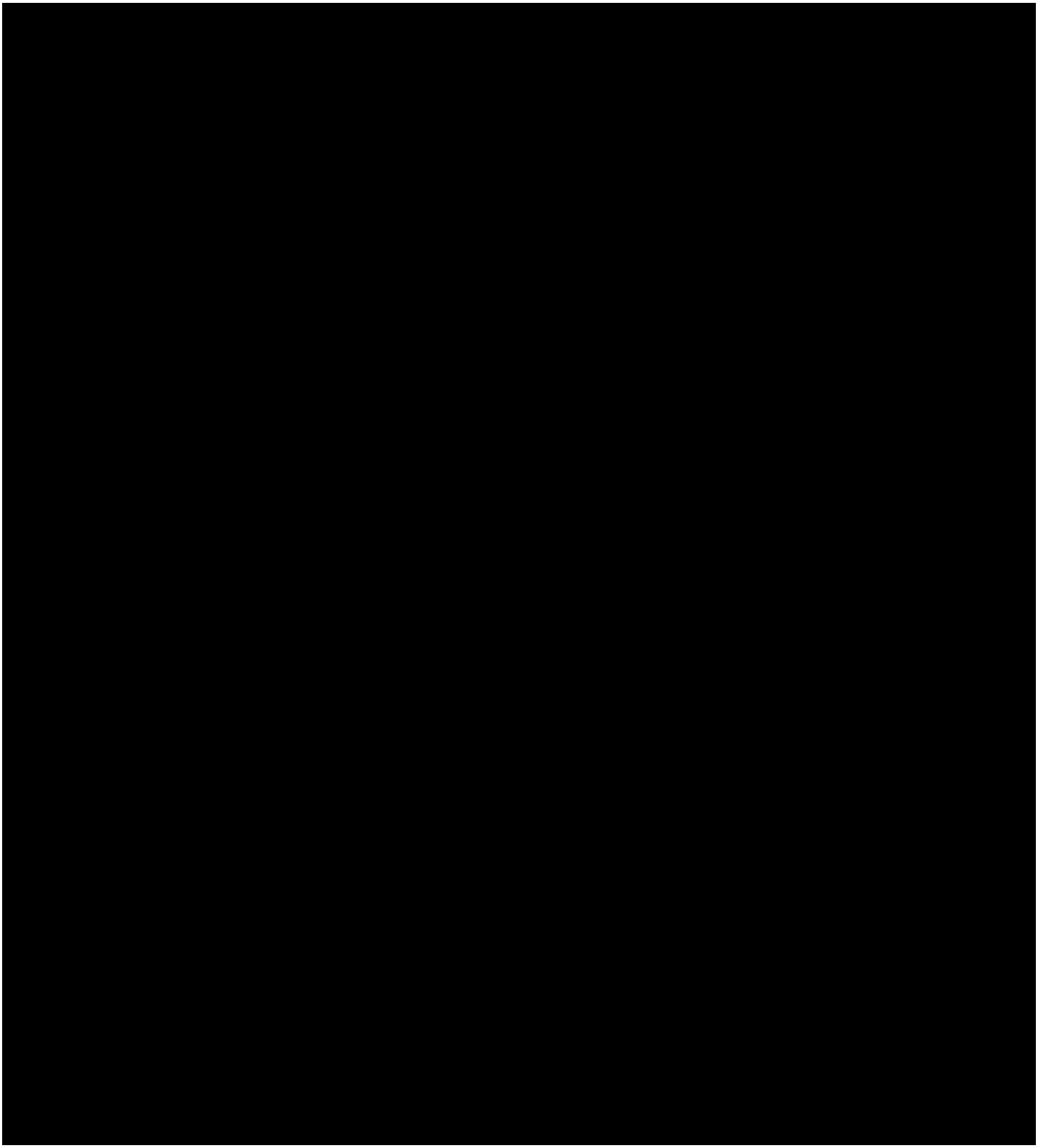


Figure 9-5: [redacted] Atlantic Shores with fellow judges and contestants at the [redacted]

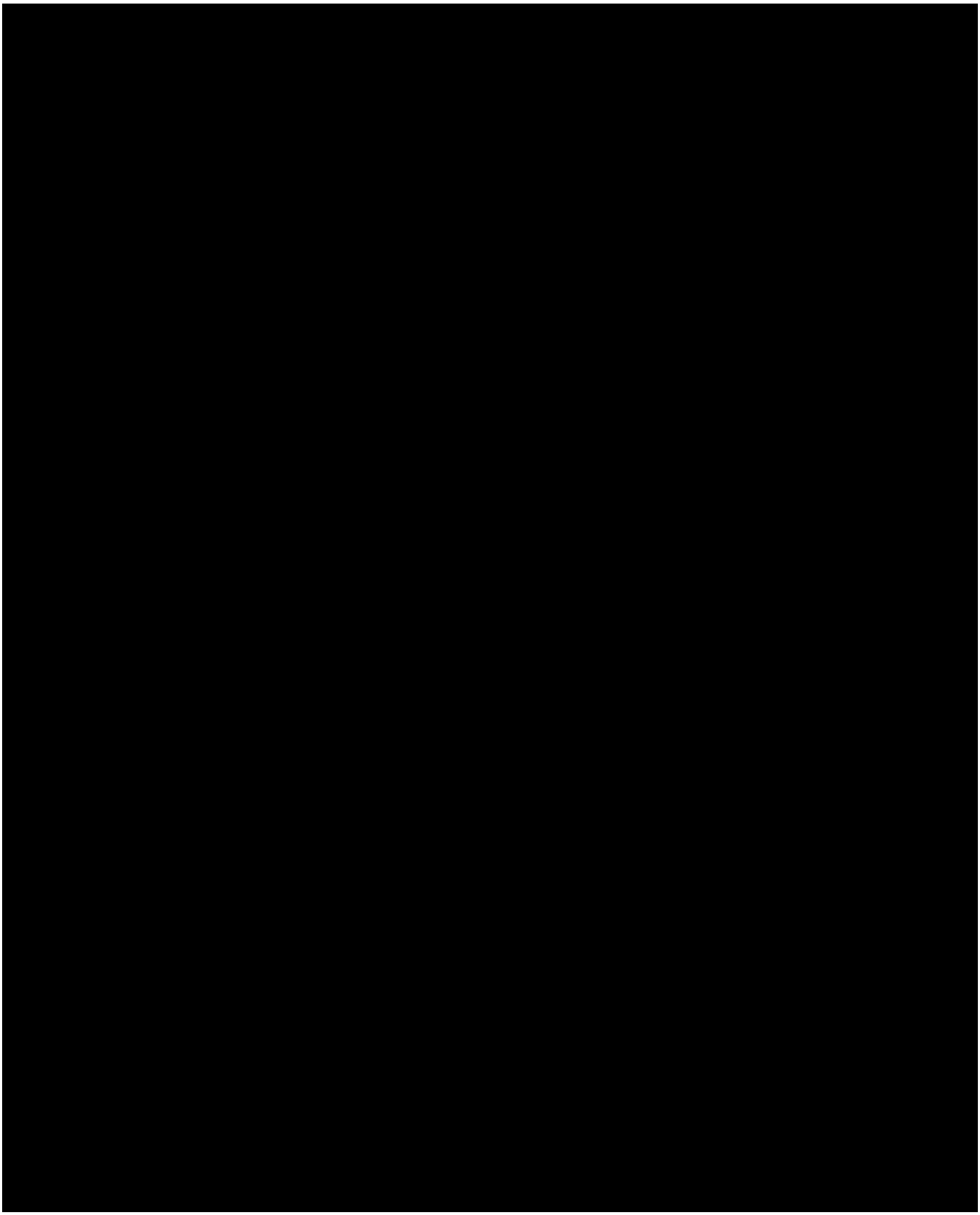
[redacted]

[redacted]

9.3.2.4 Coastal residents and business owners

Atlantic Shores is leading the clean energy transition in exciting and positive ways by supporting New Jersey's efforts to combat climate change. Our Project serves to enhance the resiliency of coastal communities and economies to the effects of extreme weather, climate hazards, and changing ocean conditions.

[redacted]



9.3.2.5 Environmental justice and overburdened communities

Atlantic Shores understands the imperative to consider environmental justice (EJ) with project development and is a vocal proponent for these efforts.

[redacted] Interconnection plan.

[redacted]

[redacted]

[redacted]

[redacted]

Figure 9-7: [redacted] leading a panel discussion "Environmental Justice: Offshore Wind, Onshore Impacts" at ACP Offshore WINDPOWER Conference (October 2022)

9.3.2.6 Recreational and commercial fisheries

Atlantic Shores has extensive relationships across the maritime industry and with ocean users. Maintaining these relationships and establishing trust between Atlantic Shores and marine users is a key priority for the lifetime of our Project. This includes all fisheries (commercial and recreational), business owners, and local communities with connections to fishing livelihoods.

[redacted]ce (RODA), and the New Jersey Marine Fisheries Council.

Atlantic Shores has assembled a dedicated Fisheries Communication Team comprised of Atlantic Shores management, a Fisheries Liaison Officer (FLO), a Recreational Fishing Industry Representatives (FIRs), and Fisheries Support Staff. We aim to lead as an example for responsible offshore wind development, true to our values *Be a good neighbor* and *Be a good steward to our environment*, and were the first developer to hire an FIR in 2020. Since then, we have added a Mobile Gear Fishing Representative to our team who works with the scallop industry. Our FLO and FIRs are fishermen themselves facilitating two-way communication and demonstrating our clear ambition for an open relationship with the fishing industry. [redacted]

Our goal is to support the preservation and ecological integrity of coastal waters so that these existing oceans users can thrive while we build and operate our offshore wind Project. The surfclam industry for instance has been forthright to us about their concerns regarding our developments. We have openly discussed means to co-exist with this stakeholder group and collaborate on research and science initiatives. [redacted]

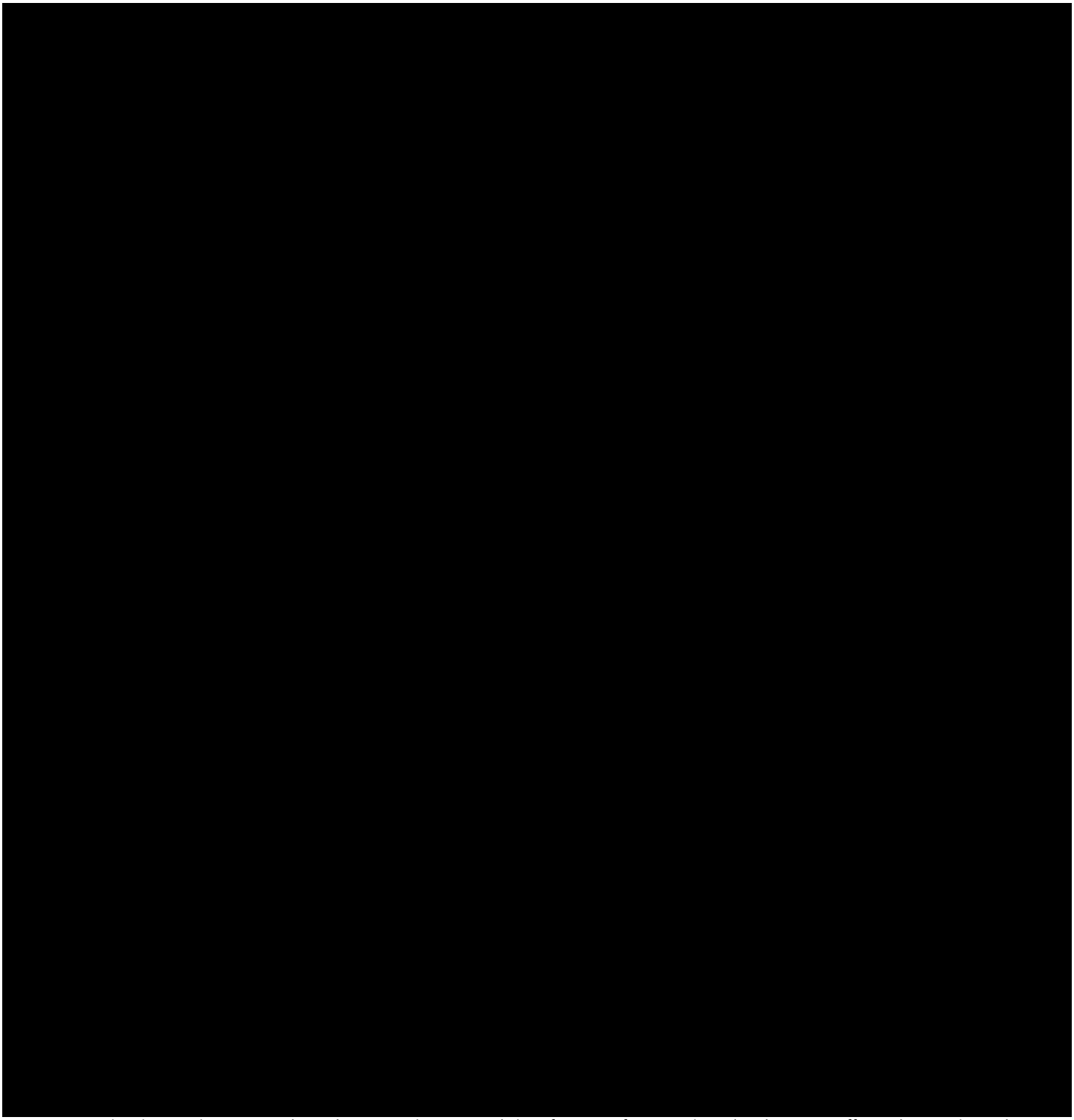
Our relationships with these groups, even at times were there is disagreement, have enabled deeper dialogue. As a recent example, our staff has provided information to [redacted] We have built mutual respect – even with groups that have opposed offshore wind.

9.3.2.7 Environmental non-governmental organizations (eNGOs)

As developer of New Jersey's largest clean energy projects, Atlantic Shores will be a major contributor to accelerating the clean energy transition, and we take pride in our efforts to raise awareness about our Project and the role renewable energy resources play in achieving the state's ambitious climate goals. While public education and outreach are essential elements

of our stakeholder outreach, being a safe and responsible operator in our project areas is our highest priority and we take this role seriously. Our projects are planned and delivered in conjunction with the highest standards of environmental protection, and we work closely with eNGOs to ensure that development activities are driven by robust protect and mitigation programs.

[redacted]



Fostering innovation, research, and community outreach is a feature of our project development efforts that we intend to expand on with the presented Stakeholder Engagement plan. Our strong, productive relationships with eNGOs and are a direct result of our contributions to the state-of-the-science and our ability to share timely, accurate, fact-based, substantive communications. These stakeholder engagement activities create value for eNGOs and our Project.

9.3.2.8 Economic and workforce development organizations

Atlantic Shores is building New Jersey's offshore wind project pipeline and making transformational infrastructure investments across the region. Atlantic Shores Project 1 alone will bring $848 million in guaranteed local economic benefits and have an overall economic impact of $1.9 billion for New Jersey. In Atlantic County at the Port of Paulsboro and the NJWP, as well as across the State, we are creating a new domestic supply chain that will generate tens of thousands of family-sustaining jobs, revitalize port communities, and serve as an engine for the clean energy economy for decades to come. [redacted] The rapidly growing local supply chain requires a developed, skilled workforce to establish a durable, thriving, full-scale offshore wind industry in New Jersey.

Atlantic Shores is committed to leading the charge and actively engages with economic and workforce development organizations as a member, sponsor, speaker, and trusted partner. Our strategic partners at these groups play a critical role in helping us reach local communities and educate people about employment and business development opportunities (see Chapter 8 - Economic development plan). Atlantic Shores' aim for the collaboration with trusted validators is to conduct marketing, outreach, recruitment, training, credentialing, upskilling, and job placements activities for our Project and supply chain partners.

We intend to coordinate extensive training programs with community colleges and workforce development groups that sufficiently equip participants with the necessary knowledge and skills to charter their career in the growing New Jersey clean energy economy. [redacted]

[redacted]

Figure 9-8: Team member [redacted] speaking to students at [redacted] this past spring.

9.3.2.9 Labor unions

Engaging with unions is important for offshore wind developers to access skilled labor, establish fair labor agreements and foster positive community relations. Atlantic Shores in particular aims to create sustainable jobs, grow the sector-based knowledge and expertise required to safely and responsibly develop offshore wind, increase overall participation in New Jersey's thriving clean energy economy. This also includes encouraging non-traditional students to enter this new industry. As a result of our efforts to date in this respect, we enjoy a strong and productive relationship with organized labor groups in New Jersey.

In addition to our Project partners, [redacted]

Our Labor MOU for Atlantic Shores Project 1 (see Appendix 8-5) is one of the strongest commitments to date by a United States offshore wind developer to train local residents and tradespeople and use local union labor and employers wherever possible. It has formed the template for our future efforts as we are seeking to expand on the commitment of this MOU. New Jersey is poised to be a national leader in green economy job creation, and corporate partnerships like this are the gateway to this vision. Our efforts in this respect are described in more detail in Chapter 8 - Economic development plan.

[redacted]

9.3.2.10 Higher education

Atlantic Shores understands the critical role institutions of higher learning play in advancing offshore wind research, development, and workforce training. Building on the success of earlier bid initiatives, our Project [redacted]

[redacted]

[redacted]

[redacted]. We leverage the best-in-class expertise of these institutions to inform our environmental survey campaigns and ensure scientifically rigorous resource assessments of our Project Area. These activities include data-sharing efforts with our partners to advance a better understanding of the State's environmental resources. Our work in this respect serves as the foundation to build trust with

the local community, broaden public support for our projects and counter misinformation regarding offshore wind development.

[redacted]

Figure 9-10: [redacted]

- [redacted]

Meet our interns at the Stockton ECO center

"Currently, I'm working on making an informational poster for the ECO center, and planned an event with Stockton sustainability students to showcase the ECO center and the internship program. I have had an amazing experience working with Atlantic Shores and have learned so much about the field of sustainability. I love being able to work towards a better future with a company that is so passionate for their cause."

[redacted]

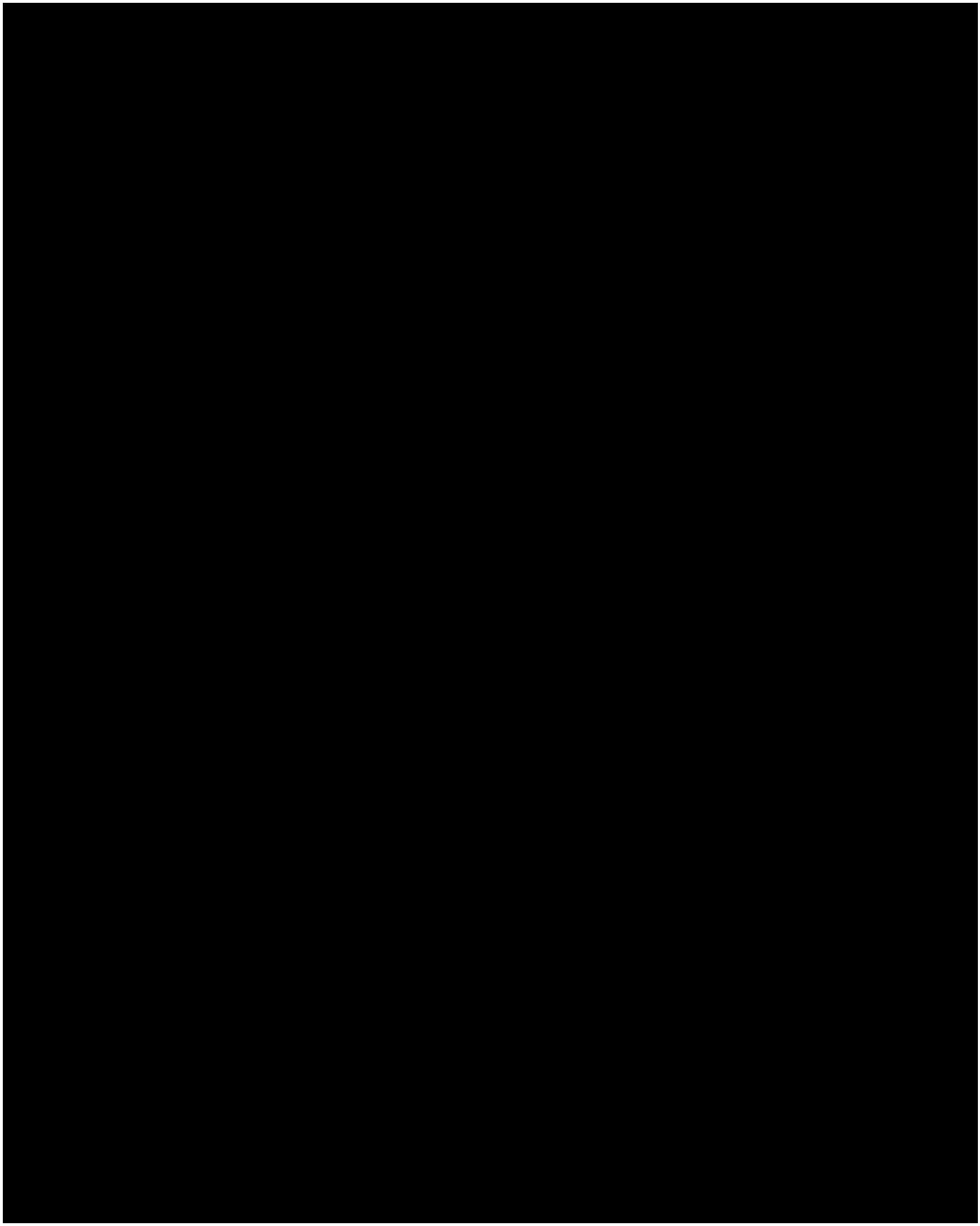
"I've been enjoying my experience with Atlantic Shores, every moment so far has been a learning experience that I am grateful for (…)The people I've worked with are always available for questions and happy to provide me with resources and guidance on the renewable energy space. This summer, I supported an OffshoreWind4Kids event, where I learned how to provide a hands-on STEM learning experience to various age groups. When I complete my degree I would like to be a high school science teacher, so it was valuable to experience how much learning and excitement is generated from facilitating these activities."

[redacted]

[redacted]

Figure 9-11: Atlantic Shores' team members present at the [redacted]

[redacted]



9.3.2.11 Small, Minority, Woman, or Veteran-owned Business Enterprise

We seek suppliers who consistently align with our values and uphold standards of diversity, equity, and inclusion. As a result, engaging with small, minority, woman, and veteran owned business enterprises (SMWVBEs) has been a cornerstone of our outreach in New Jersey since we acquired our lease.

Diversity at Atlantic Shores: Diversity is a strength. At Atlantic Shores, we are proud our workforce composition represents a broad spectrum of purpose-driven professionals and lived experiences. We aspire to lead the offshore wind industry by example, with women making up half our executive team, significant numbers of black, indigenous, and people of color (BIPOC) serving in emerging leadership roles, and [redacted] of all employees actively participating on our Diversity, Equity, and Inclusion (DEI) Team.

[redacted]

Recently, Atlantic Shores was presented the Corporate Award (Figure 9-12) which is given to businesses that meet the particular needs of its female employees and their families, provide critical services to women, girls or families, or make meaningful efforts to improve the gender diversity of its workforce.

Figure 9-12: [redacted] accepting the Corporate Award at the Women's Political Caucus of New Jersey (March 2023)

[redacted]

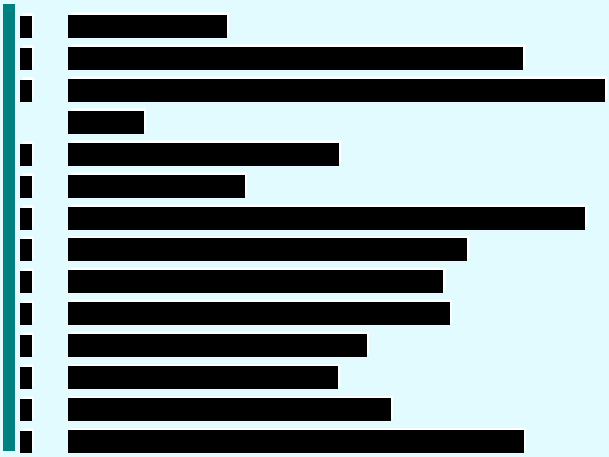
[redacted]

9.3.2.12 Tribal affairs

Atlantic Shores is committed to open and transparent communication with Native American Tribes. While our engagement with the federally recognized Native American Tribes is required, Atlantic Shores goes beyond requirements and also engages state-recognized tribes as part of our project planning. We believe in developing relationships with

these sovereign nations and advocate for their involvement in the development of our projects, the clean energy transition in general and in the economic growth that our projects bring.

Key stakeholders: federally recognized tribes



[redacted]

Our approach to Tribal relations involves understanding their histories, respecting their sovereignty, their customs and traditions, and being aware of any cultural sensitivities. We have been using multiple channels and touchpoints with government leaders and community members to maximize our opportunities to work in coordination and consultation with tribes. This includes annual meetings Atlantic Shores has been conducting with tribal and indigenous people representatives since initiating offshore surveys in 2019. More recently, we participated in meetings with tribal leadership and offshore wind developers convened by BOEM to address local and regional matters related to our projects.

[redacted]

9.3.3 Stakeholder partners support

Our early, continuous and targeted engagement of the multiple stakeholder groups identified above, is bearing fruit every day, enabling us to develop our Portfolio in compliance with our values, and to globally support the development of offshore wind in New Jersey, and in the US. Our approach to stakeholder engagement builds on the successes of our previous engagement efforts to update, refresh, and refine the existing Stakeholder Engagement Plan and strengthen our alignment with the New Jersey Energy Master Plan. [redacted]

Table 9-3: Overview of MOUs, LOS and proposals from stakeholder partners

[redacted]

9.4 Stakeholder engagement plan

As described earlier, our team has been on the ground since 2018 to engage with the identified stakeholders in Section 9.3. Over the past years, we have continuously reached out, hosted meetings as well as coordinated activities and initiatives targeting these key groups. These interactions have been the result of a solid Stakeholder Engagement Plan. These prior engagements as well as feedback from Project 1 have served as invaluable input to enhance our strategic communications and community outreach activities to address our stakeholders' needs and concerns for [redacted]

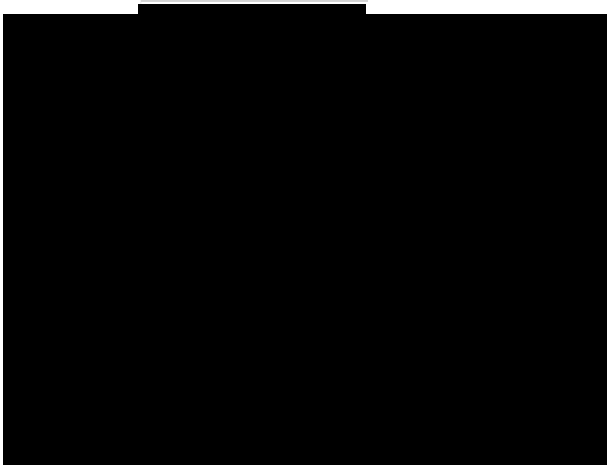
9.4.1 Engagement tools

Atlantic Shores has developed and implemented a wide array of stakeholder engagement tools to work with interested parties in a two-way dialogue, to educate the community about offshore wind and our Project, and to provide opportunities for people and organizations to connect and partner with us.

The following summary highlights our key stakeholder engagement tools:

- **Community events:** Every month, Atlantic Shores hosts and/or participates in several live, hybrid, and virtual events and interactive meetings to deliver stakeholder communications and project information through easily accessible locations and convenient digital and print mediums. Atlantic Shores works with civic, business, community, workforce, education, environment, and political organizations on programming, presentations, panel discussions, workshops, and conferences to educate and update community members about our Project. Atlantic Shores has hosted and sponsored events including but not limited to:
    - 48 Blocks Arts Festival in Atlantic City
    - Atlantic City Latino Festival
    - Atlantic Cape Community College's Annual Restaurant Gala
    - Stockton University Community Day
    - ACUA Earth Day Festival
    - In addition to being in the community, Atlantic Shores also hosts community events at our ECO Center on the Atlantic City Boardwalk at Stockton University
- **Education and Community Outreach (ECO) Center –** Beyond the [redacted] Atlantic Shores continues to invest in our ECO Center as a community hub with our strategic partner and landlord Stockton University Atlantic City. Opened in 2020 as anchor tenant of the brand-new campus residence hall, the ECO Center has become a place-maker and destination on the world-famous Atlantic City Boardwalk. Throughout the year we host open houses and informational events on regular cadence for the public about our projects, the offshore wind industry, and climate science. The ECO Center's strategic location on the Atlantic City Boardwalk allows us to host community programs and hands-on learning activities including [redacted]. We will also continue using the ECO Center for teaching and training opportunities, including the launch of our [redacted] program, which expanded our outreach capacity and allows more frequent information sessions. A recent highlight included having our [redacted] together this July.

Figure 9-13: Our interns at Stockton ECO center



- **Supplier forums, supplier training and supplier days** [redacted] As part of these series of events, Atlantic Shores will provide funding to encourage and increase SMWVBE participation. Atlantic Shores will also host supplier events at our ECO Center to target local minority contractors and suppliers, with a focus on sharing opportunities with New Jersey-based businesses to work with prime contractors and larger organizations.
- **Job fairs and career exploration panels:** Atlantic Shores participates in numerous annual job fairs and career exploration panels including co-hosting the [redacted]
- **OBC Industry Networking Events:** [redacted]
- **Recent signature events with strategic partners:**

[redacted]

Figure 9-14: [redacted] *speak to high school students about career paths in offshore wind (top left), Drone demo on the boardwalk outside the ECO Center with the Atlantic City Fire Department (top right), Atlantic Shores'* [redacted]

[redacted]

- **Project website:** Sharing clear, reliable information across communication channel partners is essential to our success. The Atlantic Shores website was recently refreshed to provide a richer, more intuitive user experience aimed at reaching people where they are. Atlantic Shores aspires to reach and create brand awareness among passive supporters and neutral acceptors of offshore wind, with particular focus on communities who desire and require more information but may not be able to attend a meeting. The Atlantic Shores website includes easy-to-find and easy-to-understand facts, figures, and details on project progress, project timelines, frequently asked questions, and dedicated pages for mariners, ocean users, and supply chain partners. Atlantic Shores intends to expand and enhance its strategic communications on the website with the addition of concise, 1-page topic documents that include data visualization and infographics addressing a number of audiences including but not limited to: Tribal Nations, Community-Based Organizations, Local and County Elected Officials, Recreational and Commercial Fisheries, Non-Fisheries Ocean Users, Labor Unions, Higher Education, Coastal Residents, Coastal Business Owners, Economic Development Organizations, Workforce Development Organizations, Environmental Advocacy and Environmental Justice Groups, Overburdened Communities (OBCs). The website also contains contact information for key project personnel, regular calls to action in support of the clean energy economy, and the ability to submit questions, comments, and/or concerns.

- **Weekly vessel bulletin:** Being a safe and responsible operator working on the water is our highest priority, and Atlantic Shores is proud to be transparent and straightforward regarding our survey and site assessment work. Atlantic Shores publishes a weekly mariners newsletter that provides detailed look-ahead information regarding all geoscience activities in our lease areas, and as we transition into construction activities, the vessel bulletins will be enhanced and expanded to include more detailed information. We want other vessel owner and operators to know where our boats are working at all times.

- **Quarterly newsletter:** Atlantic Shores publishes a quarterly newsletter that documents development updates, stakeholder engagement activities and feedback received, and promotes upcoming events. Our newsletter currently goes out to over 2,200 stakeholders and represents another communication channel for information sharing, feedback, and transparency.

- **Social media:** Atlantic Shores launched social media platforms in June 2020 to reach as broad of an audience as possible, investing significant time and resources in social media platforms to share and signal boost educational videos, project updates, and to uplift or join conversations regarding offshore wind. We continue to build our online community via social media through key strategies including creating content around employee profiles, human-interest stories, industry trends, careers in the offshore wind industry, and high-profile event sponsorships such as

New Jersey League of Municipalities annual; New Jersey League of Conservation Gala; Chamber of Commerce Southern New Jersey's 150th Luncheon with Governor Murphy; encourage online and offline participation from community members and work with our CLOs to coordinate cross-promotional opportunities with elected officials, environmental groups, community-based organizations, local merchants and small business owners, industry associations, and a wide range of civic groups for deeper and more meaningful conversations. Our social media presence includes Linkedin, Facebook, Instagram, and Twitter. For Facebook we have 1,132 followers and the page has grown by 48 likes in the last year. For Instagram, we have 414 followers with a 114 added in the last year. LinkedIn, the platform we focus on most, has 8,365 followers with 3,730 follower growth in the last year, and 23.43% increase in follower growth on LinkedIn in the past six months from June 2023.

- **Information sessions / open houses:** Open houses and informational sessions are an effective means of introducing the Atlantic Shores team and Project to a wide array of audiences. We've hosted three virtual open houses related to several topics including our Project 1 visibility impacts study, our Executive Team, and other important topics. Emerging from COVID-19 restrictions in 2022, we began to engage our stakeholders more in person. Some in-person information session examples include the one at the Brigantine Community Center, hosted by Mayor Vince Sera in December 2022; an end-of-the-year offshore wind pizza party session at the ECO Center for Stockton students; and a supplier information session at Rowan University in May 2023. https://www.atlanticshoreswind.com/open-houses/

- **Polling and focus groups:** Atlantic Shores conducts public opinion polling focus groups to learn more about the diverse opinions of New Jersey's communities regarding offshore wind projects. Atlantic Shores will consider doing additional polling and focus groups throughout project development to stay abreast of community/stakeholder sentiments towards offshore wind and our projects. [redacted]

- [redacted]ng. As Atlantic Shores was the first developer to use their technology for stakeholder engagement, they adapted their workforce training programs to suit our outreach needs and are now offering these services to others.

- **Paid media investments:** Atlantic Shores has made substantial paid media investments to counter misinformation in New Jersey and raise awareness of the economic and environmental benefits of offshore wind. Through our partnership with the New Jersey Wind Works coalition and the American Clean Power Association (ACP), Atlantic Shores recently helped launch multiple advertising campaigns running in target markets across New Jersey that will run through the end of 2023.

- **Paid canvassing:** Atlantic Shores supports paid canvassing through the New Jersey Wind Works coalition and supports a robust visibility program to combat misinformation and increase support for offshore wind across coastal communities.

- **Grassroots advocacy and outreach:** Atlantic Shores also supports grassroots advocacy and outreach to activate supporters and bring back prior supporters that may have been influenced by the whale misinformation campaign. For example, we have worked with the [redacted] to share the facts about offshore wind.

- **Targeted stakeholder meetings and presentations** Atlantic Shores creates custom content and marketing materials to share with special interest groups at in-person and virtual convenings.

- **CRM | Stakeholder relationship management and tracking:** Atlantic Shores collects stakeholder contact information through our website and community events to share project updates. We are in the process of building out a custom CRM solution to further facilitate project marketing and stakeholder engagement.

- **Data collection and management | Value creation for all ocean users:** In the same spirit Atlantic Shores works with the Mid-Atlantic Regional Association Coastal Ocean Observing System (MARACOOS) and the [redacted] to share atmospheric and ecological data collected from all of our lease areas. We also share research with eNGOs through the New Jersey Wind Works coalition. This includes our red knot migration data, wind and ocean data as well as geophysical data.

9.4.2 Management of engagement outputs and feedback loops

Our stakeholder engagement strategy contains effective mechanisms for capturing and documenting stakeholder feedback to ensure the results or outcomes of each interaction can be incorporated into our project development efforts going forward. We have standardized practices to manage stakeholder engagement outputs and to build feedback loops into our going stakeholder communication and outreach activities. Representative examples of these standard practices include:

During engagement activities:

- Take notes at engagement activities in a way that is visible to participants and demonstrates active listening.
- Make use of a detailed sign-in sheet and/or engagement evaluation tool during activities.

After engagement activities:

- No matter the activity, we follow up to briefly recap the meeting, acknowledge all stakeholder questions, and provide answers to those questions. For those inquiries not answered, Atlantic Shores provides a clear reason as to why the question is not relevant or cannot currently be answered.
- For invite-only meetings, a follow up email is sent within 2-3 business days; for larger, open-invite meetings, follow up is sent or posted within 1-2 weeks.
- Follow-up from closed meetings includes concrete action items for both parties, and when appropriate, are the beginning of more in-depth relationships.
- Follow up directly with elected and/or appointed officials and other key stakeholders.
- When appropriate, we distribute photo or video content via digital channels tagging the groups in attendance.

Atlantic Shores is proud of not just saying the right things about community and stakeholder engagement, but on executing them. This dedication is not performative; it is who we are. We are honored to deliver our Portfolio of projects and work every day to build on that success, demonstrating our evergreen commitment to the Garden State.

10 Environmental protection plan and emission impact

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Solicitation requirements

Table 10-1 describes the Solicitation requirements of this chapter as put forth in the SGD, as well as the relevant sections addressing these requirements.

Table 10-1: Environmental protection plan and emissions impacts - references for Solicitation requirements

Key Solicitation requirements	Application reference
Analysis of the anticipated environmental benefits and environmental impacts of the Project (N.J.A.C. 14:8-6.5(a)(11)(xiv))	Appendix 10-1
A scientifically rigorous description of all associated environmental impacts from preconstruction activities through decommissioning including, but not limited to, environmental, water use, water quality, avian, marine mammals, sea turtle, noise, aesthetics, tourism, navigation, endangered species, sea-bed disruption of marine life, morbidity or mortality among avian, mammal or benthic populations, emissions of combustion byproducts to the air or oil or other toxic releases to the ocean, or solid waste generation (N.J.A.C. 14:8-6.5(a)(11)(xiv)(1))	Section 10.4 / Appendix 10-1
The anticipated CO2 emissions impact of the Project (N.J.A.C. 14:8-6.5(a)(8)) (Must be consistent with data provided in the Application Form.)	Appendices 10-1 and 10-11
Provide information regarding the direct emissions impacts of the Project, including CO2, SO2, and particulate matter ("PM2.5"), as well as other relevant environmental impacts, such as impacts on the marine environment (N.J.A.C. 14:8-6.5(a)(11)(xiv)(3)) (This information shall encompass the development, construction, operation, and decommissioning of the Project, and be consistent with the emissions impacts reported in the Application Form, including a full accounting of emissions produced from vehicles, vessels, and machinery.)	Appendices 10-1 and 10-11
Provide an assessment of environmental impacts from the Project compared to other similar Class I renewable energy projects (N.J.A.C. 14:8-6.5(a)(11)(xiv)(4))	Appendix 10-1
Environmental impacts (direct and comparative) must be quantified to the extent that they are significant and it is possible to quantify them (N.J.A.C. 14:8-6.5(a)(11)(xiv)(5))	Appendix 10-1

The comparative environmental impacts shall be monetized, to the extent possible, for evaluation as part of the overall cost-benefit analysis (see Section 3.17) (N.J.A.C. 14:8-6.5(a)(11)(xiv)(6))	
A scientifically rigorous description of associated environmental impacts from pre-construction activities through decommissioning, on bats, commercially important finfish and shellfish, aquatic invertebrates, seagrass beds, wetlands, and other sensitive habitats (N.J.A.C. 14:8-6.5(a)(16))	Section 10.4 / Appendix 10-1
Maps that identify the locations of sensitive marine, coastal, and terrestrial habitats that are within or in the vicinity of the entire Project footprint (including offshore and onshore cable routes and the entire onshore footprint), including but not limited to: freshwater wetlands, tidelands, Special Areas as defined by N.J.A.C 7:7-9 (including shellfish habitat, surf clam areas, prime fishing areas, finfish migratory pathways, submerged aquatic vegetation, shipwreck and artificial reef habitats, and endangered or threatened wildlife or plant species habitats), Natural Heritage Priority Areas, Habitat Areas of Particular Concern, Essential Fish Habitat, sand borrow areas, commercial fisheries management areas and reserves, estuary reserves, classification of areas under the jurisdiction of the Pinelands Commission, Green Acres encumbrances, and OBCs (Applicants should obtain New Jersey-specific data sets from NJDEP GIS Open Data (https://gisdatanjdep.opendata.arcgis.com/). Applicants should obtain data sets for federal waters from Marine Cadastre (https://marinecadastre.gov/) and the National Oceanic and Atmospheric Administration's NOAA Fisheries website (https://www.fisheries.noaa.gov/).) (N.J.A.C. 14:8-6.5(a)(16))	Appendices 10-6, 10-7, 10-8, 10-12, 10-13 and 10-14
Information regarding the Project's direct emissions of NOx during the development, construction, operation, and decommissioning of the Project that is consistent with the emissions impacts reported in the Application Form, including a full accounting of emissions produced from vehicles, vessels, and machinery (N.J.A.C. 14:8-6.5(a)(16))	Appendix 10-1 and 10-11
A description of the baseline and monitoring data that the Applicant intends to collect from preconstruction through decommissioning regarding the spatial and temporal presence of marine mammals, sea turtles, and avian species (N.J.A.C. 14:8-6.5(a)(16))	Section 10.2
A description of how the Applicant plans to make the baseline and monitoring data available to NJDEP and other designated parties consistent with the Data Management and Availability Plan requirements in Attachment 7 herein (N.J.A.C. 14:8-6.5(a)(16))	Section 10.5.2 / Appendix 10-2
A description of any commitments to fund research related to the assessment and avoidance of environmental impacts, including impacts to marine wildlife, in addition to the required fee described in the introduction to this section (N.J.A.C. 14:8-6.5(a)(16))	Section 10.6
A description of the considerations related to identifying the cumulative impacts of New Jersey's offshore wind development plans as well as interactive impacts with offshore wind development plans in neighboring states (N.J.A.C. 14:8-6.5(a)(16))	Appendix 10-1
A description of how the Applicant will identify (or has identified) environmental stakeholders, any outreach that has occurred to date, and how the Applicant proposes to communicate with those stakeholders during pre-construction activities through decommissioning, as well as a plan for transparent reporting of how stakeholders' concerns were addressed (N.J.A.C. 14:8-6.5(a)(16))	Section 10.3
A description of lighting controls for the Project, consistent with the requirements in Attachment 6 herein (N.J.A.C. 14:8-6.5(a)(16))	Appendix 10-1

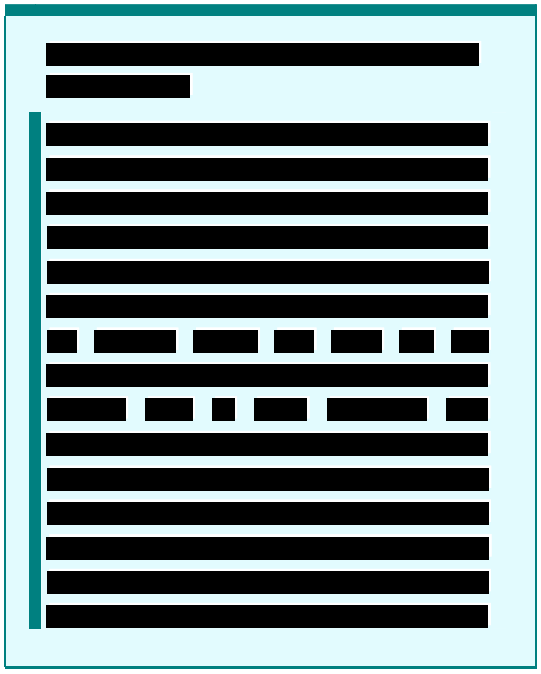
A description of the expected impact of noise during the development, construction, operation and decommissioning of the Project, on marine life and on onshore communities (N.J.A.C. 14:8-6.5(a)(16))	Appendix 10-1
A description of how onshore elements of the Project will be compatible with surrounding land use and communities, and will safeguard environmentally and culturally sensitive areas (N.J.A.C. 14:8-6.5(a)(16))	Appendix 10-1
A description of the potential impact of the Project on OBCs, as defined in New Jersey's Environmental Justice Law N.J.S.A.13:1D-157 (N.J.A.C. 14:8-6.5(a)(16))	Section 10.4.2 / Appendix 10-1
If impacts to an OBC are anticipated during or after construction, including, but not limited to, increased noise, dust, impervious surface, truck traffic, or loss of tree canopy or open space, the Applicant shall (1) include a community engagement plan specific to the impacted OBC, as part of the required content described in Section 3.9 and (2) identify local government entities and relevant stakeholders or community-based organizations, and propose control measures to avoid, minimize, or otherwise offset those impacts (If awarded, a Qualified Project shall implement a community engagement plan specific to the impacted OBC and appropriate control measures approved by NJDEP.) (N.J.A.C. 14:8-6.5(a)(16))	Section 10.3 / Appendix 10-1
A description of how the direct and avoided emissions of the Project, as reported in the Application Form, were calculated, including all assumptions used in preparing estimates of direct and avoided emissions (N.J.A.C. 14:8-6.5(a)(16))	Appendices 10-1 and 10-11
A description of any innovative measures that will be employed to minimize embodied carbon, that is, carbon and other greenhouse gas emissions associated with the manufacture, transportation, installation, maintenance, and disposal of materials comprising the Project (N.J.A.C. 14:8-6.5(a)(16))	Appendix 10-1
A description of how the Applicant plans to avoid, minimize, and/or mitigate any releases of oil, particulate matter, or hazardous materials that may arise during the development, construction, operation, or decommissioning of the Project (N.J.A.C. 14:8-6.5(a)(16))	Appendix 10-1
A visibility study that presents visual simulations of the Project from the nearest coastline point, including, at a minimum, clear, partly cloudy, and overcast conditions during early morning, midafternoon, and late day, as well as one simulation at night with the turbines lit under clear conditions, for both summer and winter (N.J.A.C. 14:8-6.5(a)(16))	Appendices 10-1 and 10-9
(Described in Attachment 6 - Habitat Avoidance, Minimization, and Mitigation) The Qualified Project shall collaborate with state regulatory authorities and key stakeholders to collect data to adequately identify and characterize terrestrial and marine environments. Qualified Projects should avoid locating facilities near known sensitive seafloor habitats, such as artificial reefs and other prime fishing areas, submerged aquatic vegetation, shellfish areas, and aquaculture leases. Qualified Projects should avoid anchoring on sensitive seafloor habitats. Qualified Projects should avoid hard-bottom habitats, where practicable, and should restore to their original state, if possible, and remedy any damage to these communities. Qualified Projects should implement turbidity reduction measures to minimize effects to hardbottom habitats and including seagrass communities. Qualified Projects should minimize effects to seagrass by limiting vessels related to project planning, construction, and operation to established traffic routes. Qualified Projects should minimize impacts to wetlands by maintaining buffers around wetlands, implementing BMPs from erosion and sediment control, and maintaining natural surface drainage patterns.	Sections 10.2 and 10.4 / Appendix 10-1

(Described in Attachment 6 - Cable Installation, Burial, and Maintenance) To minimize the risk of exposure and entanglement, cables shall be buried to a minimum depth of 2 meters. A shallower cable burial depth may be acceptable if a Cable Burial Risk Assessment (CBRA) (https://www.carbontrust.com/our-work-and-impact/guides-reports-and-tools/cable-burial-risk-assessment-cbra-guidance-and) supports a burial depth less than 2 meters. If a cable cannot be buried due to resistant substrate, presence of unexploded ordinance, or crossing of a telecommunications cable, the developer shall add protective materials over the cable that minimize risk of gear entanglement. The developer shall conduct routine surveys or inspections of sub-sea cables as well as inspections following hurricane or other major events causing disturbance to the seabed. If the surveys or inspections reveal cable damage or exposure, the developer shall mitigate the issue and restore cable burial to the standards outlined here. Cable installation and cable maintenance and repair buffer areas shall avoid shipwreck and artificial reef habitats as per N.J.A.C. 7:7-9.13. Siting of export cables should avoid submerged vegetation habitat as per N.J.A.C 7:7-9.6.	Appendix 10-1
(Described in Attachment 6 - Turbine Foundation Scour) Qualified Projects should reduce scouring action by ocean currents around foundations and to seafloor topography by taking all commercially reasonable measures and should employ periodic routine inspections to ensure structural integrity. Qualified Projects should assess the use of ecological enhancements for turbine scour protection to provide offsets from potential adverse impacts. Qualified Projects should consider the biological performance of scour and concrete block mattress materials in design of the turbine foundations.	Appendix 10-1
(Described in Attachment 6 - Lighting Controls) Qualified Projects shall comply with Federal Aviation Administration and United States Coast Guard requirements for lighting in accordance with BOEM's "Guidelines for Lighting and Marking of Structures Supporting Renewable Energy Development" and should use light technology that minimizes impacts on avian species (See BOEM, Guidelines for Lighting and Marking of Structures Supporting Renewable Energy Development (April 28, 2011), https://www.boem.gov/sites/default/files/documents/renewable-energy/2021-Lighting-and-Marking- Guidelines.pdf.). Artificial lighting on offshore wind projects shall be reduced to the extent practicable while maintaining human safety and compliance with FAA, U.S. Coast Guard, BOEM, and other regulations.	Appendix 10-1
(Described in Attachment 6 - Avian and Bat Resources) Qualified Projects should evaluate avian and bat use of the Project area and should design the Project to minimize or mitigate the potential for bird and bat strikes and habitat loss. Permanent physical deterrents to perching shall be implemented if there is demonstrated risk at the site (e.g., perching and roosting on infrastructure is a common occurrence) and to the extent that they do not represent a human safety hazard. Siting and construction of nearshore and onshore project components shall be conducted in such a way as to avoid impacts to known nesting beaches of sensitive species during the breeding season, and to minimize the loss or alteration of bird and bat habitat, as well as avoid or minimize disturbance and direct and indirect effects to bird and bat populations and their prey. Nesting beaches, particularly known breeding habitat for listed species, will be subject to timing restrictions for work done during the breeding season (typically March 1st to August 31st).	Appendix 10-1

Onshore infrastructure and development activities should: 1) maximize the use of previously developed or disturbed areas, and 2) avoid unique or protected habitats, as well as habitat for key species, where feasible.	
(Described in Attachment 6 - Noise and Acoustic Impacts) Qualified Projects shall plan site characterization surveys by using the lowest sound levels practicable to obtain the information needed. Qualified Projects shall take efforts to minimize disruption and disturbance to marine life from sound emissions, such as pile driving, during construction activities. Qualified Projects should employ, to the extent practicable, state-of-the-art technologies to minimize operational sound effects, as reviewed and approved by jurisdictional authorities. Qualified Projects shall not commence activities that generate significant noise, including geophysical survey work and impact pile driving, during poor visibility conditions such as darkness, fog and heavy rain, unless an alternative mitigation monitoring plan that does not rely on visual observation has been determined to be effective, to the extent compatible with practicality and worker safety. Qualified Projects should consider the potential for sonic testing to affect fish behavior and the potential impact to fishing. Qualified Projects are encouraged to undertake innovative methods to minimize sonic and acoustic impacts during construction and operation of the Project.	Appendix 10-1
(Described in Attachment 6 - Marine Mammals and Sea Turtles – Vessel Strikes) All activities are subject to the permitting requirements of the US Marine Mammal Protection Act (Marine Mammal Protection Act of 1972, 92 P.L. 522, 86 Stat. 1027 (enacted October 21, 1972).) and the US Endangered Species Act (Endangered Species Act of 1973, 93 P.L. 205, 87 Stat.884 (enacted December 28, 1973).). Qualified Projects shall coordinate as soon as practically possible and often with the NOAA Protected Resources Division, Greater Atlantic Regional Fisheries Office to ensure compliance at all stages of development. Early consultation regarding pre-construction surveys is necessary to allow time for permitting. Vessels related to project planning, construction, and operation shall travel at reduced speeds when cetaceans are observed. Vessels also shall maintain a reasonable distance from whales, small cetaceans, and sea turtles. Qualified Projects shall minimize potential vessel impacts to marine mammals and sea turtles. Operators shall undergo training on applicable vessel guidelines. Qualified Projects shall avoid and minimize impacts to marine species and habitats in the project area by posting a qualified observer on site during construction activities. This observer shall be approved by BOEM and NMFS. Qualified Projects should implement state-of-the-art and innovative technologies to observe and avoid protected species during pre-construction surveys, construction, and operation of the Project.	Appendix 10-1
(Described in Attachment 6 - Visual Impacts) Qualified Projects shall use appropriate viewshed mapping, photographic and virtual simulations, computer simulation, and field inventory techniques to determine, with reasonable accuracy, the visibility of the proposed project. The viewshed impact analysis should identify sensitive and scenic viewpoints. Qualified Projects should identify methods to mitigate adverse viewshed impacts.	Appendices 10-1 and 10-9

10.1 Summary

Atlantic Shores strives to be a good steward of the environment working to develop projects that identify and protect key environmental resources and sensitivities as well as seeking opportunities to provide additional benefit where feasible. We think end-to-end in our approach, prioritizing through the avoid – reduce – mitigate sequence, and are fully committed to using state-of-the-art technologies and methods to protect the well-being of our communities and New Jersey's unique environmental resources. We seek opportunities through our project design, research investments and data collection to achieve a net positive outcome and provide additional benefit and value to the local and regional environment. Our commitment and unique capabilities to achieve these ends are highlighted in this chapter and summarized below.



Our full Environmental Protection Plan is located in Appendix 10-1, and details the physical, biological, and socioeconomic resources in our Project Area and our proposed environmental protection measures to avoid, minimize, and mitigate potential impacts. Appendix 10-2 contains our Data Management and Availability Plan and Appendix 10-3 contains our Offshore Wind Infrastructure Monitoring Plan.

Section 10.2 highlights our unparalleled assessment and understanding of **New Jersey's environmental resources.** Over the past +4 years, Atlantic Shores has conducted over distinct environmental studies and site investigations in support of our Portfolio of projects, both offshore and onshore. Through these efforts we have gained an unmatched knowledge of New Jersey's environmental resources and potential impacts compared to other developers, including physical, biological, visual, cultural and socio-economic aspects. Importantly, our continuing efforts are built on partnerships with highly experienced and leading governmental and academic partners, such as . As a result, our efforts have contributed significantly to scientifically sound, cutting-edge resource

[93]

assessments of New Jersey's marine, coastal and terrestrial ecosystems and will continue to do so if awarded in this Solicitation.

Section 10.3 describes how we build on our relationships and **engage with New Jersey environmental stakeholders** to understand their concerns and incorporate their feedback into the development of our Environmental Protection Plan**.** Atlantic Shores leverages the established relationships and collaborations with NJ stakeholders from Project 1 and proactively maintains dialogue with key communities and organizations that are critical to the development of our Project. Over the past +4 years, we have gained the support of our environmental stakeholders by holding more than [redacted] with residents and public officials, commercial and recreational boaters, and Federal, Tribal, State, and local government agencies. We are actively collaborating and consulting with major eNGOs [redacted] to understand how our Project can be deemed environmentally responsible by some of the strictest judges in the environmental field. Our detailed Stakeholder Engagement Plan is presented in Chapter 9 - Stakeholder engagement and describes how we will continue to do so hand-in-hand throughout the Project's lifetime.

In Section 10.4 we leverage the knowledge gained through our extensive site assessments and stakeholder engagements conducted over the last 4 years to support our submitted COP and DEIS, to understand and **mitigate potential environmental and emissions impacts.** We developed a comprehensive environmental protection catalogue that ensures that short-term potential impacts during construction and operations are minimized to the greatest extent possible. [redacted] 17 [redacted] Cost-benefit analysis. [redacted]

Section 10.5 shows our forward-looking plans for **future infrastructure monitoring and transparent, accessible data management.** We have developed an Infrastructure Monitoring Plan that expands on our environmental data collection and research study initiatives to date and considers the future use of our infrastructure [redacted]. Our plan incorporates guidance from key Federal and State agencies [redacted] stakeholder groups [redacted], scientists in the Mid-Atlantic and New England region [redacted] technology innovators, and NGOs, such as the [redacted] Atlantic Shores is committed to continue

to share as much of our research and data with public agencies and research institutions as feasible to further enhance the collective baseline information as described in our Data Management and Availability Plan to elaborate on our data monitoring and sharing philosophy.

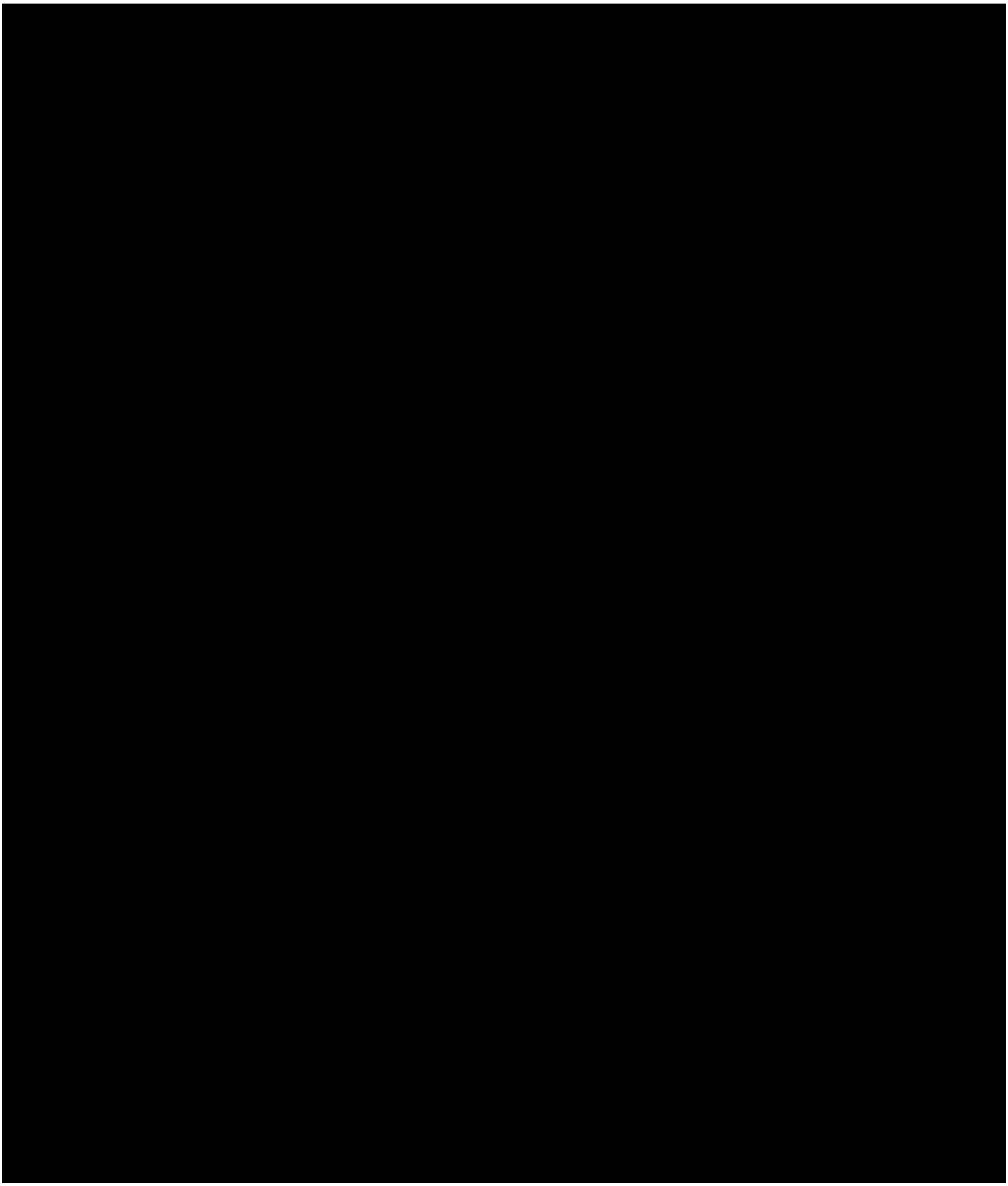
Section 10.6 details our plans to **lead research initiatives that further inform our Project and aim to protect and enhance New Jersey's wildlife and environment:** Atlantic Shores is funding [redacted] 11 [redacted] Fisheries protection plan[redacted]

Environmental protection plan and emissions impact | Our commitment to New Jersey

- Deep understanding of environmental resources through 4+ years of data collection
- [redacted]
- Open and transparent sharing of collected data with our research partners [redacted] governmental agencies and the public, as done over the past years
- Protection plan with countless initiatives to mitigate effects of our Project on the environment, wildlife and marine life leveraging learnings from Project 1 and stakeholder feedback
- [redacted]
- Minimization of our own CO_2, PM2.5 and SO_2 emissions through at least 3 different measures, including innovative measures such as the deployment of [redacted].
- Investments of up to [redacted]
- Funding of regional research and monitoring fee of $10,000 per MW awarded

[redacted]

Figure 10-1: Collaborative research initiatives for environmental protection



10.2 Environmental resource assessment

Atlantic Shores is following the 'Roadmap for Success' set forth in New Jersey's Offshore Wind Strategic Plan.[94] We firmly believe in responsible offshore wind development and our obligation to protect New Jersey's valuable coastal and marine resources. As we help the State of New Jersey realize its clean energy goals with new offshore wind energy projects, we are funding research and leveraging relationships with industry, government, and academia to build the collective understanding of New Jersey's ocean environment and coastline. In this way, we are leading with science to increase our understanding of New Jersey's unique resources so that we can site, build and operate all of our projects sustainably.

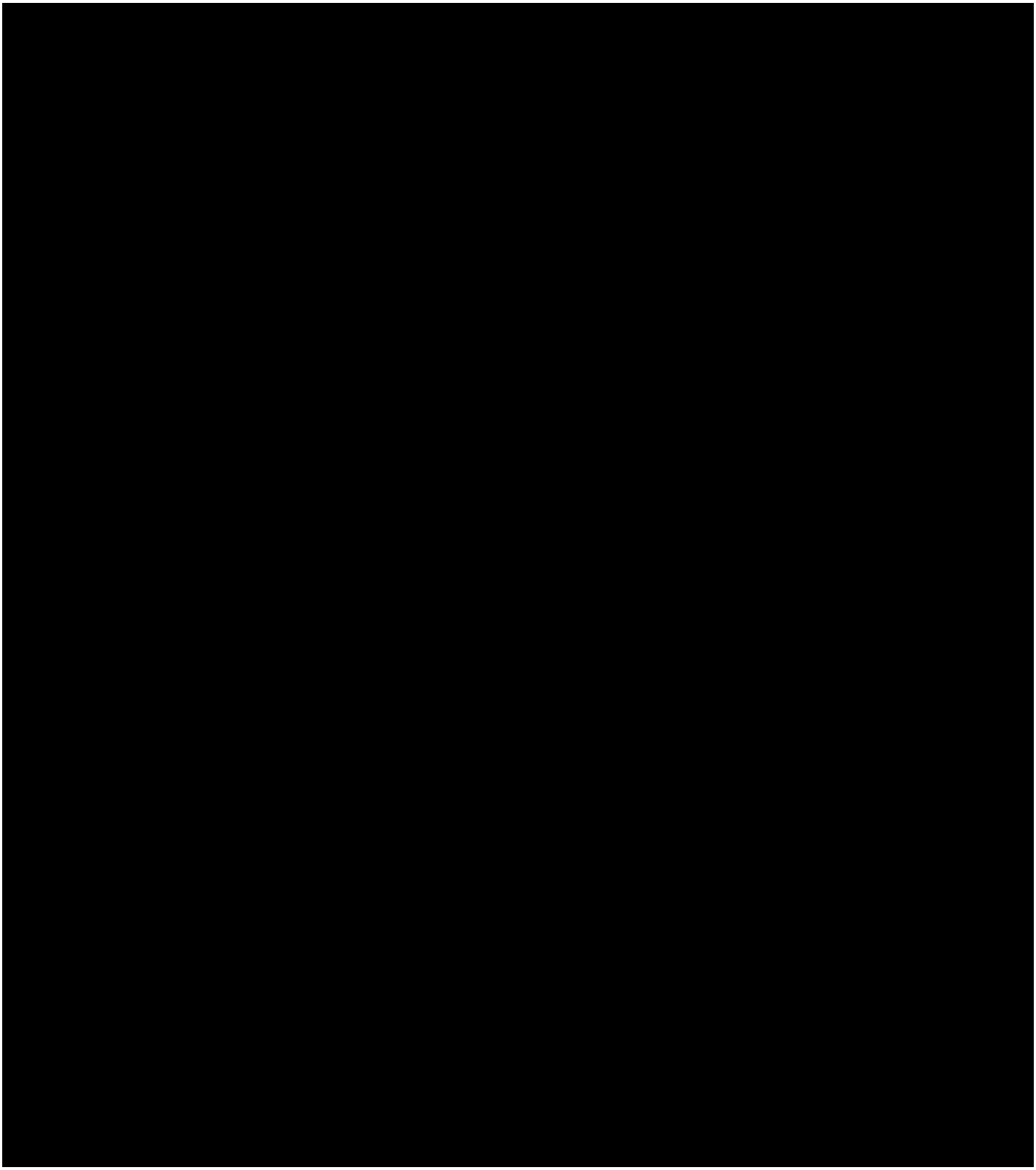
Developing a detailed and scientific understanding of New Jersey's coastal and marine environment has been Atlantic Shores' starting place to support environmentally sustainable and responsible development of our Portfolio. Robust data, both current and collected, about the physical, biological, cultural and socioeconomic resources of our Lease Area and transmission line routes (export cables and onshore interconnection cables) has informed the development and design of our Project to ensure both sustainability and success.

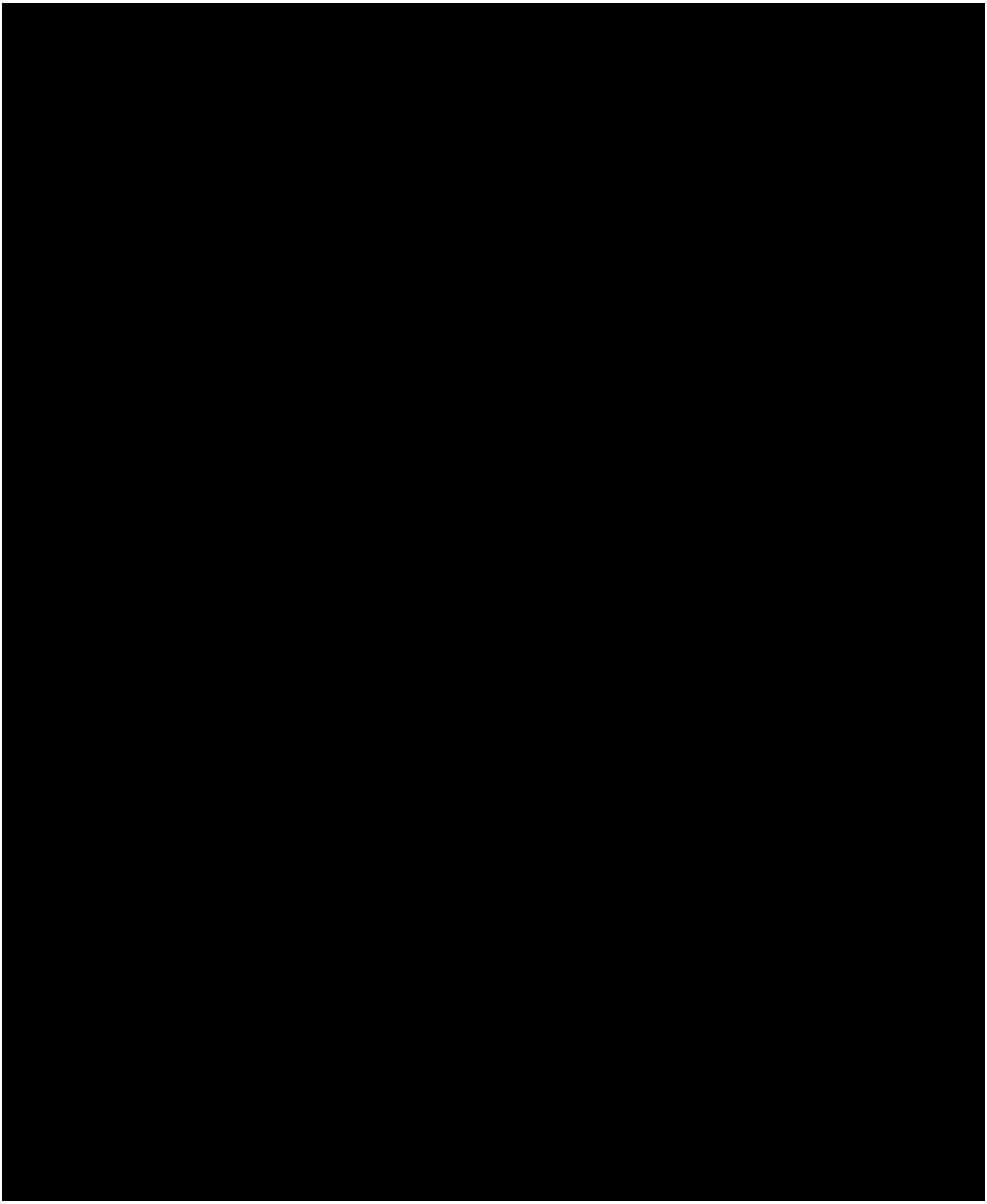
Atlantic Shores has gained extensive knowledge and familiarity with the available science by reviewing existing data sources and discussing data gaps/data needs with our agency partners and other Project stakeholders. We recognize that the New Jersey Baseline Ecological Studies provide a scientific foundation for us to build on. In addition to this existing baseline, [redacted] as well as enhance our assessment of Project-related impacts and identify appropriate mitigation measures. In cooperation with governmental agencies and in collaboration with various academic institutions, eNGO and leading environmental consultants, Atlantic Shores has completed and continues to progress, technical studies to support [redacted] Table 10-2. [redacted]

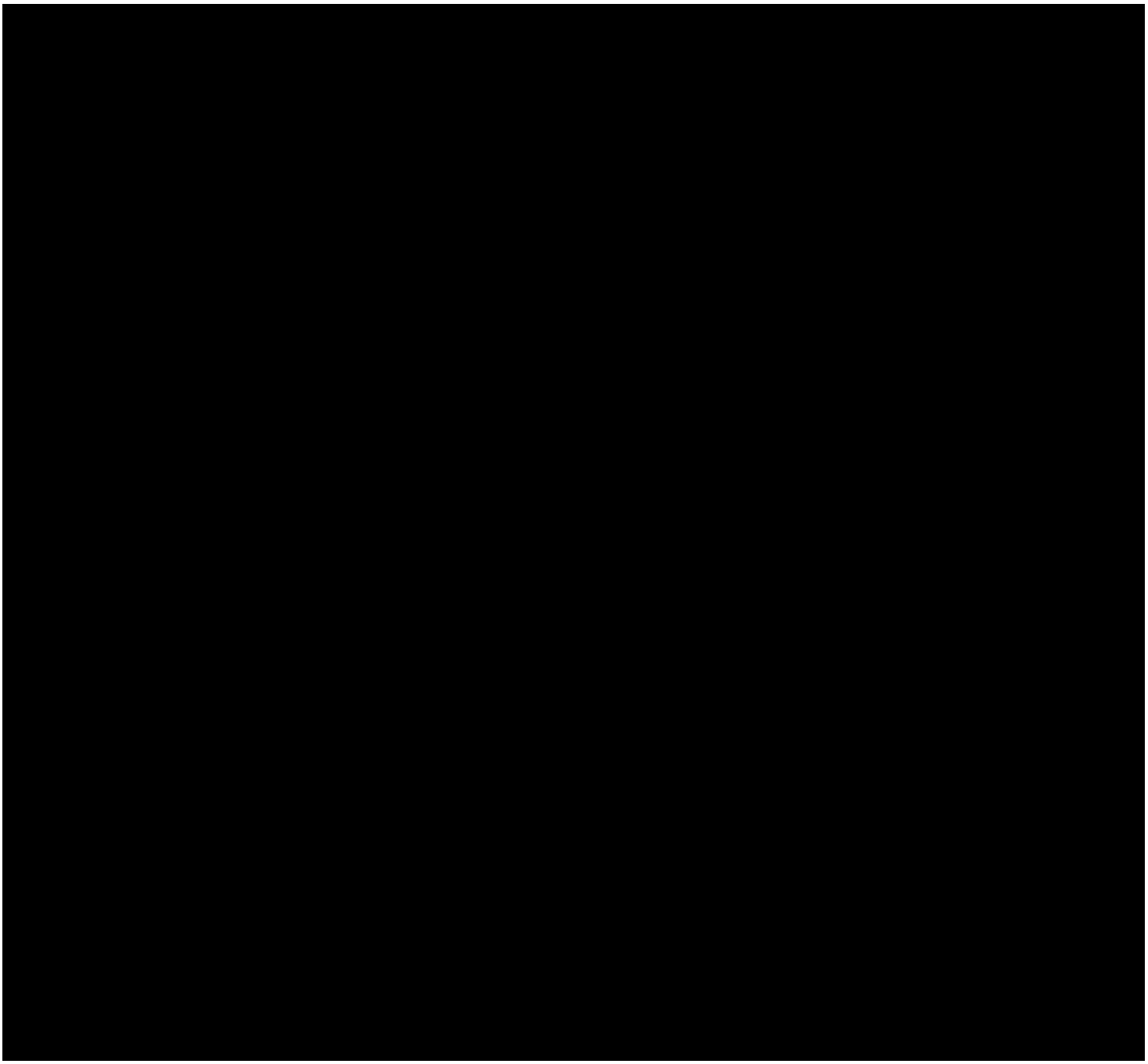
In addition to our technical studies, we have continued to leverage key partnerships with several academic institutions (Stockton, Rutgers and Stevens) and seek support from best-in-class experts and research institutions to ensure continued scientific based validation to support the evaluation of critical environmental questions and considerations. Additionally, through collaboration with governmental agencies, local universities, research consortia, eNGOs and leading technical service providers, we have advanced focal resource monitoring and impact assessment (see Table 10-2). Atlantic Shores' commitment to lead with science and collaborate with reputable, leading research partners has led to scientifically sound, statistically rigorous environmental resource assessments and analysis. Atlantic Shores has formalized work and data-sharing relationships with these entities through [redacted] More information on data sharing is available in the Data Management and Availability Plan submitted as an Appendix to this Environmental Protection Plan. [redacted]

[94] Ramboll US Corporation (2020) New Jersey Offshore Wind Strategic Plan. Prepared by Ramboll US Corporation. Prepared for New Jersey Board of Public Utilities and the Interagency Taskforce on Offshore Wind.

Table 10-2: Description of baseline monitoring data collection efforts







10.3 Engagement with New Jersey environmental stakeholders

Chapter 9 - Stakeholder engagement provides details regarding Atlantic Shores' stakeholder engagement philosophy and activities. Our environmental and community Stakeholder Engagement Plan is based on inclusion, openness, and two-way communication with the clear ambition to coexist with New Jersey's environment and residents. Since 2019, Atlantic Shores has identified key stakeholders and invited them to join us in a conversation about the Project and to voice their concerns. This has included groups such as representatives from the fishing industry, municipalities, state and federal agencies, and the general public. We keep an open door for other stakeholders to join the conversation. Atlantic Shores is dedicated to maintaining transparent communication channels and providing a range of alternatives to reach stakeholders and listen to

their input. To date we have conducted over [redacted] meetings and work sessions with stakeholders, interest groups and New Jersey communities that have an interest, concern or will be influenced by our Project and associated development activities. The input gathered through these activities has been incorporated into [redacted], supported our facility siting and mitigation measures, and helped to inform our science and research efforts and focus including our collaboration with [redacted]

Atlantic Shores remains committed to ongoing engagement and communication with our environmental stakeholders providing continued opportunities provided to gather input and perspectives Consideration and incorporation of these key stakeholders ensures our projects address the needs and interests of New Jersey as well as the environment. We have sought to take a portfolio approach with our environmental assessments to ensure learnings and inputs from our initial projects and studies are carried forward across all projects and used to support continued improvement as they progress. Among the environmental stakeholders that we engage with are, for instance:

- **Federal, State and local agencies:** Atlantic Shores proactively engages with Federal, State, and local agencies to discuss development of our Lease Area, to present project-specific details, to collaboratively identify resource issues of concern and mitigation strategies, and to design scientific research and monitoring studies that satisfy all regulatory review requirements. To help foster increased understanding of our Project activities and equipment, we have also offered [redacted]
- **Overburdened communities:** Atlantic Shores regularly meets with and engages elected officials, civic leaders, neighborhood associations and similarly interested parties to share our clean energy vision, listen to community needs, and incorporate feedback into project plans. Mindful of information access in historically marginalized environmental justice (EJ) and officially designed overburdened communities (OBCs), Atlantic Shores has launched a number of engagement initiatives to foster understanding of our Project and the NJ energy vision. As part of these, Atlantic Shores uses our Education and Community Outreach (ECO) Center, located on Stockton University's Atlantic City campus on the Boardwalk, to host community programs, job fairs and information sessions. Signature events include [redacted]
- **Tribes:** Atlantic Shores also engages with Federal- and State-recognized tribes, including the [redacted]. We began work to establish relationships early and our approach to engagement focuses on first understanding the histories of the tribes, learning about their traditions, and providing opportunities for project input. For example, in response to requests to learn more about Project activities, Atlantic Shores provided tribal members with a virtual platform to participate in real-time in the assessment of deep-sea borings from the Lease Area.

- **Environmental NGOs:** Over the past +4 years, Atlantic Shores has conducted environmental resource and issue-focused meetings with [redacted] to find common ground, areas of collaboration, and areas requiring further discussion. These relationships develop over time and require consistent, honest dialogue. We have built trust by being open about what is possible, following up on our commitments and leading with science. [redacted]. While we cannot avoid all impacts, we have committed to listening to their interests with an open mind and an intent to find creative, collaborative solutions that not only address any potential impacts but also aim to achieve a net positive impact for our Project.
- **Scientific and academic institutions:** As described in Section 10.2 we engage with a number of scientific and academic partners that served to inform our environmental assessments and the development of cutting-edge research initiatives such as presented in Section 10.6. As an industry leader of New Jersey's clean energy economy, Atlantic Shores is proud of our efforts to grow our research investments and data-sharing capacity with these institutions. These activities represent the backbone of trust we're building locally to broaden public support for our Projects and combat misinformation regarding offshore wind development.
- **Fisheries:** We engage extensively with commercial and recreational fisheries. Details of these engagements are elaborated in Chapter 11 - Fisheries protection plan.

10.4 Mitigation of potential environmental and emissions impacts

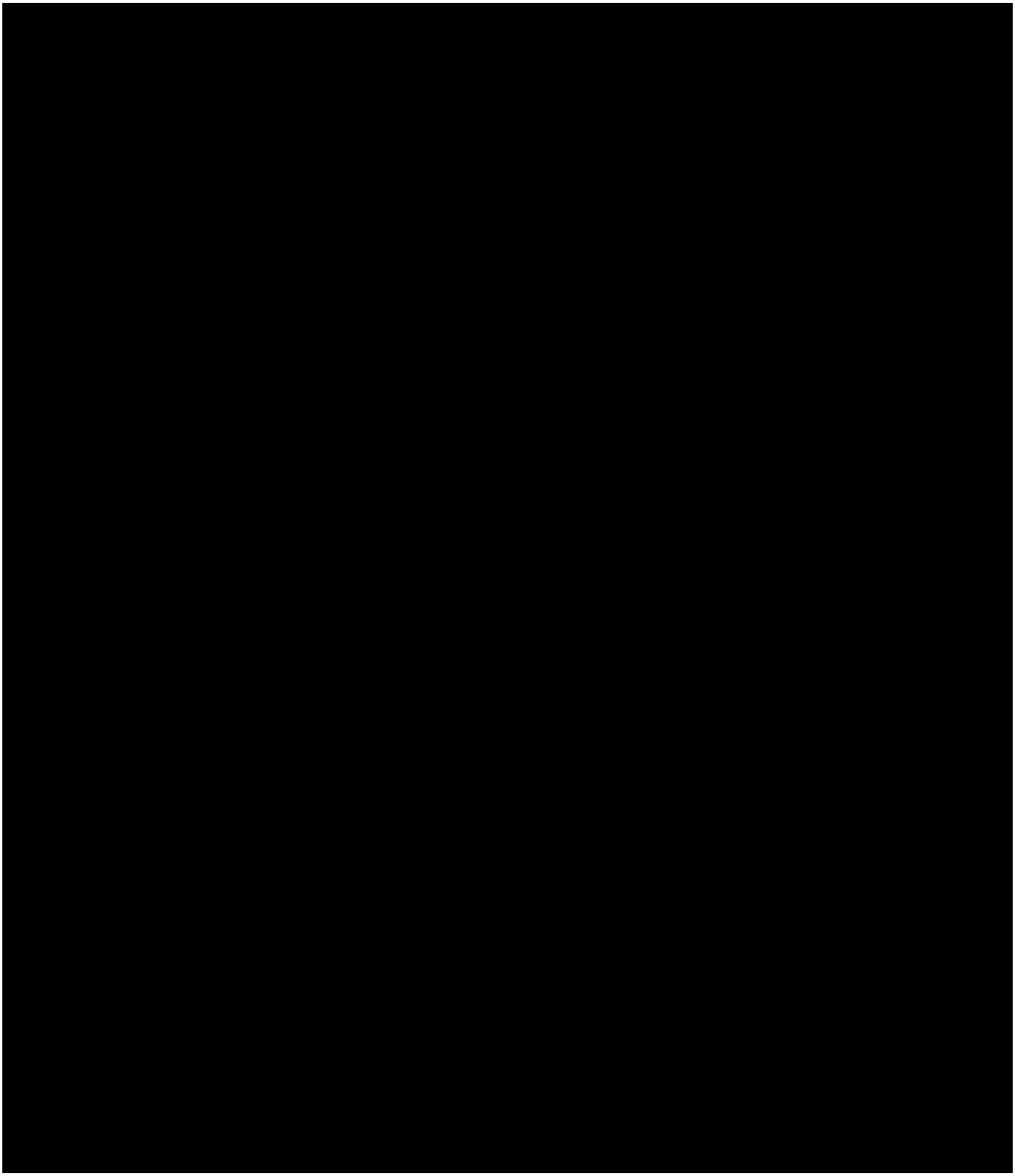
Atlantic Shores has prepared an Environmental Protection Plan (EPP) appended as Appendix 10-1 that outlines the full benefits and potential impacts to biological and non-biological resources through each project stage. The EPP hosts Atlantic Shores' robust environmental protection catalog that has been iterated over years of project development, baseline data collection and communication with Federal, State, and local entities. The EPP addresses the impacts to visual and cultural resources while providing detail on the mitigation measures and strategies associated with each resource area. An emissions impact assessment and cumulative impact considerations are also included within this document. Section 10.4.1 below presents an overview of the EPP for both biological and non-biological resources.

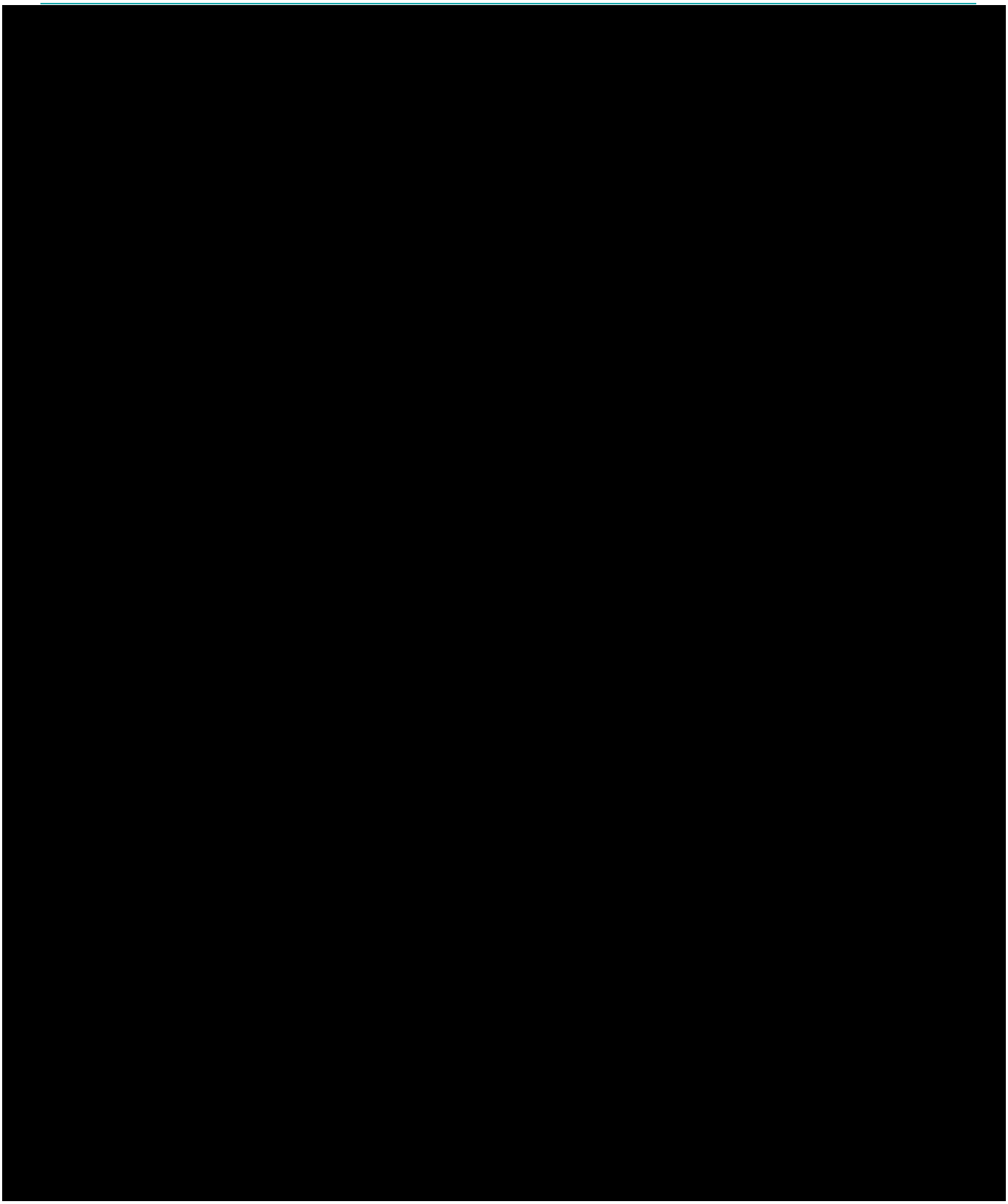
10.4.1 Overview of potential environmental impacts and mitigations for biological resources

Atlantic Shores has evaluated the positive and negative effects of its activities on New Jersey's environment for all phases of the development of our Project: pre-construction, construction, operations & maintenance, decommissioning. This evaluation supports the ongoing Federal, State, and local siting of the Project, permitting and environmental impact review processes, and determines which of our activities may have the greatest effect and how we can best mitigate any potential negative effects or enhance positive ones.

The result of these outreach and research efforts is a set of Environmental Protection Priorities to focus our attention on the issues of greatest importance to stakeholders and to take meaningful steps to avoid or greatly minimize the environmental effects of the proposed Project so that the Project's benefits can be achieved and maximized for all of New Jersey. The EPP (Appendix 10-1) details the robust catalog of environmental mitigation measures and impacts of the Project. [redacted]. A summary of the environmental impacts and the actions taken by Atlantic Shores to avoid or mitigate the impacts are presented in Table 10-3**.**

Table 10-3: Environmental protection priorities and associated mitigation strategies

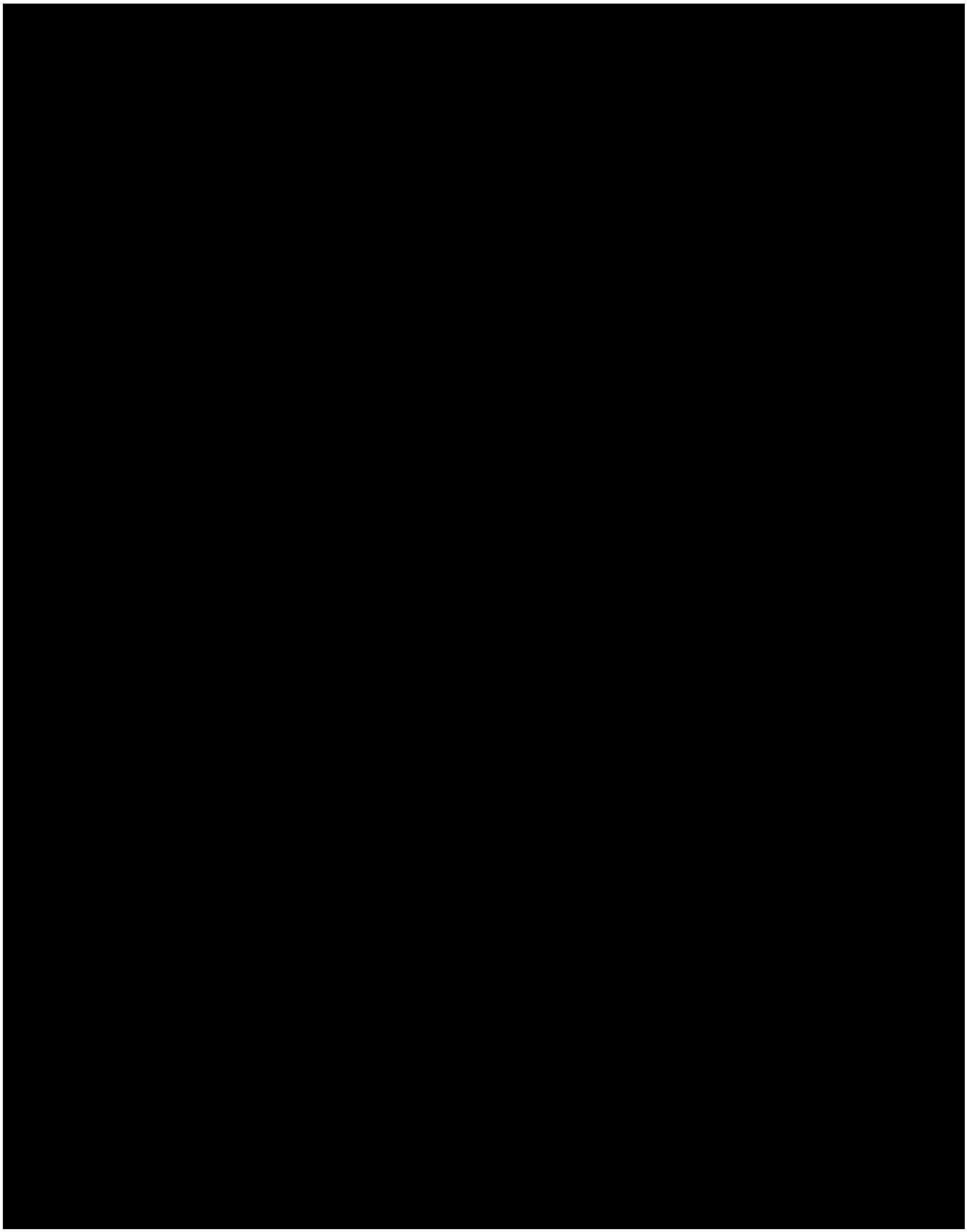


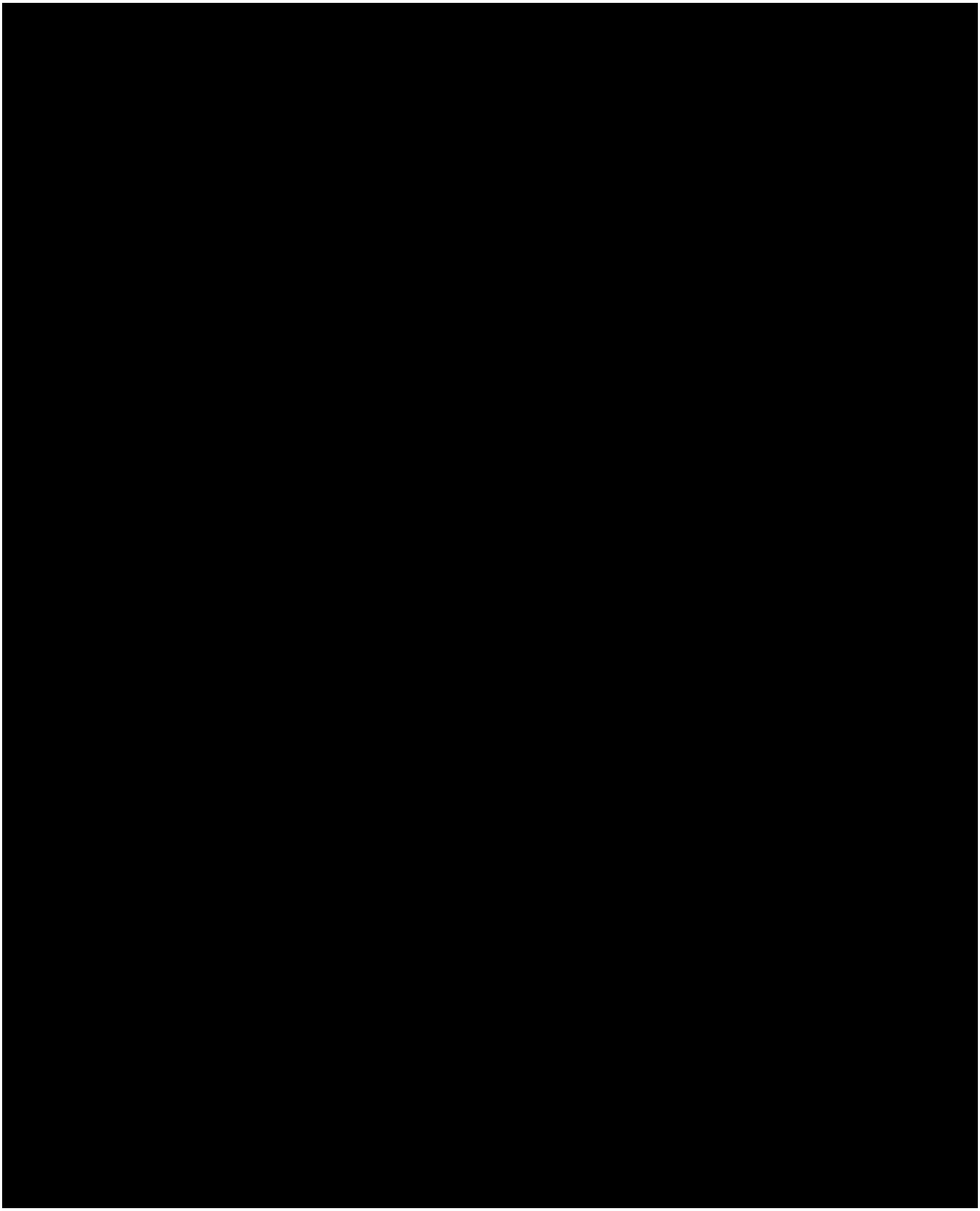


10.4.2 Overview of potential environmental impacts and mitigation for non-biological resources

In this section, Atlantic Shores presents our understanding of possible conflicts with other users and nearby communities and corresponding mitigating actions related to our activities in the Project Area. These potential project-related effects to non-biological environmental resources were identified through Atlantic Shores' coordination with Federal and State agencies and New Jersey communities. The primary concerns identified along with a summary of the associated assessment and protection strategies actively being executed by Atlantic Shores are provided in Table 10-4. For a complete and detailed overview of our protection plan for non-biological resources please refer to Appendix 10-1.

Table 10-4: Non-biological environmental protection priorities and associated mitigation strategies





10.5 Future plans for infrastructure monitoring and data management

10.5.1 Infrastructure monitoring plan

Over the past +4 years, Atlantic Shores has sought to pursue and support diverse research opportunities aimed at better understanding of the ecological conditions and changes throughout the life and across the footprint of our Project. As part of this ambition, Atlantic Shores has sought opportunities to collect supplementary environmental data using [redacted]) or in coordination with project activities ([redacted] where possible. With these efforts, Atlantic Shores has illustrated their commitment to integrating research and monitoring efforts into full project delivery and development. The Infrastructure Monitoring Plan, included in Appendix 10-3, supports this bid and builds upon these existing efforts and considers future opportunities for the utilization of offshore infrastructure and lease to collect further data and support ongoing monitoring efforts. The plan details both planned and proposed monitoring efforts for resource specific considerations such as birds, bats, marine mammals, benthic habitats, and fish. The Infrastructure Monitoring Plan works to align Atlantic Shores' research with regional research efforts of [redacted] and to support the goals of the RMI, as well as supplement our proposed research initiatives including [redacted]. As project development advances, the plan shows expansion with Atlantic Shores' incremental investment in cutting-edge research of exceedingly crucial resource areas.

10.5.2 Data management and availability plan

Atlantic Shores has developed a plan for transparent reporting of findings related to the potential for impacts to marine mammals, sea turtles, avian, and bat species as well as other environmental resources. Our Data Management and Availability Plan, included in Appendix 10-2, elaborates on our key mechanisms regarding the transparent sharing of data:

- **Most data will be shared via Federal, State, and local environmental review and permitting processes.** Throughout the environmental review and permitting process, the results of our technical studies will be available through the various Federal, State, and local agencies. Much of this information will be available electronically online or directly from the appropriate agency, such as BOEM, NJ BPU, the NJ DEP, and other regional entities.
- Atlantic Shores has and will continue to regularly shared non-commercial information, site and environmental data with project stakeholders **through public presentations, targeted meetings, our website, or upon request**.
- Atlantic Shores will leverage relationships with governmental and non-governmental data services/information portals **to collaboratively build data infrastructure management systems** to accommodate the large datasets collected during various phases of the Project.

Current examples of Atlantic Shores' firm commitment to transparent reporting are our long-standing collaborations and data sharing agreements with [redacted] to manage meteorological and oceanographic data collected at [redacted]. These agreements ensure the important data is made directly available to the public and highlight our emphasis on building awareness of our Project and offshore wind through data availability. Our proven track record of supporting forward-thinking, collaborative wildlife research and data-sharing also includes an innovative satellite tracking study on the endangered red knot with Wildlife Restoration Partnerships, USFWS, NJ Division of Fish and Wildlife, and the Biodiversity Research Institute. The data from this tracking study are being used by these public partners to support the management and protection of red knots – a federally listed species [redacted]

10.6 Research initiatives to protect and restore wildlife and environment

10.6.1 Atlantic Shores environmental research and development initiatives

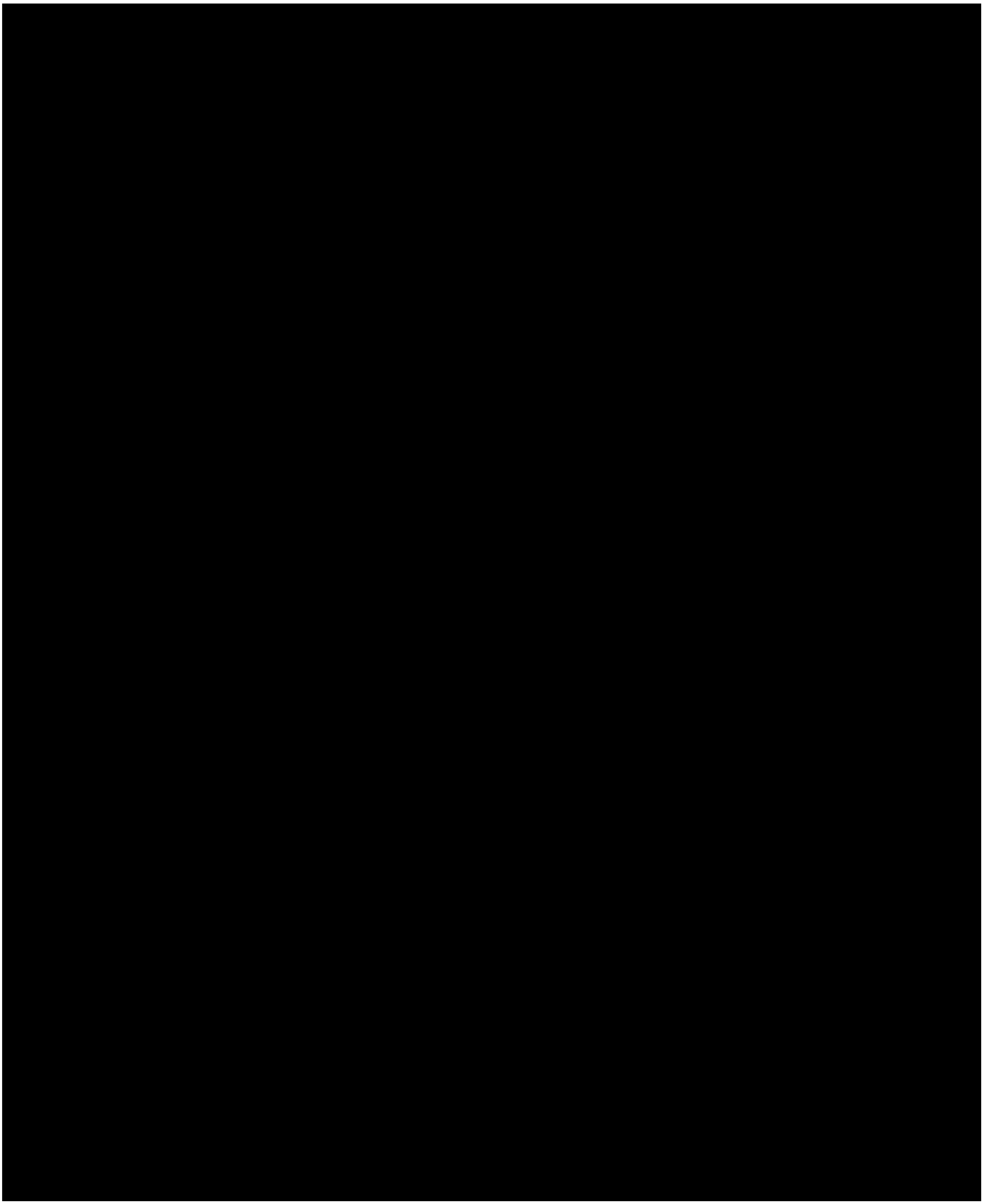
Atlantic Shores continues to seek and progress research opportunities that further our understanding of New Jersey's coastal and marine resources and contribute to integration and coexistence of our Project with the local environment through avoidance or mitigation of potential impacts. Atlantic Shores has continued to demonstrate its willingness to support scientific efforts to advance the collective understanding of New Jersey's ocean environment and be a good neighbor and steward for the environment.

[redacted]. Data collected to date from the buoys has been and continues to be openly shared with Rutgers University, MARACOOS and government agencies to support focused studies (i.e., Rutgers – Mid-Atlantic Cold Pool) as well as provide oceanographic and climatological data to support the monitoring of trends associated with climate change and the impacts on marine habitats. [redacted] This data has additionally been shared on public databases, with government agencies and research institutions in support of broader data collection and research initiatives. [redacted]

In addition to the above, Atlantic Shores has launched a number of research initiatives with key research institutions and organizations throughout the mid-Atlantic. Table 10-5 details the environmental research initiatives currently being confirmed (i.e., already confirmed for funding and progression) and/or proposed (i.e., progression is contingent on bid award) by Atlantic Shores in addition to Baseline and Monitoring Data Collection outlined in Table 10-2 and separate from the RMI fee. Cumulatively, the initiatives below represent over [redacted] of investment in research and development either in progress or planned [redacted]

Table 10-5: Environmental research and development initiatives

[redacted]



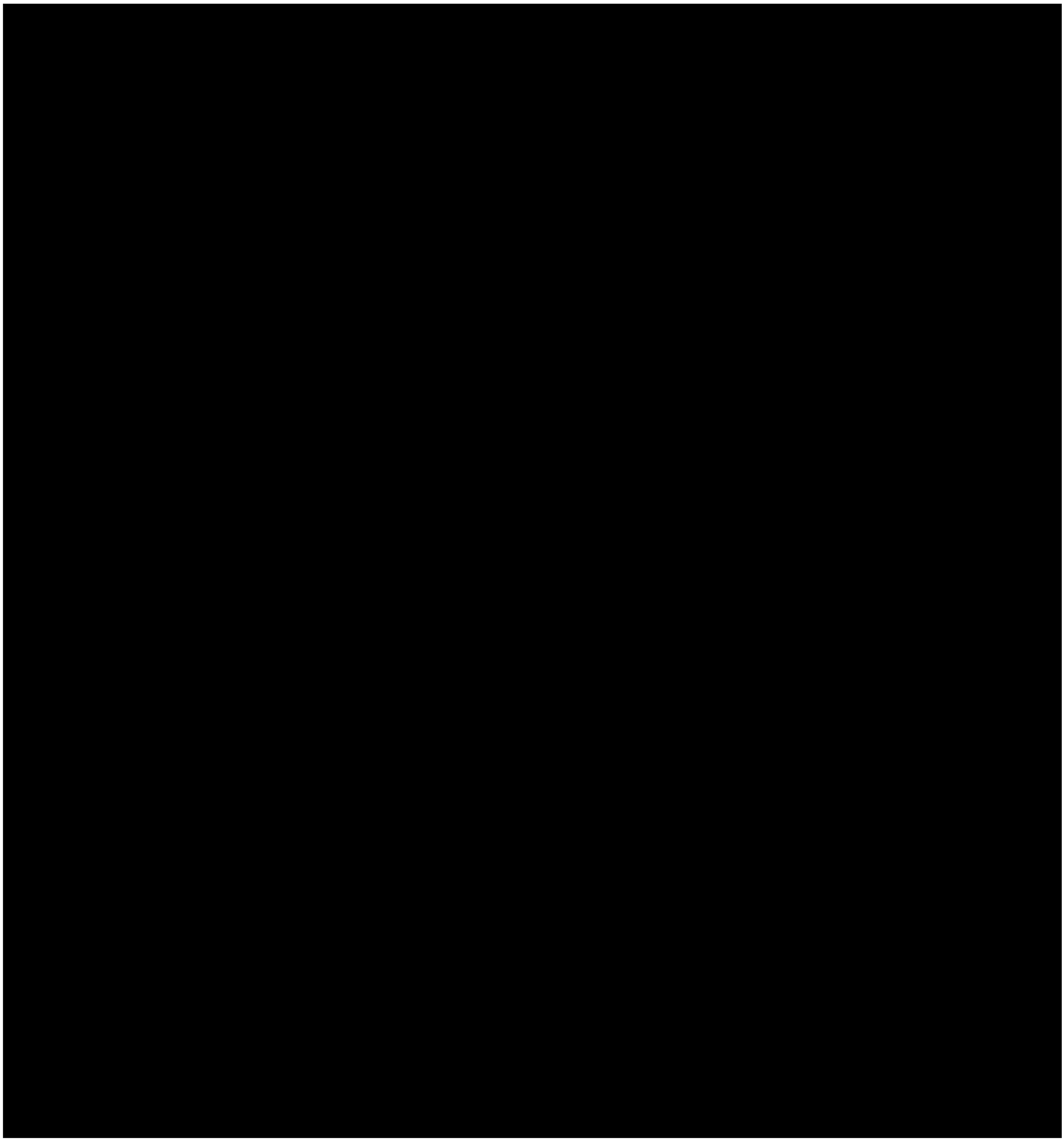
[redacted]

10.6.2 Regional research and monitoring fee

The projects outlined in Table 10-5 above are in addition to the required regional research and monitoring fee outlined in Section 3.10 of the SGD. Though separate, these initiatives support and align with the goals and priorities of the New Jersey's Regional Monitoring Initiative (RMI) to protect and responsibly manage New Jersey's coastal and marine resources while progressing offshore wind development. If awarded, Atlantic Shores welcomes the opportunity to provide both financial and technical support and work with the RMI along with research institutions, other industry (including key fisheries), regional science entities and members of the New Jersey Offshore Wind Environmental Resources Working Group to identify and prioritize research and monitoring needs to be funded with the $10,000 per MW awarded.

The efforts outlined above demonstrate Atlantic Shores' willingness to support scientific efforts to advance the collective understanding of New Jersey's coastal and marine resources. In association with the required fee, Atlantic Shores offers the following suggestions for use of the funding to support further environmental research and build upon research and monitoring efforts progressing and planned by Atlantic Shores as well as other organizations at the State and regional level.

[redacted]



11 Fisheries protection plan

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Solicitation requirements

Table 11-1 describes the Solicitation requirements of this chapter as put forth in the SGD, as well as the relevant sections addressing these requirements.

Table 11-1 Fisheries protection plan - references for Solicitation requirements

Key Solicitation requirements	Application reference
A scientifically rigorous description of the marine resources that exist in the Project area, including biota and commercial and recreational fisheries, that is informed by published studies, fisheries-dependent data, fisheries-independent data, and, where feasible, fishing communities' shared ecological knowledge, and identifies species of concern and potentially impacted fisheries (N.J.A.C. 14:8-6.5(a)(16))	Section 11.2
Maps that identify the locations of sensitive marine and coastal terrestrial habitats and fisheries that are within or in the vicinity of the Project footprint, including but not limited to: Special Areas as defined by N.J. Admin. Code Chapter 7 - Coastal Zone Management Rules, Subchapter 9 (including shellfish habitat, surfclam areas, prime fishing areas, finfish migratory pathways, submerged aquatic vegetation, shipwreck and artificial reef habitats, and endangered or threatened wildlife or plant species habitats), Habitat Areas of Particular Concern, Essential Fish Habitat, commercial fisheries management areas and reserves, and estuary reserves (Applicants should obtain New Jersey-specific resource layers from NJ DEP GIS Open Data, https://gisdatanjdep.opendata.arcgis.com) (N.J.A.C. 14:8-6.5(a)(16))	Sections 11.2.2 and 11.2.5.2
Identification of all potential impacts on fish and on commercial and recreational fisheries off the coast of New Jersey from pre-construction activities through decommissioning (N.J.A.C. 14:8-6.5(a)(16))	Sections 11.4.2
A plan that describes the specific measures the Applicant will take to avoid, minimize, and/or mitigate potential impacts on fish, and on commercial and recreational fisheries, consistent with the minimum requirements in Attachment 9 herein (N.J.A.C. 14:8-6.5(a)(16))	Section 11.4
A description of the considerations related to identifying the cumulative impacts of New Jersey's offshore wind development plans, as well as interactive impacts with offshore wind development plans in neighboring states (N.J.A.C. 14:8-6.5(a)(16))	Section 11.4.3
A description of any commitments to fund research related to the assessment and avoidance of fisheries impacts, in addition to the required fee described in the introduction to Section 3 (N.J.A.C. 14:8-6.5(a)(16))	Section 11.3.5, 11.3.6 and 11.5.1
An explanation of how the Applicant will provide reasonable accommodations to commercial and recreational fishing for efficient and safe access to fishing grounds (N.J.A.C. 14:8-6.5(a)(16))	Section 11.4.2.2
A description of how the Applicant will identify (or has identified) commercial and recreational fisheries stakeholders, any outreach that has occurred to date, and how the Applicant plans to engage with those stakeholders during pre-construction activities through decommissioning, as well as a plan for transparent reporting of how stakeholder concerns were addressed (N.J.A.C. 14:8-6.5(a)(16))	Sections 11.2.4, 11.2.5, 11.3

A description of the Applicant's plan for addressing loss of or damage to fishing gear or vessels from interactions with offshore wind structures, array or export cables, survey activities, concrete mattresses, or other Project-related infrastructure or equipment (N.J.A.C. 14:8-6.5(a)(16))	Section 11.4.2.3
(Described in Attachment 9 - Fish Resources and Essential Fish Habitat) • The Qualified Project shall collect data to adequately identify and characterize Essential Fish Habitat, following recommendations in the NOAA publication, "Information Needs to Assess Essential Fish Habitat Impacts from Offshore Wind Energy Projects Along the U.S. Atlantic" (September 2021), and any subsequent updates (https://media.fisheries.noaa.gov/2022-02/EFH-InfoNeeds-OSW-GARFO.pdf, further information may be found at https://www.fisheries.noaa.gov/new-england-midatlantic/aquaculture/information-needs-assess-essential-fish-habitat-impacts.). • Qualified Projects shall also follow the recommended steps for mapping seafloor habitat in NOAA's "Recommendations for Mapping Fish Habitat," (https://media.fisheries.noaa.gov/2021-03/March292021_NMFS_Habitat_Mapping_Recommendations.pdf?nul, NOAA, Letter from Louis A. Chiarella to Michelle Morin, BOEM Office of Renewable Energy Programs, re: Updated Recommendations for Mapping Fish Habitat (March 29, 2021).) and any subsequent updates, to ensure that the information collected is sufficient for BOEM to meet the requirements for the Essential Fish Habitat consultation under the Magnuson-Stevens Fishery Conservation and Management Act (Fishery Conservation and Management Act of 1976, 94 P.L. 265, 90 Stat. 331 (enacted April 13, 1976).).	Section 11.2
(Described in Attachment 9 - Conflicting Use Avoidance, Minimization, and Mitigation) • Qualified Projects shall actively engage with fishing communities to ensure that Project design maximizes safe access to fisheries to the extent feasible. • The Qualified Project shall consult with the fishing industry, preferably through regional fisheries groups to inform siting (of turbines, substations, and inter-array and export cable routes) and regarding navigational safety and risk management, transit routes, and employment opportunities to displaced fishers (e.g., use of fishing vessels for survey work). Additionally, Qualified Projects should seek opportunities to collaborate with the fishing community on projects of mutual benefit. • Qualified Projects shall collaborate with New Jersey's fishing industry, preferably through regional fisheries groups, to review their Fisheries Communication Plan and supplement it as needed to ensure that it is sufficient to facilitate effective engagement at all stages of project development. The Fisheries Communication Plan should include engagement with the United States Regional Fishery Management Councils (See U.S. Regional Fishery Management Councils, http://www.fisherycouncils.org.). The Fisheries Communication Plan shall be a publicly available document. • Qualified Projects shall consult and cooperate with stakeholders identified in the Fisheries Communication Plan to develop a Fisheries Mitigation Plan.	Sections 11.3 and 11.4.2 / Appendix 11-1

The Fisheries Mitigation Plan shall include consideration of safety concerns and recommendations from the U.S. Coast Guard and industry recommended safety measures (e.g., mitigation of radar interference, Automatic Identification System ("AIS") transmitters at turbine locations, and Wi-Fi or cell phone and other technical approaches to improving communication at sea).	
(Described in Attachment 9 - Fisheries Compensation) • Qualified Projects shall develop and implement a program for addressing damage to or loss of gear, vessels, and income from interactions with offshore wind surveying, construction, operation, or decommissioning activities or structures. In developing the program, the Qualified Project should follow the "Compensation for Gear Loss and Damage" section of BOEM's Guidelines for Mitigating Impacts to Commercial and Recreational Fisheries on the Outer Continental Shelf (BOEM's Guidelines for Mitigating Impacts to Commercial and Recreational Fisheries on the Outer Continental Shelf are in draft form as of February 2023 (https://www.boem.gov/sites/default/files/documents/renewableenergy/DRAFT%20Fisheries%20Mitigation%20Guidance%2006232022_0.pdf), but are expected to be finalized prior to the Application Submission Deadline.) and consult the commercial fishing industry and other leaseholders to ensure consistency, fairness, and accessibility in substantiating losses, filing claims, mediation, and reimbursement. • New Jersey was one of nine states on the east coast that encouraged BOEM to develop Draft Guidelines for Mitigating Impacts to Commercial and Recreational Fisheries on the Outer Continental Shelf. Qualified Projects should address compensation to commercial and recreational fisheries by, at a minimum, following BOEM's Guidelines for Mitigating Impacts to Commercial and Recreational Fisheries on the Outer Continental Shelf (see bullet point above). Additionally, Qualified Projects shall perform a thorough review of the information needed and available to assess the full economic value of the commercial and recreational fisheries that operate in the Project area. This review should include information needed to assess both direct effects on fisheries (e.g., potential loss of harvest and landing revenue) and indirect effects on shoreside markets and support industries. Shoreside industries may include docks, suppliers (e.g., gear, fuel, repairs), processing facilities, shipping, tourism, and other businesses that rely on marine fisheries. The review should also consider the information needed to understand potential impacts to port cities, identification of underserved communities in our working waterfronts, potential cumulative impacts from full build out of existing lease areas, and the potential for permanent losses of fisheries infrastructure (e.g., fish processing facilities, marinas) that may result from incremental losses in access over time. The review should include consultation with fisheries managers, fisheries economist(s), representatives of the commercial and recreational fishing industries, and other experts, as well as a thorough review of scientific and industry publications. • Qualified Projects shall work with state, federal, and fishing industry representatives to identify the most appropriate entity for administration of fisheries mitigation funds and shall continue to participate in a resulting regional compensation program if recommended by New Jersey. Qualified	Sections 11.4.2.3, 11.4.2.4, 11.3.5 and 11.4.2.2

	Projects should consider mitigation of fisheries impacts at all stages of development through direct partnership with commercial fishing industry members.

11.1 Summary

A robust Fisheries Protection Plan (FPP) is critical to ensure responsible development and co-existence of offshore wind and New Jersey fisheries. Atlantic Shores strives to be an offshore wind industry leader in both fisheries and marine life protection and a trusted partner to recreational and commercial fisheries. To this end, we have developed a robust FPP that builds upon over 4 years of focused efforts to understand New Jersey's fisheries and fishing industries and how our Project may affect them. This FPP integrates 4 years of engagements and collaborations with representatives of these industries. This chapter highlights the key aspects of our plan across marine resources and fisheries as summarized below.

Section 11.2 highlights our unparalleled **assessment** and understanding **of New Jersey's marine resources and fisheries.**

Section 11.3 describes how we continue to build on and strengthen our relationships and **engagement with key commercial and recreational fisheries.**

[redacted]

Section 11.4 highlights our efforts to understand and **mitigate potential impacts to New Jersey's marine resources and fisheries.** [redacted]

Section 11.5 details our plans to lead **research initiatives to protect and restore New Jersey's marine life and fisheries.** [redacted] Figure 11-1 [redacted]

[redacted]

Fisheries protection plan | Our commitment to New Jersey

[redacted]

- Fisheries Liaison team consisting of three dedicated representatives, themselves fishermen and respected members of the fishing community

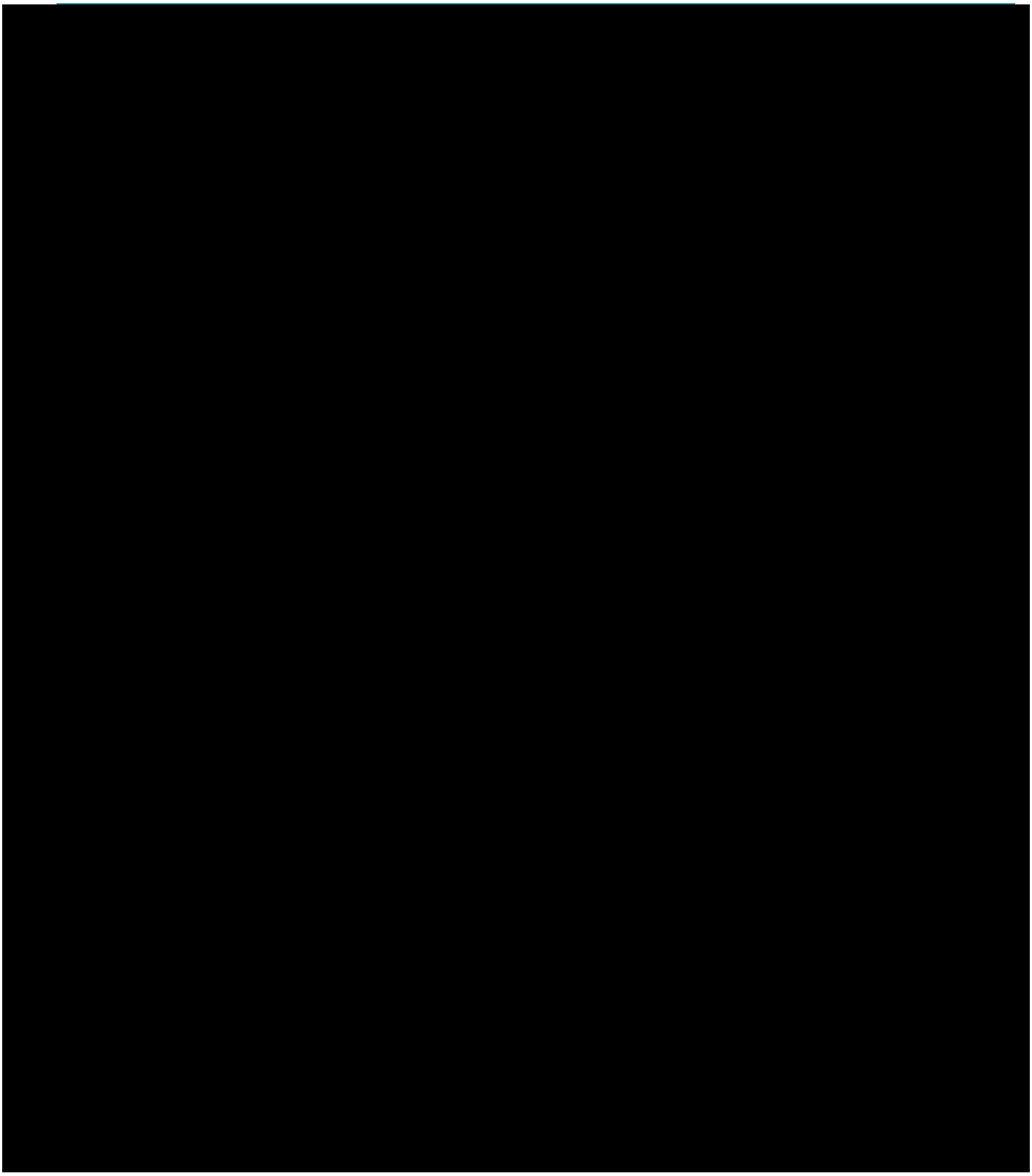
[redacted]

- Active pursuit of economic opportunities to integrate fisheries into our project development

[redacted]

[redacted]

Figure 11-1: Collaborative research initiatives for fisheries protection



11.2 Marine and fisheries resource assessment

11.2.1 Baseline characterization of New Jersey's marine fisheries resources

For more than 3 years Atlantic Shores has been actively working to develop an in-depth understanding of the marine biota as well as the ocean, coastal users, and industries that may be affected by our development activities. This extensive knowledge of the marine ecosystem and the fisheries in our offshore Project Area, [redacted], has provided the scientific foundation to inform project design and delivery.

Atlantic Shores' understanding has been developed through comprehensive desktop literature reviews as well as through ongoing research and conducted field work. [redacted]

[redacted]

[redacted]

We have and will continue to follow the recommended steps for mapping seafloor habitat in NOAA's "Recommendations for Mapping Fish Habitat," and any subsequent updates, to ensure that the information collected is sufficient for BOEM to meet the requirements for the Essential Fish Habitat consultation under the Magnuson Stevens Fishery Conservation and Management Act. [redacted]

[redacted]

[redacted]

Our surveys and studies meet the information requirements set forth by federal and state governmental agencies and seek to exceed these requirements where additional data is needed or valuable to acquire an enhanced understanding of the environment where our Project will be developed. [redacted] 11.3.6 [redacted] (see Chapter 10 - Environmental protection plan and emission impact).

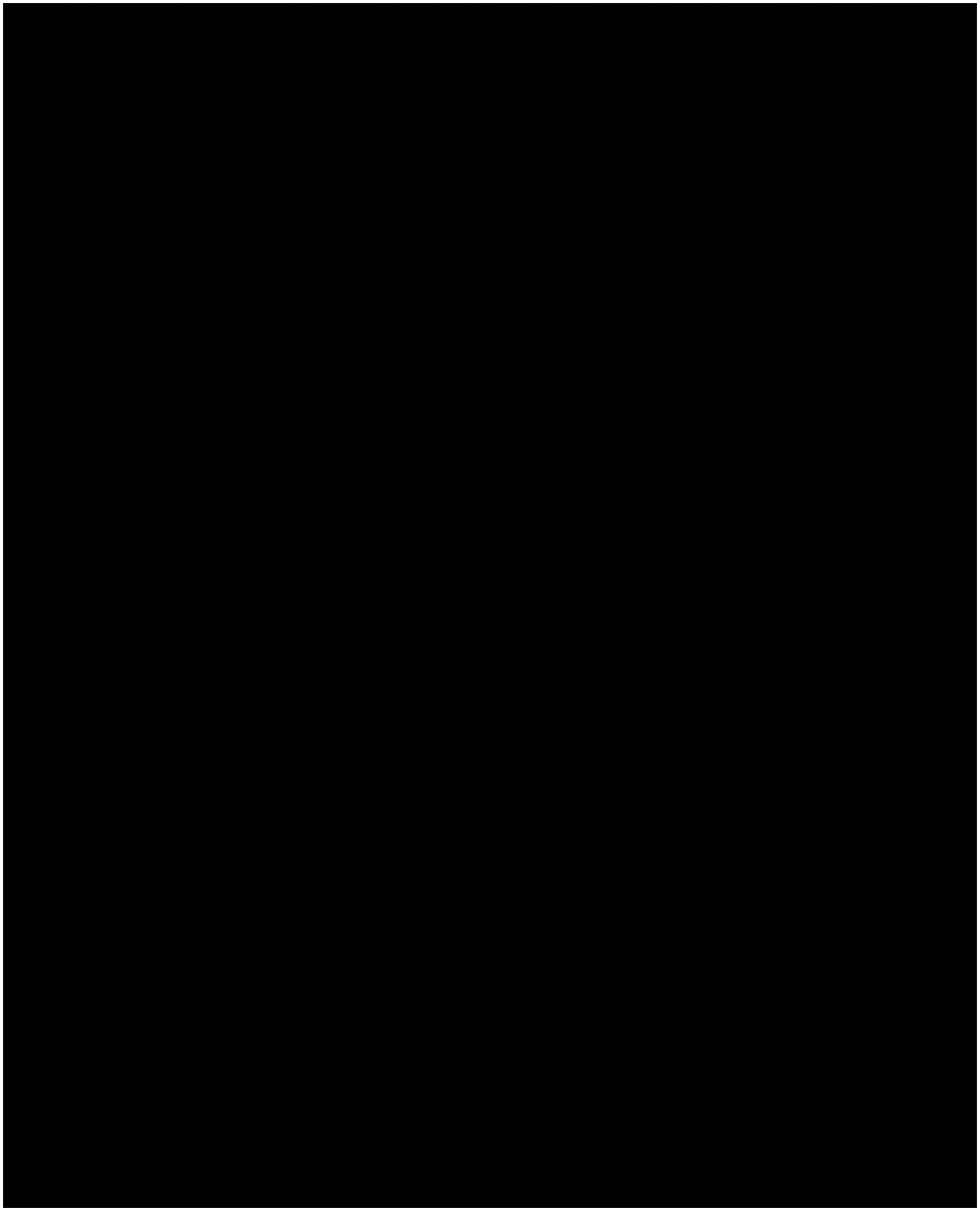
An important component of our study/survey design and implementation is to incorporate those issues that are important to our fisheries and public stakeholders into project design and delivery. All the scientific investigations we have executed to date have been developed through extensive coordination with [redacted]

[redacted]

11.2.2 Location of sensitive marine and coastal terrestrial habitats and fisheries

Atlantic Shores has worked the last 4+ years to accurately identify the locations of sensitive marine and coastal terrestrial habitats and fisheries that are within or in the vicinity of our Project footprint. These now highly studied areas are displayed below in Figure 11-2. [redacted] in Figure 11-9. [redacted] Figure 11-2, we [redacted]

Figure 11-2: Sensitive marine and coastal habitats



11.2.3 Local marine resources in our offshore [redacted]

To properly assess the potential effects of our activities on New Jersey's fisheries, Atlantic Shores has spent the last +4 years building a detailed understanding of the fisheries resources in our offshore Project Area through [redacted]. The section summarizes the work Atlantic Shores has progressed over the past years for the [redacted]. Additional details to these investigations, all environmental studies and results as well as mitigation measures and commitments can be found [redacted]

11.2.3.1 Finfish and pelagic macroinvertebrate resources and habitat

[redacted]

[101] ibid

[102] ibid

[redacted]

Ibid

[redacted]

11.2.3.2 Benthic and shellfish resources and habitat in our lease area

Figure 11-9).

[redacted]

11.2.4 Commercial fisheries in our offshore Project Area

[redacted]

11.2.4.1 Commercial fishing ports and target species

[redacted]

[117] New Jersey Prime Fishing Grounds. MARCO Data Portal (https://portal.midatlanticocean.org/).

[redacted]

11.2.4.2 Surfclam harvesting activities

[redacted]. Table 11-2 [redacted]

[redacted]

Table 11-2: Summary of commercial fisheries within the Atlantic Shores offshore Project Area

[redacted]

[119] ibid

[120] ibid

[redacted]

[redacted] Figure 11-5 [redacted]

[redacted]

[redacted] (Table 11-3), [redacted]

[redacted]

[redacted]

[redacted] Section 11.5.1). [redacted]

[redacted]

[128] ibid

Table 11-3: Federal fleet profile

Figure 11-6: Landings (left) and revenue (right) from the most effected

11.2.4.3 Other commercial fishing activities

Figure 11-7),

Figure 11-7:

[redacted] Figure 11-8 [redacted]

Figure 11-8: [redacted]

11.2.5 Recreational fisheries in our offshore Project Area

[redacted]

11.2.5.1 Recreational fishing ports and target species

[redacted] Section 11.3 [redacted]

11.2.5.2 Recreational fishing activity

[redacted]

[redacted] Figure 11-9. [redacted]

[redacted]

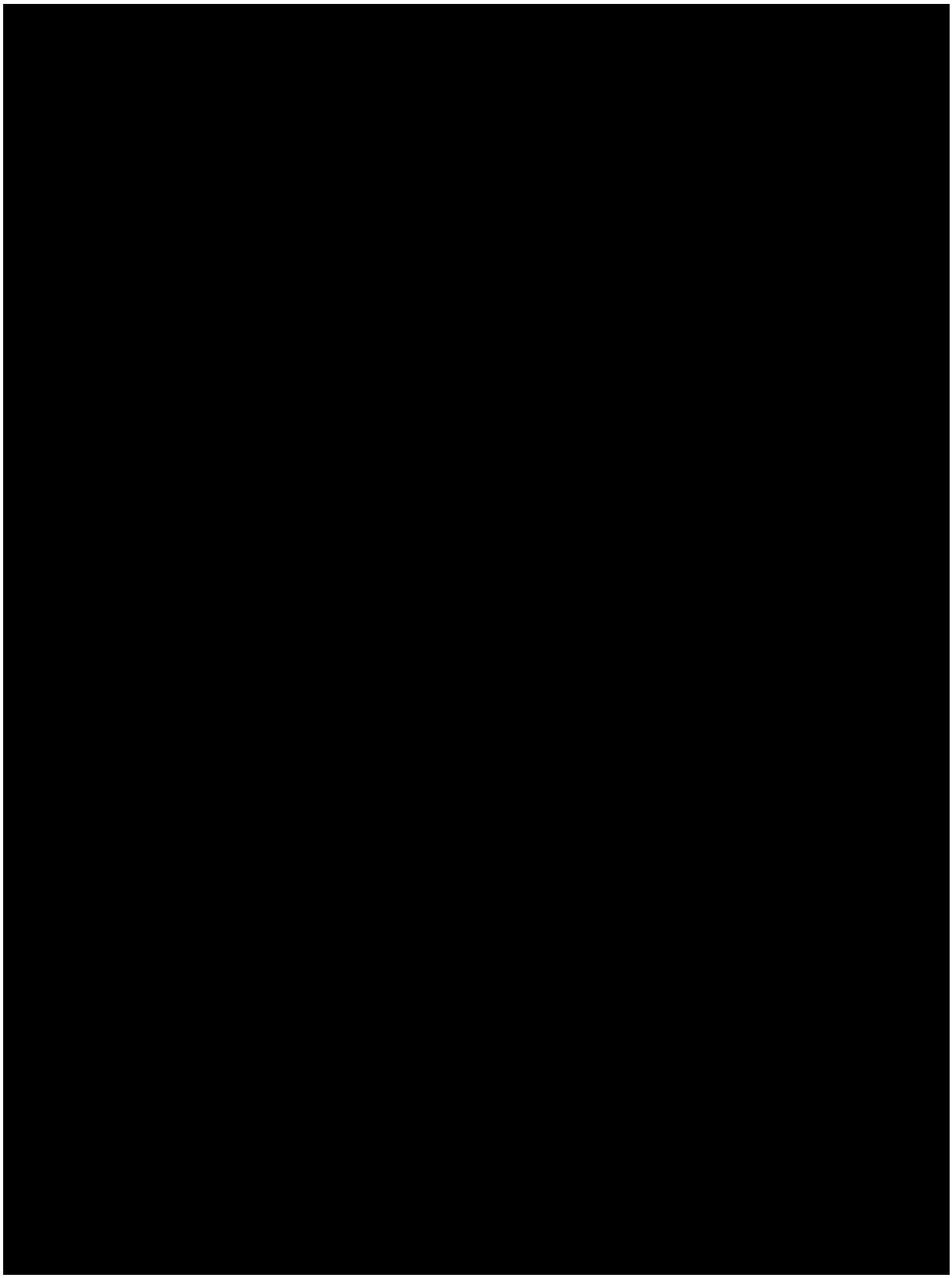
[redacted] Table 11-4 provides [redacted]

Table 11-4: Examples of New Jersey fishing tournaments

Tournament	Host
School's Out Tuna Tournament	South Jersey Tournaments
MidAtlantic Cup – Blue Marlin Tournament	South Jersey Tournaments
South Jersey Yacht Sales Offshore Tournament	South Jersey Tournaments
The MidAtlantic	South Jersey Tournaments
White Marlin Open	Ocean City
Offshore Open	Ocean City Marlin and Tuna Club
Bluefin Fever	Jersey Coast Shark Anglers
Beach Haven White Marlin Invitational	Beach Haven Marlin & Tuna Club
Beach Haven Tuna Open	Beach Haven Marlin and Tuna Club
Offshore Open	Manasquan River Marlin and Tuna Club
Atlantic City Quest for the Ring Championship	Atlantic City Sports Commission

Additionally, scuba dive spearfishing and free diving are done in New Jersey as part of the recreational fishing community. Dives are typically around some sort of structure, and these activities may take place around the offshore project infrastructure following construction. Atlantic Shores is engaging with the dive community to look at ways to safely dive around wind turbines in the future.

Figure 11-9: Major recreational fishing hotspots and fishing grounds



11.3 Engagement with key commercial and recreational fisheries

Atlantic Shores, through our core values, strives to be the example for responsible offshore wind development along the Atlantic Coast. We are actively bridging the gap between offshore wind developers and fishing industries at the local, regional, and national levels. The following sections highlight our key joint industry efforts to date. It remains our top priority to establish and maintain trust between the Project and the fisheries utilizing the Atlantic Shores Lease Area for the lifetime of our Project. This philosophy applies equally to all fisheries (commercial and recreational), business owners, and local communities with connections to fishing livelihoods.

[redacted]

[redacted] Section 11.2). [redacted]

[redacted] We commit to collaborate with New Jersey's fishing industry, preferably through regional fisheries groups, to review their Fisheries Communication Plan and supplement it as needed to ensure that it is sufficient to facilitate effective engagement at all stages of project development. The Fisheries Communication Plan should include engagement with the United States Regional Fishery Management Councils. The Fisheries Communication Plan shall be a publicly available document.

11.3.1 Fisheries engagement strategy

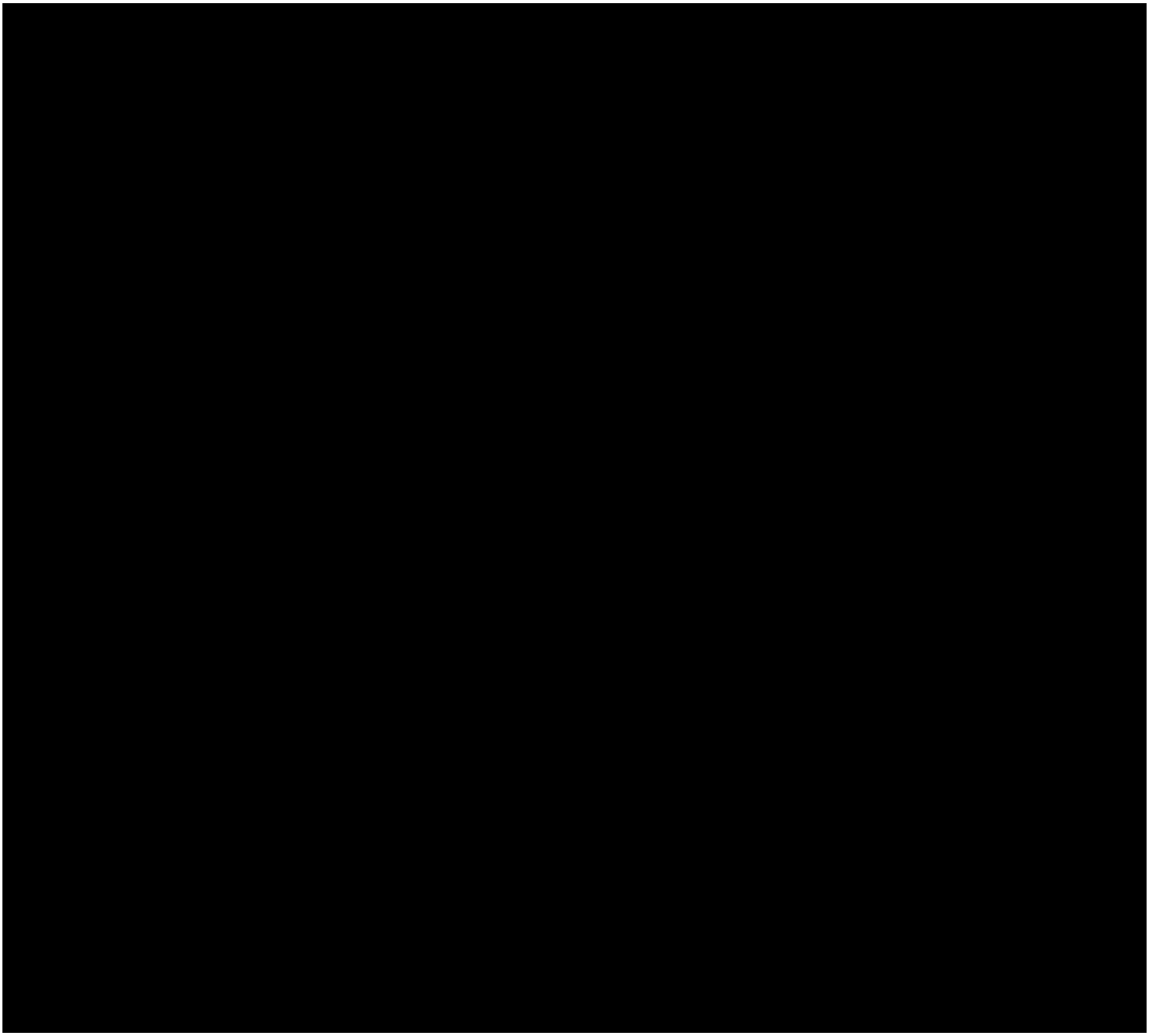
As detailed in Section 11.2, fishing interests in our offshore Project Area consist of a complex array of small, family businesses, multi-vessel companies and individuals. Vessels using the offshore Project Area may be resident in a local port, operate from a regional port outside of New Jersey and/or move seasonally between multiple ports. Atlantic Shores acknowledges these complexities and the challenges when attempting to obtain and disseminate critical information across large numbers of fisheries participants in a reliable, timely manner. Therefore, our engagement efforts have embraced the different needs of these fishing communities.

To support efficient and effective outreach and engagement with the fisheries, Atlantic Shores has developed a detailed Fisheries Communication Plan. This plan was created when we first acquired the original Lease OCS-A 0499. It has evolved over time as our Portfolio has grown and as we have learned more about our site, our fisheries stakeholders and their concerns and needs. We actively implement the plan based on the project phase. As stated in the plan, Atlantic Shores is committed to:

- Promoting the safety of mariners, offshore survey crews and construction crews transiting, working, and fishing in the area.
- Proactively obtaining fishing community inputs, filling in any data gaps regarding the historic, current, and potential fisheries opportunities in our Lease Area.
- Identifying potential adverse effects to regional fisheries groups and individuals and making informed decisions on how to avoid effects where possible and/or mitigate the extent of any effects.
- Quickly and fairly resolving fisheries related conflicts that may develop during the life for the Project.
- Building an authentic, trusting working relationship with fisheries and communities to inform the responsible design, development, implementation, and operation of the Project.
- Using established industry relationships to inform the development of the Lease Area as well as our interactions with fisheries.

11.3.2 Fisheries engagement team

Atlantic Shores has assembled a Fisheries Communication Team comprised of Atlantic Shores management, a FLO, a Recreational Fishing Industry Representatives (FIRs), and Fisheries Support Staff:

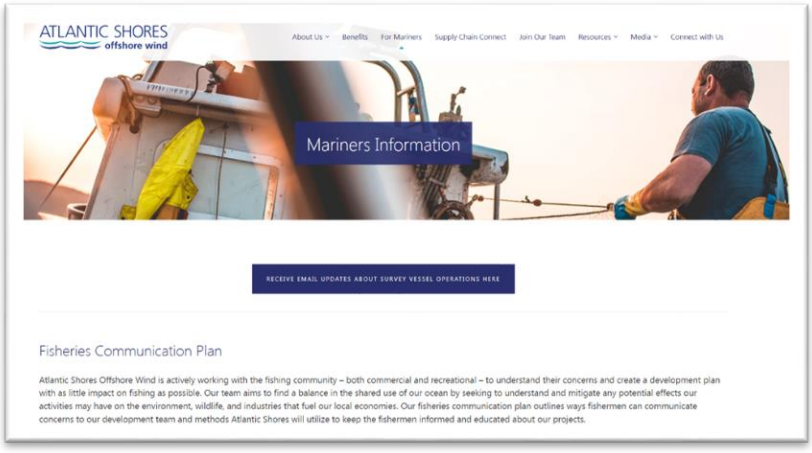


11.3.3 Fisheries engagement tools

Atlantic Shores is executing an array of general outreach methods and tools designed to engage and solicit feedback from the fishing community including:

- **Project Website:** Atlantic Shores developed a specific "For Mariners" page on our Project website (Figure 11-10), which is updated frequently. This page contains pertinent information tailored to commercial and recreational mariners based on their direct feedback. The website includes real-time buoy data displaying wind, wave, pressure and temperature information, as well as a live tracker of all Atlantic Shores vessels working in the offshore Project Area. It also provides the contact information for our FLO and FIRs, along with a 24-hour phone line to address any real-time operational conflicts and/or safety issues. Links to our online gear loss reporting procedures and form, Fisheries Communication Plan, and copies of our formal Notice to Mariners are also included for quick and easy accessibility.
- **Weekly Mariner Updates:** Atlantic Shores distributes local Mariners Updates at each phase of project development when vessels and/or equipment are deployed offshore. These operational awareness bulletins show the development area, depicted on local nautical charts, with a description of the assets in the area, the activities taking place, any safety parameters, timelines of the operation/deployment, the contact information to our FLO and Recreational FIR. Atlantic Shores does not rely only on the USCG standard distribution protocols; we distribute these notices on our website and more importantly, at the local docks and directly to commonly used boating websites.

Figure 11-10: Atlantic Shores "For Mariners" webpage



- **Quarterly Newsletter:** Atlantic Shores publishes a quarterly newsletter that documents development team updates, engagement activities, participant feedback received, and promotes upcoming events. Our newsletter currently goes

[132] Geographic Information System

out to over 1,000 stakeholder recipients including a comprehensive list of commercial and recreational mariners. Additionally, announcements and updates will be shared with print, online, and local news outlets, as well as through an email distribution list.

- **Informational Sessions/Open Houses/Industry Meetings:** Open houses and informational sessions are an effective means of introducing the Atlantic Shores Team and projects to a wide audience. Atlantic Shores has held regular meetings with commercial and recreational fishing industry leaders to share project information and solicit feedback since 2018. In late 2020 and early 2021, Atlantic Shores hosted targeted meetings with each fisheries group to solicit feedback on specific Project elements (i.e., turbine positions and locations of sensitive fishing spots/targets) and will extend these efforts throughout the development of the Project. Atlantic Shores and its representatives are also actively attending industry-sponsored meetings (e.g., RODA, Special Initiative for Offshore Wind, NYSERDA Bight Group, and ROSA) and meetings with Federal agencies (e.g., BOEM, NMFS), regional fisheries management councils (e.g., Mid-Atlantic Fishery Management Council, New England Fishery Management Council) and NJ DEP to stay abreast of the industry status, needs, and concerns at the Project and regional levels.
- **Gear Scouting:** Prior to and throughout any marine operations, Atlantic Shores works with our FLO to canvas the offshore Project Area for fixed fishing gear that could interact with Project operations. All gear is either catalogued for avoidance or, if the owner of the gear can be positively identified, our FLO will proactively engage with the mariners to establish the procedures for avoidance, and if possible, temporary relocation of the gear. The mariners are also informed of the process for filing claims associated with lost or damaged gear should an interaction inadvertently occur. As our lease area has grown, we have also begun to engage with other fishermen who are interested in doing similar scout work for Atlantic Shores.

Atlantic Shores recognizes that interactions with the fishing community will evolve over time as the nascent offshore wind industry matures. We will continue to evolve our relationships with fisherman and adapt how we manage their primary concerns as our Project matures.

11.3.4 Economic opportunities for fisheries

[redacted] Economic development plan). [redacted]

[redacted]

[redacted]

11.3.5 Joint industry collaborations

[redacted]

[redacted] 11.2.4.2, [redacted]

[redacted]t.

[redacted]

11.3.5.2 Other industry and research collaborations

Responsible Offshore Science Alliance (https://www.rosascience.org): Atlantic Shores is a founding member of the ROSA and actively serves on the Board of Directors, the Executive Committee, and the Advisory Council. Recognizing the need to provide for and advance regional research and monitoring of fisheries and offshore wind interactions in federal waters, Atlantic Shores committed early start-up funding [redacted]) toward the formation of ROSA and continues to fund the organization at comparative levels.

[redacted]

11.3.6 Continued data sharing efforts & investments

Sharing environmental resource data as described in the Data Management and Availability Plan (see Appendix 10-2) is only one element of Atlantic Shores' commitment to data sharing. We will support existing data sharing platforms and the creation of new communication tools that can aid in the dissemination of information to the local and regional maritime community at-large.

The desired result of these coordination efforts is to build interactive, open-access nautical chart layers that can be updated in real-time with offshore wind project information. These layers can be downloaded by mariners to their vessels' navigational equipment for real-time notifications about current developer activities, such as marine surveys or vessel transits. The information promotes informed decision making because data will include the types of offshore wind project vessels working in a specific area so that fishing activities (i.e., deployment and recovery of gear) can react in a timely manner, thereby reducing the risk of gear loss and/or entanglements.

An example of the work of Atlantic Shores in this respect is the Geodata engagement platform Virgeo (formely GAIA), detailed in Appendix 11-6[133].

[133] Article co-authored by Fugro/Atlantic Shores and published in Sea Technology, also available here: Sea Technology : April 2022 (mydigitalpublication.com)

[redacted]

11.4 Mitigation of potential impacts to marine resources and fisheries

Atlantic Shores has evaluated the potential positive and negative effects of its activities on New Jersey's marine fisheries resources including those that are considered important to New Jersey's commercial and recreational fishing industries. These effects are identified for all of the Project's phases: pre-construction, construction, Operation and Maintenance (O&M) and decommissioning. The evaluation not only supports the ongoing Federal, State, and local project siting, permitting and environmental effect review processes, but determines which of our activities may have the greatest influences over these resources and how we can best mitigate the negative effects or enhance those that add benefit. We commit to developing an Adaptive Fisheries Mitigation Plan. This plan will be informed through input from stakeholders and in collaboration with BP, NJ DEP, NOAA Fisheries, and regional science entities. Working with the BPU and DEP, we will set milestones to create and issue this plan. This document will be publicly available.

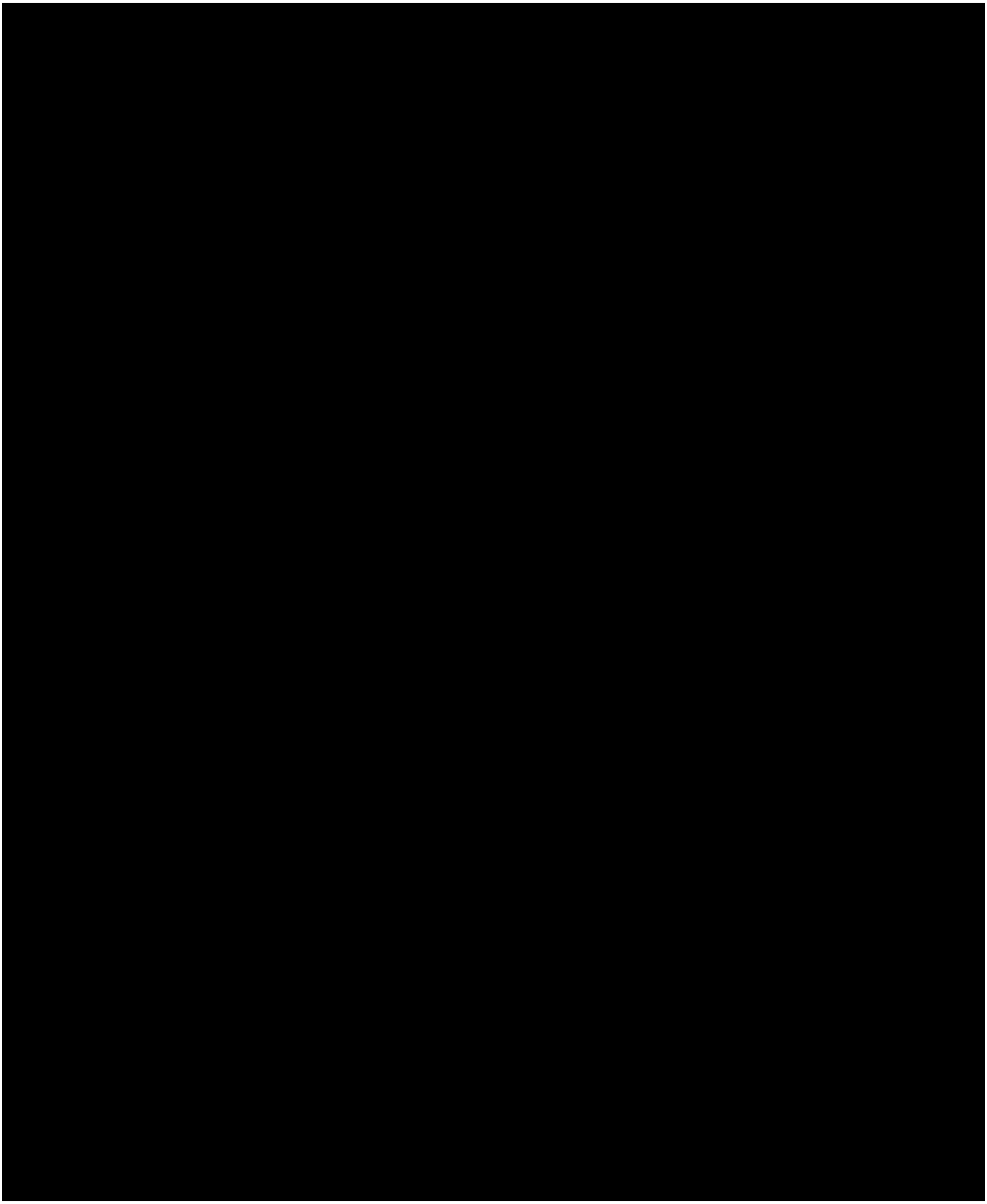
Each resource discussion below highlights Atlantic Shores' resource protection priorities as identified through our research and collaboration with governmental agencies, eNGOs, and fisheries partners. These individual discussions also explain the project-resource interactions Atlantic Shores believes require attention, targeted mitigation and/or monitoring. It is important to note that the discussions below are only summaries of the extensive work we have undertaken to adequately assess the influence of our Project on these individual resources. Further information and reports supporting these individual studies

[redacted]

11.4.1 Local marine resources

11.4.1.1 Identification of potential impacts

[redacted]



[redacted]

- [redacted] 11.4.2.1.

11.4.1.2 Mitigation measures of potential impacts

Atlantic Shores is taking active measures to site project facilities and to select techniques and tools that avoid effects to important finfish, invertebrates and benthic habitats. In addition to continuing our existing maritime operation programs to study important habitats, our key mitigation and monitoring strategies that will be implement throughout all phases of the Project (pre-construction, construction, operation and maintenance, decommissioning) include the following:

[redacted]

[redacted]

[redacted]

- [redacted] Section 11.2). [redacted]
- [redacted]

  The Fisheries Monitoring Plan shall be informed by collaboration with NJ BPU, the NJ DEP, NOAA Fisheries, and regional science entities.

[redacted]

[redacted]

[redacted]

11.4.2 Commercial and recreational fisheries

[redacted]

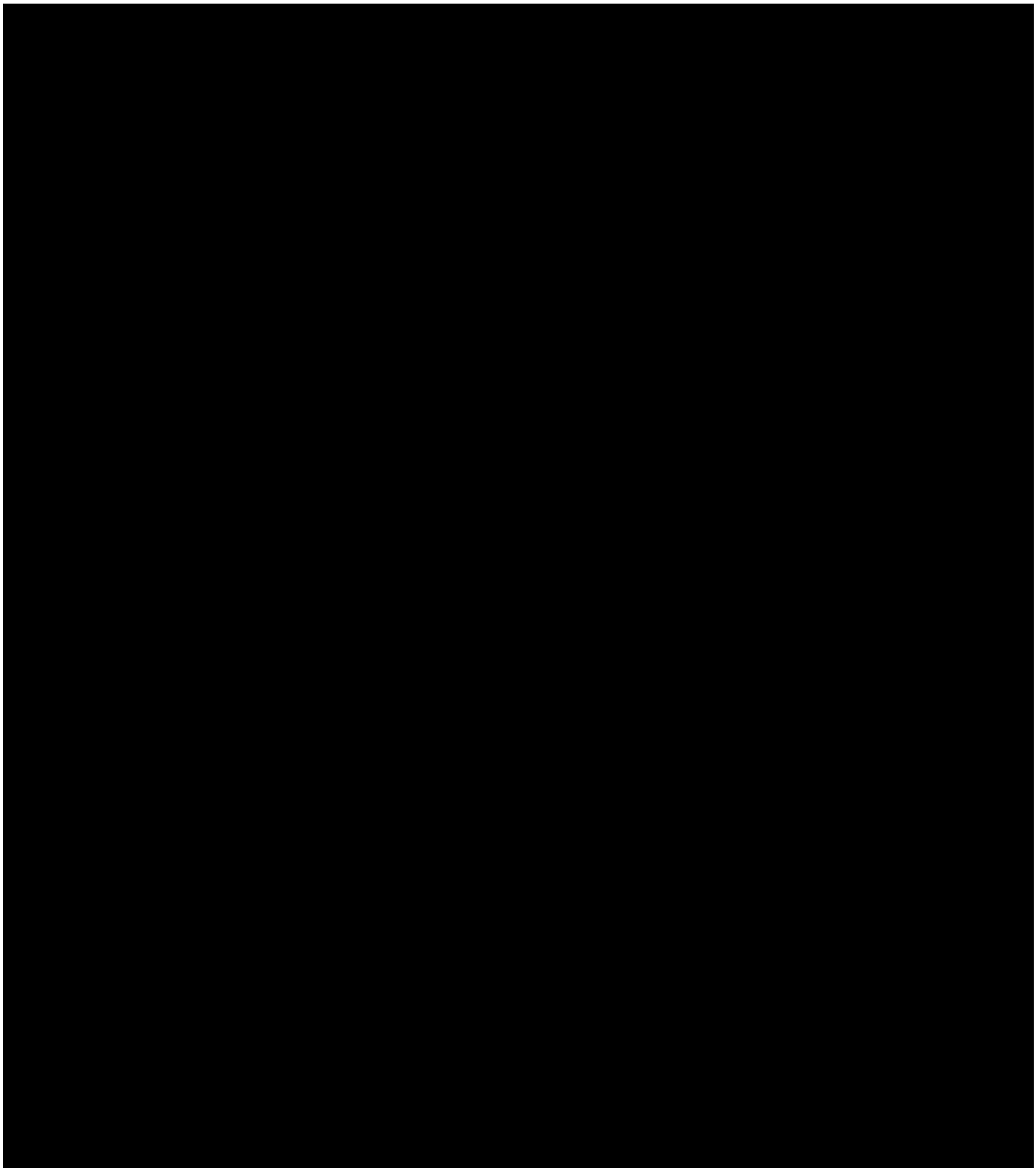
11.4.2.1 Identification of potential impacts

Since 2019, Atlantic Shores has invested considerable time and energy to listening, understanding, and evaluating the regional fisheries' concerns regarding the potential interactions with New Jersey's marine fisheries resources. These effects are identified and considered for all phases: pre-construction, construction, O&M, decommissioning. [redacted]

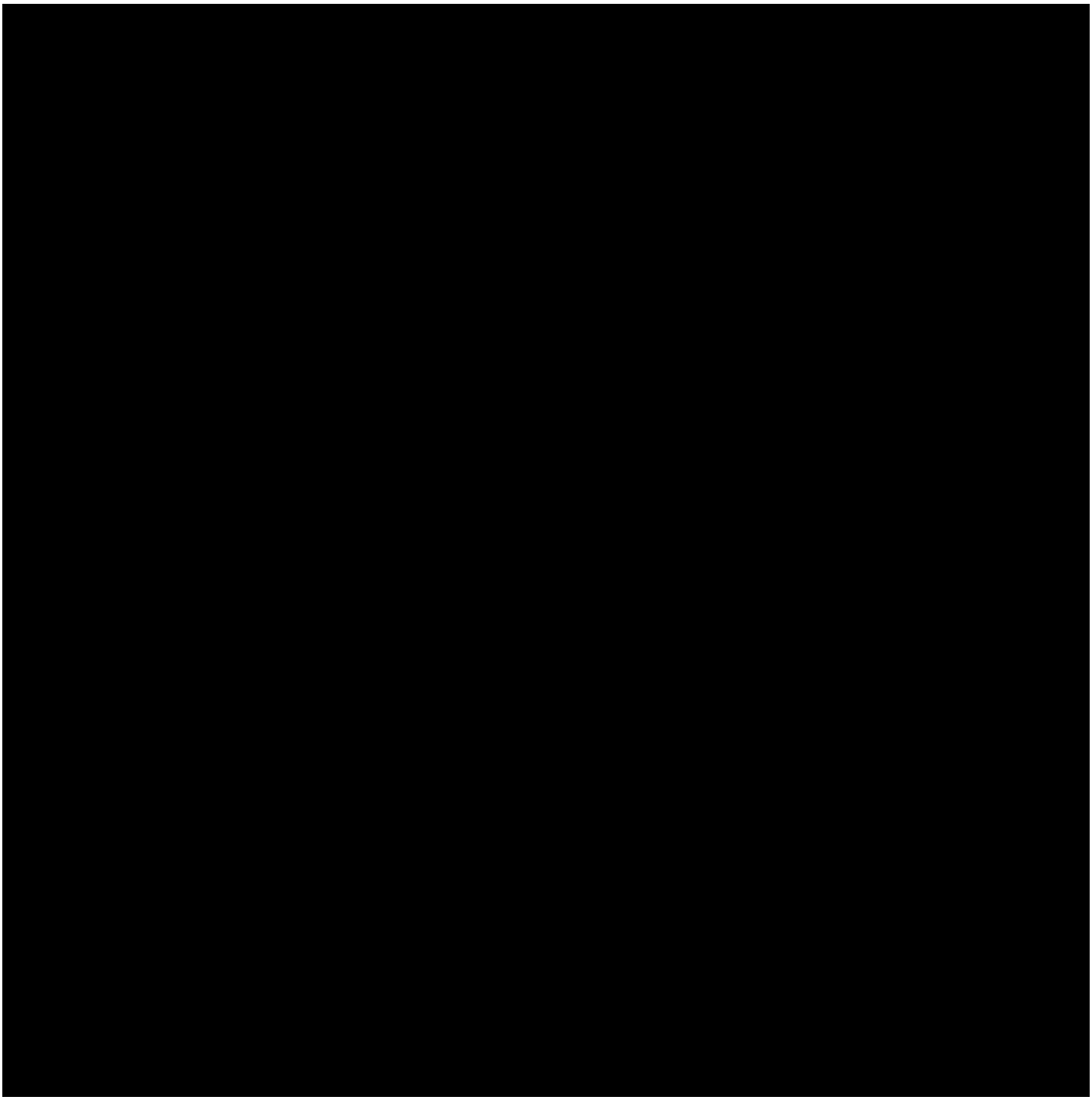
[redacted]

11.4.2.2 Mitigation of potential impacts: accommodations to fishing for efficient and safe access to fishing grounds

[140] BOEM. 2012. Commercial wind lease issuance and site assessment activities on the Atlantic Outer Continental Shelf Offshore Rhode Island and Massachusetts: environmental assessment.



[141]



11.4.2.3 Plan for addressing loss of or damage to fishing gear or vessels

As part of our efforts to be a good neighbor, Atlantic Shores developed a [redacted] on

[redacted]

[redacted] **Figure** 11-12**)** [redacted]

[redacted]

[142] BOEM. 2022. Draft Guidelines for Mitigating Impacts to Commercial and Recreational Fisheries on the Outer Continental Shelf Pursuant to 30 CFR Part 585. Available from: https://www.boem.gov/renewable-energy/reducing-or-avoiding-impacts-offshore-wind-energy-fisheries

Figure 11-12: [redacted]

11.4.2.4 Assessment of the full economic value of commercial and recreational fisheries in the offshore Project Area

11.4.3). 10 Environmental protection plan and emission impact)

11.4.3 Cumulative impacts

As stated previously, Atlantic Shores works collaboratively with agencies, eNGOs and universities to design studies that inform the collective understanding of New Jersey's ocean and coastal environments not only at the project scale but at a regional scale. Our studies build off the NJ DEP Ecological Baseline Studies and integrate with other regional efforts to better understand fish and fisheries off New Jersey and throughout the Mid-Atlantic Bight. The studies we invest in complement

11.5 Research initiatives to protect and restore marine life and fisheries

11.5.1 Atlantic Shores' initiatives to advance fisheries research

Existing research, data and modeling trends indicate fisheries along the Atlantic Seaboard are both changing naturally and influenced by human activity and the effects of changing climate, including warming of ocean temperatures and rises in ocean acidification.[145] As such, in addition to baseline data collection and pre-construction surveys discussed in Section 11.2.1, Atlantic Shores is progressing the following research collaborations and initiatives (summarized in Table 11-5) focused on

Atlantic Shores has precedent and experience from our Parent Company, Shell New Energies, in how to develop and scale these efforts.

[145] US Environmental Protection Agency. 2022. Climate Change Indicators: Oceans (https://www.epa.gov/climate-indicators/oceans).

[redacted]

Leveraging these best practices from our Shareholders and paring this with knowledge and expertise of our academic partners in New Jersey shows that Atlantic Shores has the expertise and motivation to determine how we can leverage our Project, and its components over its lifetime.

[redacted]

[redacted] Figure 11-13 [redacted]

[redacted]

Figure 11-13: [redacted]

[redacted]

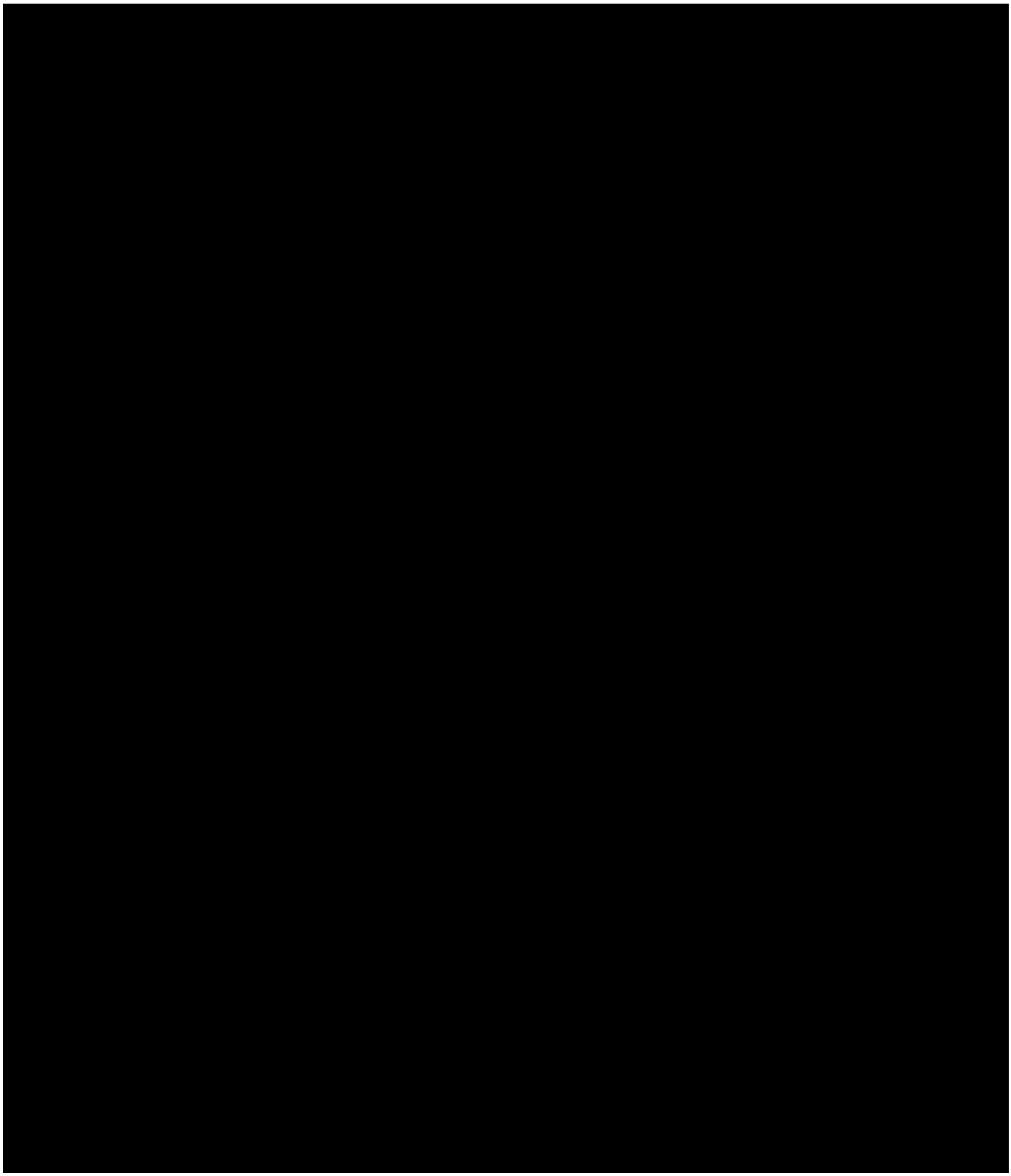


Figure 11-14: NJ DEP artificial reefs (right) and Atlantic Shores Leases (left in yellow)

Mid-Atlantic Cold Pool (MACP) Real-time Ocean Observations: The MACP is a key seasonal oceanographic feature in the Mid-Atlantic Bight that results in swings in surface temperature from winter to summer that drives strong transitions in ocean stratification. The cold pool initially develops in spring of each year as remnant winter water over the shelf is capped by developing stratification created by increased solar insolation, freshwater runoff, and reduced wind mixing.[146] The seasonal evolution of the MACP plays an important function in the Mid-Atlantic Bight ecosystem. The intense ocean variability drives an equally variable ecosystem from the primary producers[147] to the highly migratory fisheries throughout the Mid-Atlantic renewable energy Lease Areas. The tight coupling between the ocean conditions and the habitat preference of the commercially and recreationally targeted species leads to a distribution of fishing effort that can significantly vary from season to season and year to year. Rutgers and its collaborators have shown that many mobile marine species in the Mid-Atlantic Bight respond to changes in temperature in many ways – including changes in fecundity, mortality, migration patterns and timing, and stock distributions. Real-time ocean observations are important in tracking the formation, persistence, and seasonality of the MACP. Collected data from Atlantic Shores

In addition to the above noted meteorological and oceanographic data,

[146] Lentz et. al 2003

[147] Malone et. al 1988

As discussed further in the Infrastructure Monitoring Plan in Appendix 10-3 Atlantic Shores is and will continue to consider and progress opportunities for the utilization of offshore infrastructure to support continued data collection and monitoring during the construction and operational phases of development to continue to build the collective scientific knowledge.

Table 11-5 below presents an overview of our initiatives funding at the Portfolio level, [redacted]

Table 11-5: [redacted]

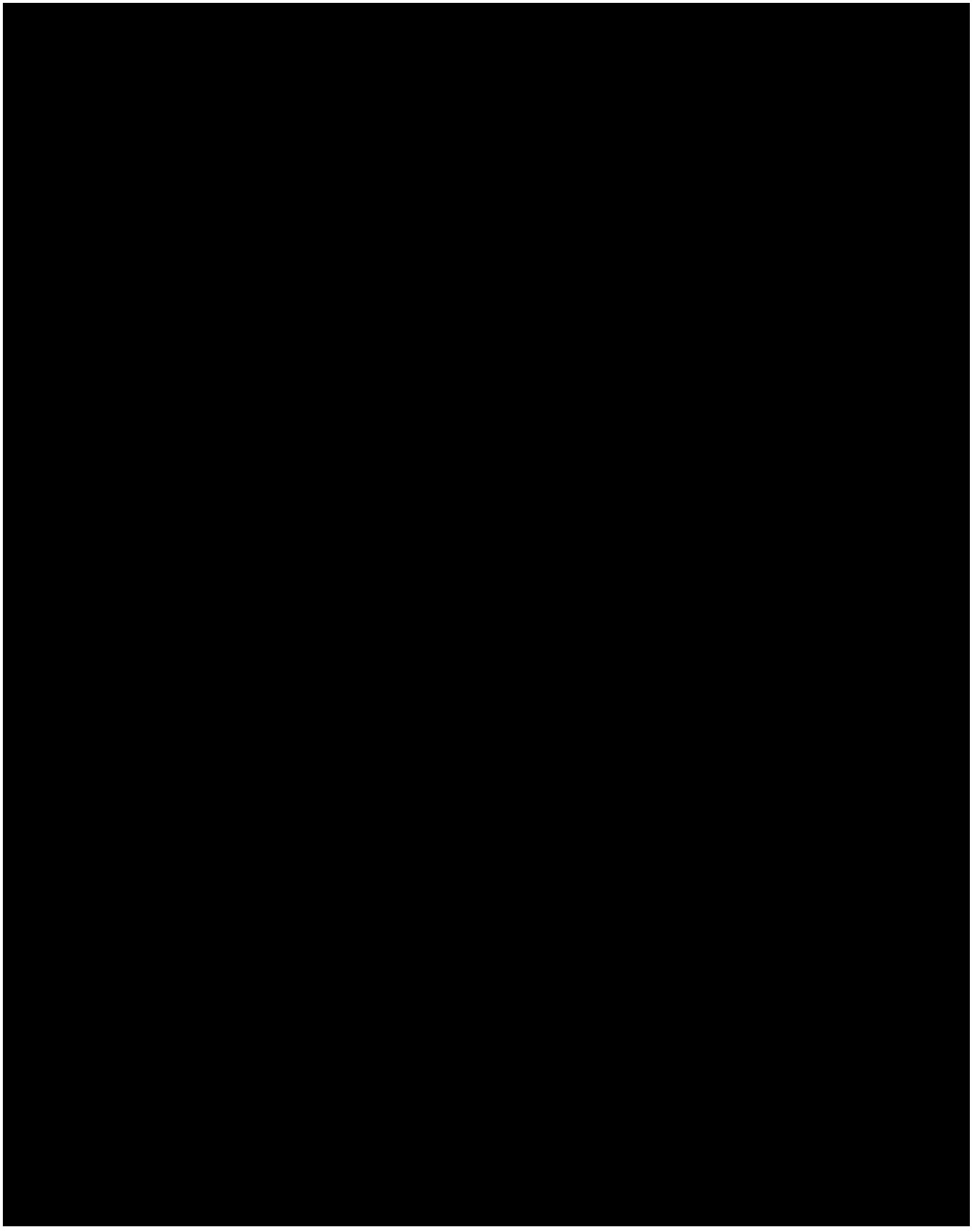
[redacted]

[redacted]

11.5.2 Regional research and monitoring fee

The projects outlined above are in addition to the required regional research and monitoring fee outlined in Section 3.10 of the SGD. Though separate, these projects seek to support the goal of the New Jersey's RMI to protect and responsibly manage New Jersey's coastal and marine resources while progressing offshore wind development as well as aligning with current priorities being forwarded by the RMI. Atlantic Shores is proud of the collaborations we have had to date with the RMI and if awarded, Atlantic Shores welcomes the opportunity to provide both financial and technical support as well as work with the RMI along with research institutions, other industry (including key fisheries), regional science entities and members of the New Jersey Offshore Wind Environmental Resources Working Group to identify and prioritize research and monitoring needs to be funded with the $10,000 per MW awarded. We would seek to leverage our team's work guiding ROSA in managing state mitigation funds to assist RMI in this extensive effort.

[redacted]



12 Project timeline

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Solicitation requirements

Table 12-1 describes the Solicitation requirements of this chapter as put forth in the SGD, as well as the relevant sections addressing these requirements.

Table 12-1: Project timeline - references for Solicitation requirements

Key Solicitation requirements	Application reference
A timeline for the permitting, licensing, and construction of the Project (N.J.A.C. 14:8-6.5(a)(13))	Sections 12.3 and 12.4
A detailed implementation plan and schedule that highlights key milestone activities and completion dates during the permitting, financing, design, equipment solicitation, manufacturing, shipping, assembly, in-field installation, testing, equipment commissioning and service start-up (N.J.A.C. 14:8-6.5(a)(2))	Sections 12.3 and 12.4 / Appendices 12-1 to 12-2
Indicate the equipment's delivery time once an order has been placed (N.J.A.C. 14:8-6.5(a)(2)(i)(12)) (Include this information for wind turbines, foundations, undersea cables, and all other key Project components.)	Section 12.3.2
Specify the expected time requirements in the aggregate from start to finish as well as the time required to accomplish each specific activity related to Project design, resource monitoring, impact studies, permitting, construction and decommissioning activities, with associated milestones delineated for each category of activity (N.J.A.C. 14:8-6.5(a)(13))	Sections 12.3 and 12.4 / Appendices 12-1 to 12-2
Identify potential sources of delays in the Project schedule, and how those delays could be mitigated, or if not mitigated, how they would affect the overall Project schedule (N.J.A.C. 14:8-6.5(a)(16))	Sections 12.2, 12.5 and 12.6
A timeline for development of the Prebuild Infrastructure, including engineering, siting/permitting, procurement, construction, back feed/testing, and the start of commercial operation (N.J.A.C. 14:8-6.5(a)(16))	Section 12.4

12.1 Summary

A robust, reliable, and flexible plan is required to ensure that our offshore wind Project and PBI are delivered safely and within schedule to meet the clean energy goals of New Jersey. We were able to substantially leverage our experience from Project 1 (including the regulatory progress and commercial agreements already in place), as well as the experience of our Shareholders (see Chapter 1 - Applicant information) in the development of our proposed Project and PBI timelines and plans presented in this section. [redacted] proven tools and methodologies, local knowledge, stakeholder feedback, and a rigorous management process to refine and test these plans. Primary focus will always remain on health, safety, and environmental protection.

Section 12.2 presents **the main, underlying schedule assumptions** which serve as a basis to build a feasible schedule for our proposed [redacted] and PBI. [redacted]

Section 12.3 outlines our detailed **implementation plans for** [redacted] including description of key activities and milestones and a comprehensive schedule. [redacted]

Section 12.4 outlines the **implementation plan of the PBI**, including key activities and milestones. [redacted] 10 - Environmental protection plan and emission impact) [redacted]

Section 12.5 elaborates on **key schedule risks and opportunities** associated with the offshore wind Project and the PBI. Our deep understanding and assessment of these risks, based on our Project 1 experience and our team's record in similar large-scale infrastructure projects supports deliverability of our proposed CODs and enables robust mitigation measures identification and implementation. In general, we are striving to remove uncertainty where possible, understand potential impacts as early as possible, and retain the ability to adapt and recover when events are outside of our control, [redacted]

Section 12.6 [redacted]

Project timeline | Our commitment to New Jersey

- Full Project COD planned in [redacted]
- Completion of the PBI as early as [redacted]
- Detailed, reliable and mature assumptions and schedules [redacted]
- [redacted]
- Continuous implementation of learnings and experience from ongoing Project 1

[redacted]

- Continuous commitment to transparency with the NJ BPU on schedule progress via monthly meetings and other reporting requirements
- Strong commitment to deliver on our proposed COD, and to maintain our solution-oriented approach to schedule challenges where possible[redacted]

[redacted]

12.2 Main schedule assumptions

As part of our efforts to build a realistic schedule, Atlantic Shores has worked extensively to secure input from key regulators and stakeholders, industry experts, suppliers and contractors, as well as lenders and our Shareholders to understand their requirements, expectations, and internal constraints.

[redacted] 14 [redacted] Permitting plan [redacted]

[redacted]

The main schedule assumptions common to both [redacted] and the PBI are detailed in Table 12-2. These represent baseline assumptions – however we will actively seek opportunities to optimize activities or adjust the activities to respond to any changes. Due to our unmatched efforts over the past years to mature both the Project and the PBI, we are confident we are presenting the most reasonable and based assumptions underlying our proposed schedules.

Table 12-2: Main schedule assumptions for different activities

Activity	Assumption
[redacted]	

Activity	Assumption
[redacted]	

12.3 Implementation plan of the offshore wind Project

Atlantic Shores has developed a robust implementation plan for the proposed Project, addressing each of the key activities necessary to progress the Project from its current development status to commercial operation. Atlantic Shores will focus on several guiding principles which deliver value to New Jersey and support the state's clean energy goals throughout this process:

- Focus on health, safety, and environmental protection
- Ensure compliance with all relevant regulations
- Collaborate with regulators, partners, and stakeholders to identify reliable pathways to deliver the Project
- Understand risks and opportunities, and develop strategies to maintain and optimize deliverability
- Maximize value to the state of New Jersey by aligning Project's goals with the Offshore Wind Strategic Plan and the Energy Master Plan
- Minimize impact on ratepayers by maintaining strict cost control throughout all phases of the implementation

12.3.1 Key activities and milestones

12.3.1.1 Key milestones including COD

Table 12-3 identifies the key milestones for [redacted] presented in this Application. [redacted]

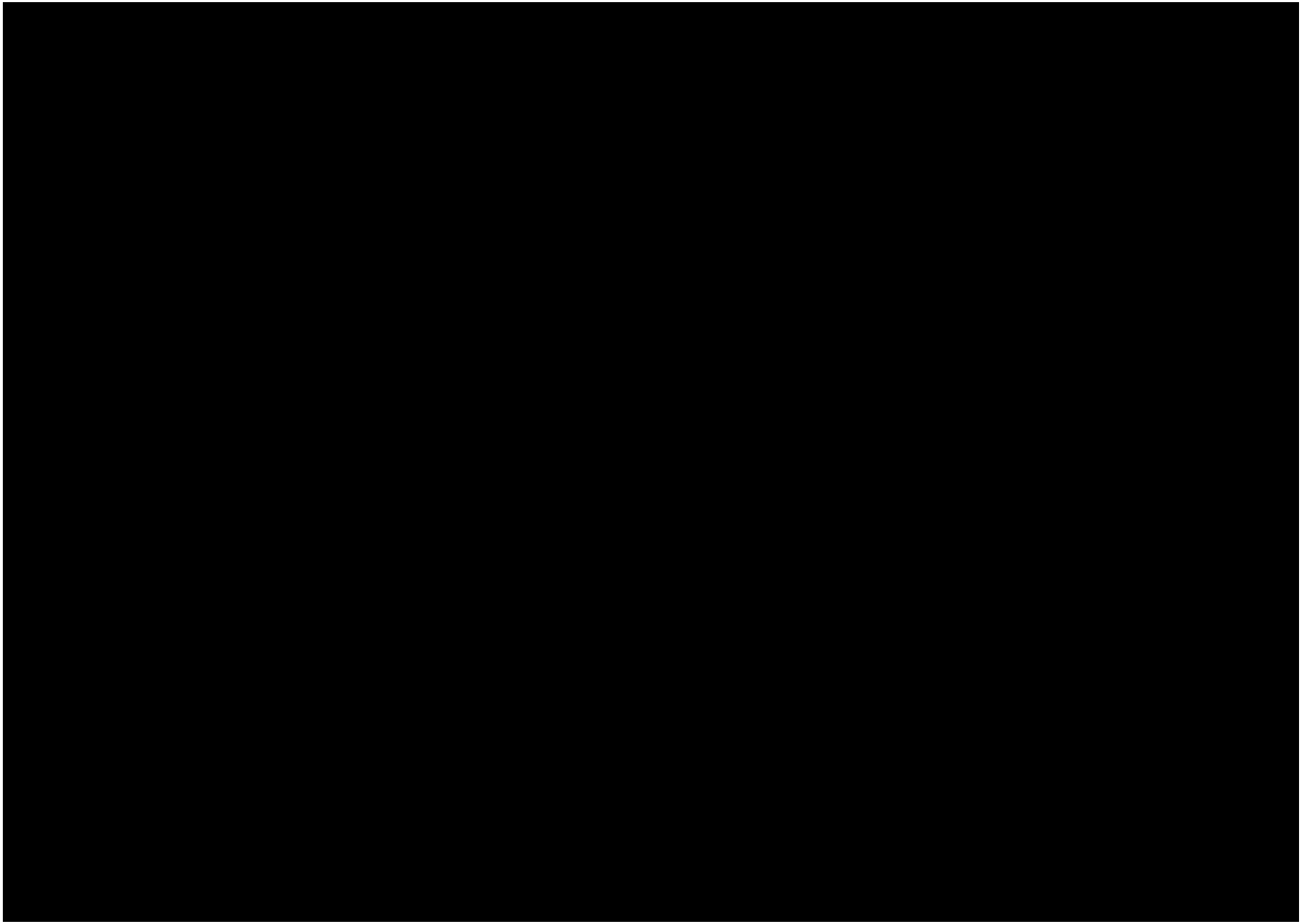
Table 12-3: Key milestones

Key Milestones	Key milestones
[redacted]	

12.3.2 Detailed schedule

A detailed schedule with all key activities, milestones, and completion dates during permitting, financing, design, equipment solicitation, manufacturing, shipping, assembly, in-field installation, testing, equipment commissioning, and service start-up is attached for [redacted] Appendix 12-1.

A summary Gantt chart is presented in Figure 12-1. It identifies the start date, finish date, and required time of key activities related to design, resource monitoring, impact studies, permitting, and construction, with main milestones delineated. The timeline of decommissioning, past the 30-year project lifetime, is addressed in Chapter 16 - Decommissioning plan. The assumptions informing our schedule are detailed in the following subsections.



12.3.2.1 Site condition data gathering and analysis

[redacted]

Figure 12-2 [redacted]

Figure 12-2: [redacted]

12.3.2.2 COP and other permitting preparation, review, and approval

[redacted]

Schedules for State and other Federal permits are further detailed in Chapter 14 - Permitting plan.

12.3.2.3 Project design and verification

[redacted]

12.3.2.4 Key supplier contracting and fabrication

[redacted]

In addition, Table 12-4 indicates the key equipment's delivery time once an order has been placed, which was used as basis of the schedules. These durations are indicative and subject to final procurement agreements with suppliers.

Table 12-4: Equipment and material delivery duration in months

	Delivery duration in months	
From order placed:	to 1st delivery	to final delivery
[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]

12.3.2.5 Financing and FID

[redacted]

12.3.2.6 Port availability and Project installation

[redacted]

[redacted]

[redacted]

12.4 Implementation plan of the Prebuild Infrastructure

[redacted]

12.4.1 Key activities and milestones

Key milestones	PBI
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]

12.4.2 Detailed schedule

A detailed schedule with all key activities, milestones, and completion dates during permitting, financing, design, material procurement, and construction is attached for the PBI as Appendix 12-2. In addition, the Summary Gantt Chart is shown in Figure 12-3.

[redacted]

[redacted]

Figure 12-3: L1 Gantt chart for PBI

12.4.2.1 Site condition data gathering and analysis

[redacted] 2[redacted] Project description and Chapter 13 - Interconnection plan, [redacted]

12.4.2.2 Engineering, design, and verification

[redacted]

12.4.2.3 Siting and permitting

[redacted]

12.4.2.4 Construction

[redacted]

[redacted]

12.5 Key schedule risks and mitigation plans

Atlantic Shores has built robust implementation plans which consider constraints, anticipate risks, and retain flexibility to adapt to external events. Atlantic Shores utilizes its specific risk tools to understand potential impacts from external events on the offshore wind Project and PBI, and to define strategies to increase the resilience of the implementation plans.

[redacted]

Table 12-5: Key schedule risks and opportunities

Short description	Mitigation plan
[redacted]	

Short description	Mitigation plan
[redacted]	

As mentioned above, these risks are not an exhaustive list but rather a selection of key foreseeable events that are being closely monitored and actively mitigated.

12.6 Schedule contingency

[redacted]

13 Interconnection plan

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Solicitation requirements

Table 13-1 describes the Solicitation requirements of this chapter as put forth in the SGD, as well as the relevant sections addressing these requirements.

Table 13-1: Interconnection plan - references for Solicitation requirements

Key Solicitation requirements	Application reference
A plan for interconnection, including engineering specifications and costs (N.J.A.C. 14:8-6.5(a)(14)) and how the project intends to utilize the SAA Capability (This plan must include all required content listed in Attachment 10 herein.)	Sections 13.2, 13.3 and 13.4
Applicants shall show that they are currently in the PJM queue or that the Project is PJM queue eligible (N.J.A.C. 14:8-6.5(a)(10)(ii)), and when the Project would expect to be eligible to receive Capacity Injection Rights associated with the SAA	Section 13.3.1
Document tasks required and discuss issues associated with electrical interconnection, including the distance between the Project and the specified point to interconnect with the electrical grid (N.J.A.C. 14:8-6.5(a)(14)(i)) (This plan must include all required content listed in Attachment 10 herein.)	Section 13.4
Land acquisition requirements, new equipment to be installed, upgrades to existing equipment required, and any feasibility studies required and the timeframe for review must be identified (N.J.A.C. 14:8-6.5(a)(14)(ii)) (Any identified upgrades must take into account the Option 1a upgrades as specified in the SAA Order.)	Section 13.5.2.3
Indicate the location of transmission lines and all points of interconnection to the PJM system serving New Jersey (N.J.A.C. 14:8-6.5(a)(14)(v)) (Per the SAA Order, the POI is required to be the LCS.)	Sections 13.4.2 and 13.5.2.1
The capacity the Project plans to request under the terms and conditions delineated in the SAA Order and the SAA Agreement, including an explanation of how this capacity value relates to the energy production profile of the Project (N.J.A.C. 14:8-6.5(a)(16))	Section 13.2
If applicable, specification of which LCS circuit (1,200 MW Larrabee 230 kV, 1,200 MW Atlantic 230 kV, or 1,342 MW Smithburg 500 kV) the Project proposes to utilize (The Board, in its sole discretion, reserves the right to assign Projects to different SAA circuits than the Project proposes.) (N.J.A.C. 14:8-6.5(a)(16))	Sections 13.2 and 13.3.3
Provisions for reactive compensation and harmonic filtering at the HVDC converter stations at the LCS (N.J.A.C. 14:8-6.5(a)(16))	Section 13.4.1.2
For Applicants proposing capacity beyond that accommodated by SAA Capability, the incremental capacity the Project plans to utilize, including an explanation of how this capacity value relates to the energy production profile of the project (N.J.A.C. 14:8-6.5(a)(16))	n/a
For Applicants proposing capacity beyond that accommodated by SAA Capability, supporting documentation for the P50 and P90 estimates of the TSUC reported in the Application Form (TSUC are the onshore transmission owner upgrades necessitated by the Project's interconnection request. They do not include the offshore substation and all associated facilities up to the transmission owner's point of interconnection. The P90 estimate of TSUC represents a worse case estimate of required system upgrade costs to accommodate the Project injection at one or more points of interconnection as set forth in the Application. The	n/a

Applicant is responsible for defining the operating conditions that would be likely to materially increase TSUC relative to the P50 estimate of TSUC.) (N.J.A.C. 14:8-6.5(a)(16))	
For Applicants proposing capacity beyond that accommodated by SAA Capability, any draft or final interconnection studies conducted by PJM, or by a study conducted by a third party, including the Feasibility Study, System Impact Study, and Facility Study relating to the proposed Project (Any Critical Energy Infrastructure Information ("CEII") may be filed subject to the confidentiality claims discussed in Section 2.5.) (N.J.A.C. 14:8-6.5(a)(16))	n/a
Proposed detailed legal structures to govern the relationship among the SAA developer, Prebuild Infrastructure developer, and other offshore wind developer(s) utilizing the Prebuild Infrastructure, as applicable. The proposal should include the key terms of such relationships, to the extent that such Applicant determines such structures to be necessary or desirable to attract financing and enhance commercial deliverability for its applicable scope(s), subject to Board modification and approval. A non-exhaustive list of those uncertainties, for illustrative purposes, is as follows (Such terms and conditions are expected to be included in any Board Order regarding the approval of a Qualified Project.): Recourse in the event a project COD is delayed due to delays on the Prebuild Infrastructure or SAA improvements required to be built by another entity or Applicant; Nature of long-term property interests in infrastructure built by another developer; Access to the Prebuild Infrastructure during and after construction of an offshore wind project utilizing the Prebuild Infrastructure; Communication protocol among all the parties—SAA developer, Prebuild Infrastructure developer, other offshore wind developer(s) utilizing the Prebuild Infrastructure, and if applicable, the Board, Board Staff and PJM; Allocation of ongoing maintenance responsibility for infrastructure; Applicability of limitation of liability and warranty performance requirements; Remedies for design defects; and Permitting coordination, including in connection with COP approvals and local land use and environmental constraints; (N.J.A.C. 14:8-6.5(a)(16))	Section 13.5.7
Prebuild Infrastructure design parameters as listed in Attachment 10 (N.J.A.C. 14:8-6.5(a)(16))	Section 13.5.2
Offshore Transmission Network preparation requirements as listed in Attachment 11 (N.J.A.C. 14:8-6.5(a)(16))	Section 13.6
(Described in Attachment 10) Construction activities and sequencing will have the following general requirements: • Each Qualified Project will construct its own offshore facilities including, but not limited to, wind turbines, intra-array cables, offshore substation(s) and radial cable to shore. • The Prebuild Infrastructure to accommodate HVDC cables for four (4) total Circuits may be constructed by a Qualified Project selected in the Third Solicitation. The Prebuild Infrastructure will include the HDD bores under the shoreline interface from offshore cofferdams to Transition Vaults at the Sea Girt NGTC landfall. Consistent with the capacity injection rights that will be made available at the LCS through the SAA, the total capacity to be delivered via the Prebuild Infrastructure to the LCS is expected to be approximately 4,000 MW. However, the Prebuild Infrastructure should be designed to accommodate up to 6,000 MW (up to 1,500 MW in each of the four (4) Circuits). • Each Qualified Project utilizing the Prebuild Infrastructure will construct its own HVDC converter station on land specifically allocated to each Qualified Project, located at or near the LCS. • Each Qualified Project utilizing the Prebuild Infrastructure will pull its onshore HVDC cable(s) through its allocated onshore Duct Banks and Cable Vaults inside the	Sections 13.4 and 13.5.2

Prebuild Infrastructure to its designated Direct Current ("DC") converter station located at or near the LCS without additional onshore landing, trenching and drilling. Only the cable pull-through effort will be required using the previously constructed Duct Banks and Cable Vaults.	
(Described in Attachment 10 - Reliability Considerations) Design of the Prebuild Infrastructure, as well as the entire HVDC transmission system between the offshore platforms and the LCS, will need to ensure that each individual transmission Circuit can be installed, operated, and maintained independently. There cannot be a single or common point of failure that would result in an outage of more than one Circuit at one time for a single event (Please reference the NERC Category P7 contingency, which deals with "common structure" outages, for more information. See https://www.nerc.com/pa/Stand/Reliability%20Standards/TPL-001-5.pdf.). This aspect of the Prebuild design is of critical importance.	Sections 13.5.2 and 13.5.4
(Described in Attachment 10 - Basic HVDC System Characteristics) The Third Solicitation requires HVDC-based cable and converter technology. Future Solicitations for Projects that will utilize the Prebuild Infrastructure will also require HVDC technology. The technical and thermal limitations of HVAC-based technology at the intended target Project sizes, therefore, preclude use of HVAC technology for the proposed Prebuild concept design.	Sections 13.4.1.3 and 13.5.2
(Described in Attachment 10 - Basic HVDC System Characteristics) Additionally, the Applicant should consider HVDC technology deployment possibilities for the proposed Prebuild design that will enable easy integration of other Qualified Projects utilizing the Prebuild Infrastructure. The duct banks should be able to accommodate HVDC cables from all major vendors, in addition to all available voltage levels.	Section 13.5.2.4
(Described in Attachment 10 - Basic HVDC System Characteristics) Applicants are encouraged to consider the future proof nature of their proposed design.	Section 13.5
(Described in Attachment 10 - Maximum Power Delivery (MW) at POI) The Qualified Project responsible for constructing the Prebuild Infrastructure will only install its own Circuit to support its own Project in the Prebuild Infrastructure. Applicants are, however, required to include thermal ampacity/total power capacity assumptions for the other Qualified Projects' respective Circuits that also will utilize and share the Prebuild Infrastructure. Each Circuit is required to be electrically independent from all other Circuits in the shared Prebuild Infrastructure, with limited thermal interference from one Circuit to another that could reduce any of these Projects' applicable Maximum Power Delivery target when all Circuits are operating at up to 1,500 MW.	Section 13.5
(Described in Attachment 10 - Maximum Power Delivery (MW) at POI) Applicants are encouraged to exercise professional judgment in order to formulate a "lowest common denominator" approach. The Board recognizes that it will be difficult for Board Staff to evaluate all permutations of potential Duct Bank and Cable Vault requirements across an array of potential HVDC technology, voltage, and vendor choices. Under "a lowest common denominator approach," Applicants should delineate power cables sizes, types, and ratings for their Circuits, which may involve larger diameter cables or, in the alternative, may involve the use of other voltages that can be accommodated in Applicant's proposed Prebuild design. For purposes of targeting Maximum Power Delivery, Applicants should consider a target nameplate of up to 1,500 MW for each Circuit, with a voltage of 400 kV, or, perhaps, 525 kV, as a technical proxy specification to support flexibility going forward. Applicants are free to define relevant scenarios for the assumed future Project Circuits under a range of existing or future HVDC technologies. Applicants should assume the most limiting location of the Prebuild approach, for example, a deep drilling location, if applicable.	Section 13.5.2

(Described in Attachment 10 - Maximum Power Delivery (MW) at POI) Each Circuit should be structured to accommodate 3 cables needed for 525 kV cable sets, plus a smaller fibrotic control conduit. These Circuits should be downward compatible, as in, 525 kV design should also be able to handle lower voltage cables.	Section 13.5.2
(Described in Attachment 10 - Number of Qualified Projects Accommodated) Board Staff will evaluate the (de)merits and limitations of all Project scenarios and route alternatives. Subject to the Maximum Power Delivery target, the proposed routes which demonstrate maximum flexibility to accommodate four (4) Circuits in the Prebuild Infrastructure for a single ROW design would be evaluated favorably. Applicants are encouraged to identify limitations, conflicts, or constraints that can be mitigated to reduce both technology design risk and operating risk during the OREC term. Applicants submitting a Prebuild design with four (4) total Circuits that demonstrates high risk that cannot be mitigated or otherwise meet minimum SGD requirements are encouraged to consider a split route design accommodating four (4) Circuits around the identified constrained location(s) (not necessarily for the entire route) (See Figure A10-4 herein for an illustrative example of a split route.). The Board will evaluate all Project proposals based on the collective merits of each Project scenario and/or alternative route as it relates to the goals of the Third Solicitation and the schedule for subsequent Solicitations (MAOD intends to purchase, subdivide and potentially lease parcels at or near the LCS site to Qualified Project to accommodate their DC converter stations. MAOD currently assumes that it will be responsible for general site maintenance and upkeep, thereby keeping the parcels accessible and usable for Qualified Projects.).	Section 13.5 / Appendix 13-3
(Described in Attachment 10 - Route Details – Sea Girt NGTC Landfall) Similar to the Prebuild requirements for the onshore cable route, the Applicant must consider landfall approaches at Sea Girt NGTC. Identification of likely directional drilling/boring at landfall for a total of four (4) parallel Conduits where drilling may be needed to accommodate the other Qualified Projects' access to the Prebuild Infrastructure is a required part of the Applicant's proposed Prebuild design.	Section 13.5.3.3 / Appendices 13-9 and 13-12
(Described in Attachment 10 - Route Details – Sea Girt NGTC Landfall) Applicants must design a route with plans for Project sequencing to accommodate future cables which will avoid future conflicts or constraints. Applicants must provide any known limitations related to the order of installation for each Qualified Project in the respective Circuits when developing the Prebuild design. The Prebuild Infrastructure must include the Transition Vaults for cable splicing and HDD for Conduits/pipe at landfall for a total of four (4) Circuits. For the Prebuild Infrastructure, Conduits shall be sized sufficiently to encompass the assumed cable diameter for a minimum of two (2) cables per Circuit plus a potential spare Conduit and Conduit for a metallic return cable for a bipolar design. Additional Conduits should also be included and sufficiently sized for installation of redundant communication cables.	Section 13.5
(Described in Attachment 10 - Route Details – Sea Girt NGTC Landfall) Each Circuit will require an independent Transition Vault. Each Transition Vault will need to be accessed and maintained by an individual Qualified Project. The additional Prebuild Transition Vaults and associated equipment at landfall must be installed with appropriate access and physical separation between Transition Vaults. The Prebuild must include the HDD Conduit installation from the Transition Vaults out to the cofferdams where the future cable installation will proceed via jet plow (Jet plowing is a method used to bury the submarine export cables in the seabed between the cofferdams and the offshore platforms.). Reliability considerations will require independent HDD bores for each Circuit as part of the Prebuild installation to prevent impacts from adjacent Qualified Projects during normal and emergency O&M activities. Future Qualified Projects utilizing the Prebuild Infrastructure will be required to pull their respective HVDC cables through the allocated Prebuild Conduits and Transition Vaults at	Section 13.5.2

landfall, so that they extend from the cable installed in the seabed by each Qualified Project through the Transition Vaults, and continue through the Prebuild Infrastructure to the LCS.	
(Described in Attachment 10 - Landfall Construction Specification) The parallel HDD bores should be installed as appropriate to maintain adequate separation. The Qualified Project that constructs the Prebuild Infrastructure will be required to keep the Conduits accessible and maintained until such time that they are transferred to or accessed by each Qualified Project that will install cables therein. See Section 3.13 of the SGD for additional requirements.	Section 13.5
(Described in Attachment 10 - Route Details – Land Cable) Applicants are asked to provide proposed route(s) to deliver, through the Prebuild Infrastructure, the set of cables from landfall at the Sea Girt NGTC to the Point of Demarcation. The Prebuild Infrastructure will be used to accommodate a total of four Circuits. Applicants can, and are expected to, provide alternative routes so long as the proposed routes are capable of accommodating four (4) Circuits in total.	Sections 13.5.2.1, 13.5.2.2 / Appendix 13-3
(Described in Attachment 10 - Route Details – Land Cable) Applicants that can show routes that minimize land use constraints will be viewed favorably. However, Board action in this proceeding shall not be construed as providing approval for the proposed route(s). The Board is not responsible for obtaining any required property rights or permitting obligations, including any rights associated with landfall at Sea Girt NGTC.	Section 13.5.2.3
(Described in Attachment 10 - Route Details – Land Cable) This proposed generalized design will accommodate installation and maintenance by different Qualified Project cable owners. Duct Banks must be designed to accommodate the thermal loading created by transmitting the targeted Maximum Power Delivery through each of the cables utilizing the Prebuild Infrastructure.	Section 13.5.2.4
(Described in Attachment 10 - Special Cable Vaults, Duct Bank Cross Sections, and Crossings) Consistent with the Prebuild Infrastructure design requirements herein, Applicants must ensure that each future Qualified Project that utilizes the Prebuild Infrastructure has its own independent Transition Vault and Cable Vault access areas, even for special installations at areas of constraints or where HDD is required for each Circuit to prevent impacts from adjacent Qualified Projects during normal and emergency O&M activities. Each of the Circuits (or future Circuits) in these special Duct Bank or Conduit sections is required to be electrically independent from the others as well as having limited thermal interference (not impacting the target Maximum Power Delivery for each Project Circuit) (Conduits and Cable Vaults must be sized appropriately, with room for at least two (2) power cables plus a spare duct or metallic return cable and redundant communication ducts.). Eventually, the cables installed in the Duct Banks and Cable Vaults in these areas of constraints or design deviations from what is found along the majority of the route will be installed and maintained by different Qualified Projects.	Section 13.5
(Described in Attachment 10 - Proposed Cable Vault Locations and Configuration) The Duct Bank and Cable Vault system for each Qualified Project is required to be independent from those utilized by the other Qualified Projects. There may be special considerations, however, that cover the planning, positioning, and sequencing of Cable Vault installation along the Prebuild ROW to gain the benefits of a common corridor approach. Emphasis on the avoidance of conflicts with local communities is required. When there is sufficient room in the proposed Prebuild ROW, the Cable Vaults for each Circuit should be slightly offset from one another so the overall width of the Prebuild Infrastructure can remain within the public ROW (For ROWs that allow for a wider cross section width to work, Cable Vaults may be positioned next to one another or offset adjacent to one another to minimize the locations where there is significant excavating activity.).	Section 13.5

(Described in Attachment 10 - Proposed Cable Vault Locations and Configuration) As discussed previously herein, if there are other utilities in the street (or other bottle necks) which prevent the installation of the Cable Vaults necessary for installing multiple Project Circuits in a common ROW, it may be necessary to use two adjacent streets (e.g., for up to two Circuits each). Different route alternatives could be proposed with associated Cable Vault details.	Section 13.5
(Described in Attachment 10 - Proposed Cable Vault Locations and Configuration) Board Staff recognizes that the conditions between the Sea Girt NGTC and the Point of Demarcation may challenge the ability to install independent Cable Vaults and Duct Banks for four (4) Circuits in a common ROW. In certain narrow sections of the ROW, it may be necessary that Cable Vaults be installed with additional space between them, most notably at areas where there is a bend or at turns. Board Staff encourages Applicants to consider viable alternatives.	Section 13.5
(Described in Attachment 10 - Proposed Cable Vault Locations and Configuration) Board Staff encourages Cable Vault design optimization. Prebuild designs must clearly support future constructability and demonstrate that the proposed Prebuild design can accommodate four (4) independent Circuits for Qualified Projects.	Section 13.5 / Appendix 13-5
(Described in Attachment 10 - Proposed Cable Vault Locations and Configuration) The Cable Vaults for each Qualified Project must be isolated from one another and contain their own access points and sufficient space for performing necessary cable pulling and joint splicing activity in accord with Good Utility Practice for both safety and reliability purposes, while the other Qualified Projects' Circuits can be in operation at the same time. Applicants are encouraged to include a plan to ensure all other Circuits may be operational during these installation activities. Applicants shall provide a typical layout design for Cable Vaults along the land route. Any special vaults (A "special vault" is one that has been specifically configured to avoid a constraint, and which departs from the typical, regular vault configuration.) for surface conflicts and constrained or challenging areas, as well as designs for the Transition Vaults at the Sea Girt NGTC landfall location must be designated.	Section 13.5 / Appendix 13-15
(Described in Attachment 10 - Route Details – Larrabee Collector Station) Applicants should consider the route and general arrangement of Project Circuits approaching the Point of Demarcation at or near the LCS, along with the consideration of the future sequencing of cables subsequently installed in the Prebuild Infrastructure. The approach to the LCS will have independent, parallel, and separated Duct Banks and Cable Vaults with the appropriate cable installation sequencing considered to minimize future conflicts.	Section 13.5
(Described in Attachment 10 - Route Details – Larrabee Collector Station) For the Prebuild Infrastructure up to the HVDC converter stations that will be constructed at or near the LCS, each Circuit is required to be electrically independent for the reasons described previously, with room for at least two (2) power cables plus a spare or metallic return along with redundant communication cables installed within each Circuit's independent Cable Vaults. Applicants must design the Prebuild Cable Vaults to each of the allocated HVDC converter station properties (This will support bringing the cables into their final termination in the associated HVDC onshore converter station bays, the land areas allotted to a Project at or near the LCS for siting its HVDC converter station. Applicants should assume the HVDC converter equipment and cables for each Qualified Project will be installed and maintained independently.).	Section 13.5
(Described in Attachment 10 - Route Details – Larrabee Collector Station) Applicants must consider the appropriate sequencing of Circuit utilization based on the layout of the HVDC converter station properties, if required, to minimize any conflicts between Qualified Projects.	Section 13.5

(Described in Attachment 10 - Interconnection Plan) Applicants must demonstrate that the proposed Prebuild technology is technically viable (Technical viability may be demonstrated by showing that the technology is commercially available, is reasonably expected to be commercially available prior to the commencement of Project construction or has been used successfully on other similar projects in commercial operation in the U.S. or elsewhere.).	Section 13.5
(Described in Attachment 10 - Interconnection Plan) Applicants should clarify how specific features strengthen grid reliability objectives in regard to safety, resilience, integration, and redundancy.	Section 13.3.6
(Described in Attachment 10 - Interconnection Plan) Applicants must address Good Utility Practice in the design of the Prebuild Infrastructure. Applicants should demonstrate due separation and independence of each transmission Circuit and highlight the underlying design attributes (Due separation and independence of each Circuit in the context of the Prebuild Infrastructure, where each Circuit involves a separate cable owner, require that the operational activities of any given Circuit do not prevent the ability of other Circuits from operating at their intended design capability. For a Duct Bank and Cable Vault system, the Cable Vaults encompass cable joints and may require de-energizing and grounding of all electrical equipment to meet safety requirements for certain maintenance. Good Utility Practice involves a design with independent physical access limited to a single owner/operator to prevent mutual impacts/conflicts between multiple cable systems. For Duct Banks with Conduits in concrete encasement in a common trench, appropriate separation between transmission Circuits would involve an evaluation of any mutual thermal interference and induced voltage between the Circuits to ensure each Circuit could operate independently without unintended consequences or degradation of operational design capability of any other Circuit from its intended operations or maintenance activities.).	Section 13.5 / Appendix 13-6
(Described in Attachment 10 - Interconnection Plan) Applicants must set forth potential routes for the Prebuild Infrastructure from landfall at the Sea Girt NGTC to the Point of Demarcation. If more than one Prebuild design is proposed, potential routes must be set forth for each. At a minimum, the overall route diagrams and maps must include the overall land route. To the extent possible, the route diagrams should also include the locations of all Cable Vaults, and the locations of any expected conflicts or constraints. Applicants should exercise reasonable efforts to identify primary obstructions and other underground facilities located along the potential routes in the plans, including any plans for mitigation (e.g., proposed course of action, timing, involved stakeholders, and estimated costs).	Section 13.5.2.1, 13.5.2.2 / Appendices 13-3, 13-15
(Described in Attachment 10 - Interconnection Plan) Applicants are encouraged to provide ample documentation from a technical engineering perspective for all portions of their ROW used in the Prebuild Infrastructure design approach for each scenario and alternative. Emphasis should be placed on safety, reliability, and constructability for four (4) Circuits.	Section 13.5.1 and 13.5.2
(Described in Attachment 10 - Interconnection Plan) Applicants are required to provide details of their submarine cable route approach to landfall and at the Sea Girt NGTC landfall along with installation details of the Transition Vaults, including, but not limited to, the identification of potential approaches and directional drilling/boring locations at landfall for a total of four (4) total parallel Conduits to accommodate other Qualified Projects' access to the Prebuild.	Section 13.4.2, 13.5 / Appendix 13-9 and 13-12
(Described in Attachment 10 - Interconnection Plan) Applicants are required to provide the range of expected Circuit capacities that the proposed Prebuild Infrastructure can accommodate under an array of potential scenarios pertaining to the Duct Bank configuration set forth in the Application. The assumptions used in the thermal calculations to determine this range that should be provided include: cable voltage (kV); cable ampacity (A); cable outer diameter (in or mm); conductor size (kCmil or mm^2) and material; insulation thickness (in or	Section 13.5

mm); other cable construction details (shielding, sheath, outer jacket, armor, bundling); minimum bending radius; and maximum pulling tension.	
(Described in Attachment 10 - Interconnection Plan) Applicants are required to provide the following rating scenarios for their proposed Prebuild Infrastructure design to demonstrate Maximum Power Delivery: One (1) Circuit, including short term overload capability (4 hours / 15 minutes); Two (2) Circuits together (lightly loaded / fully loaded); Three (3) Circuits together (lightly loaded / fully loaded); Four (4) Circuits together (lightly loaded / fully loaded); 4-hour overload capability (lightly loaded / fully loaded); and 15-minute overload capability (lightly loaded / fully loaded).	Section 13.5 / Appendix 13-6
(Described in Attachment 10 - Interconnection Plan) To the extent possible, Applicants are requested to provide the following information regarding the estimated landfall configuration: configuration and submarine cable separation and routing at landfall; location of Transition Vaults; design of Transition Vaults (physical dimensions, cable and splicing arrangements within the Transition Vaults, and separation between Transition Vaults and Conduits/pipe); Duct Bank arrangement and route leaving Transition Vaults toward POI (cross section of the Conduit / cable configuration, maximum cable sizes accommodated or assumed, and spare power and/or communication Conduits); and directional drilling / boring method and details.	Sections 13.5.2.2 and 13.5.2.4 / Appendices 13-8 to 13-9 and 13-12
(Described in Attachment 10 - Interconnection Plan) Applicants are required to provide the following information regarding the configuration of the Prebuild Infrastructure between the Sea Girt NGTC and Point of Demarcation (Applicants are encouraged to provide section-based details of their land cable route approach from landfall at the Sea Girt NGTC to the Point of Demarcation.): typical Duct Bank cross sections (diameters, separation, height, width, and burial depth in various sections) for (i) occupied Conduits, (ii) spare Conduits, (iii) telecommunication Conduits, and (iv) Conduits for cable grounding and bonding connectors; separation between Duct Banks in separate trenches; and analysis of thermal interference between Duct Banks, including assumptions used for soil resistivity.	Section 13.5.2.4
(Described in Attachment 10 - Interconnection Plan) To the extent possible, Applicants are requested to provide the following information regarding Cable Vault design layouts: physical dimensions (size and installation depth) for Transition Vaults and Cable Vaults located along the Prebuild route (To allow for the splicing together of cables, each Cable Vault is typically between 6-12 feet wide and 25-36 feet long depending on cable voltage and diameter assumed and the associated splicing space requirements. The Transition Vaults from offshore to onshore are typically larger, up to 40 feet long.); cable Vault spacing along each Circuit (To allow for cable to be pulled through, a Cable Vault may be needed at every 2,000 feet or less.); separation / offset between Cable Vaults for adjacent Circuits; cable and splicing arrangements within Cable Vaults; and access and Maintenance assumptions (Each Cable Vault must have its own access point (manhole cover) for reliability, maintenance, safety, and outage planning reasons, allowing each circuit to be operated and maintained by different parties.).	Sections 13.5.2 and 13.5.3 / Appendix 13-15
(Described in Attachment 10 - Interconnection Plan) To the extent possible, Applicants are requested to provide all details for any special Cable Vaults or Duct Bank / Conduit segments including, but not limited to: location and explanation of constraints (tight curves or bending radius issues, narrow ROWs, limitations of cable sizes/types to be pulled, surface constraint requiring drilling, etc.); location and method/technique for mitigation (directional bores or microtunnels, etc.); and separation between Duct Banks of adjacent Circuits, including a review of thermal interference between Duct Banks and assumptions used for soil thermal resistivity at specific locations.	Sections 13.5.2.2 and 13.5.3 / Appendix 13-15

(Described in Attachment 10 - Interconnection Plan) Applicants are required to provide the following information regarding the Prebuild configuration at or near the LCS for each potential Prebuild scenario and route alternative: relative arrangement of Circuit routes; layout of the Prebuild route into each HVDC converter station termination; sequencing constraints for Circuit utilization; and identification of any local limitations, special crossings, or conflicts.	Section 13.5
(Described in Attachment 11 - OTN Ready Basic Specifications) Board Staff has developed the following OTN Ready requirements based on the assumption that Qualified Projects' HVDC export cables will have ratings of at least 1,200 MW. In line with this preliminary design concept, an OTN is envisioned with at least the following basic specifications: (a) nominal operating voltage: 230 kV AC; (b) nominal frequency: 60 Hz; (c) OTN tie cable continuous power transfer capability: At least 400 MW; (d) number of connections to adjacent OSPs: At least 2; and (e) nominal distance assumed between OSPs: 20 to 40 statute miles	Section 13.6.1
(Described in Attachment 11 - OTN Ready Basic Specifications) The following assumptions and specifications are provided to assist Applicants in determining how much additional OSP space to include in their Project designs: • OTN Ready projects are designed to be integrated into an overall offshore wind transmission and export system with basic configuration as shown in Figure A11-1. Note that this figure is an example showing three (3) offshore wind projects. The OTN may interconnect more offshore wind projects depending on locations, power capabilities, and POIs. • The design of each OSP should include space and provisions for future installation of all equipment needed for integration of the OTN. This includes spatial, operational, weight, maintenance, and equipment removal/replacement considerations. • The OTN's configuration and circuit breaker arrangements should be in accordance with Good Utility Practice.	Section 13.6
(Described in Attachment 11 - Interconnection Plan) Applicants are required to confirm that their Project designs will accommodate the requirements described above in order to enable a Qualified Project to connect to an OTN.	Section 13.6
(Described in Attachment 11 - Interconnection Plan) Applicants are required to identify how much additional OSP space has been allocated for potential future installation of equipment related to OTN implementation.	Section 13.6.1
(Described in Attachment 11 - Interconnection Plan) Applicants must affirm that the additional OSP space will be reserved for this use.	Section 13.6

13.1 Summary

Atlantic Shores recognizes the need for long-term, consolidated transmission solutions that integrate offshore wind into the grid at lower cost and risk to ratepayers, local communities, and the environment. Therefore, we fully support the NJ BPU's requirements to maximize use of the SAA and the Prebuild Infrastructure (PBI) approach as part of this 3rd Solicitation. As an established developer in NJ, we leverage over 4 years of onshore development and our knowledge of local contractors to maximize deliverability and local benefits of our Interconnection Plan, as described in more detail in this chapter.

In Section 13.2 we confirm our **SAA compliance** and describe our Project's **capacity**. Our proposal complies fully with the SAA order.

Section 13.3 describes key aspects of our **grid connection**, including our queue positions, transmission costs and mitigation of load constraints.

Section 13.4 elaborates on our **transmission infrastructure** besides the PBI.

Section 13.5 details our proposed **Prebuild Infrastructure.** Figure 13-1.

Section 13.6 describes future-proofing of our offshore platform to be **ready for an offshore transmission network (OTN).**

ATLANTIC SHORES offshore wind

[redacted]

Interconnection plan | Our commitment to New Jersey

- [redacted]
- [redacted]
- [redacted]
- [redacted]
- Earliest reasonable delivery of the PBI in [redacted] leveraging +4 years of technical and development maturity, [redacted]
- Optimized technical PBI design and construction plan taking into account the geological, topographic, and environmental conditions as well as existing route constraints of our proposed ROW
- [redacted]
- [redacted]
- Ongoing coordination of PBI construction sequencing with respective communities to mitigate and minimize any potential impacts on the community
- [redacted]
- [redacted]
- [redacted]
- [redacted]

[redacted]

Figure 13-1: Atlantic Shores' PBI proposal

WHY ATLANTIC SHORES DELIVERS BEST VALUE FOR THE PBI

- **Over 4 years of development:** Atlantic Shores has been developing this specific onshore route from the Sea Girt NGTC to Larrabee POI since 2019 and has heavily de-risked this route to date. This allows us to propose full delivery of the PBI by [redacted]
- [redacted]
- [redacted]
- [redacted]
- [redacted]
- [redacted]
- [redacted]
- [redacted]
- [redacted]
- [redacted]

13.2 SAA compliance and capacity

Our Proposal is fully compliant with the Solicitation requirements and SAA Order. [redacted] Table 13-2) [redacted] 3 [redacted] Energy production estimate.

[redacted] 13.3.1.

13.3 Grid connection

13.3.1 Queue positions

[redacted] 13-2. [redacted]

As published on the PJM website[158], the status of the queue position is active.

Table 13-2: [redacted]

[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]

13.3.2 Interconnection process and ISA timeline

[redacted] Figure 13-2 [redacted] Table 13-2.

[redacted] 13.3.1 [redacted]

[158] https://www.pjm.com/planning/services-requests/interconnection-queues

Figure 13-2: PJM expected interconnection process timeline due to interconnection reform

13.3.3 Capacity Interconnection Rights

Table 13-3: SAA Capability, SAA circuit sizes, CIR levels[159]

SAA Circuit	Project	State	Transmission Owner	SAA Capability	MFO	MW Energy	MW Capacity

[159] PJM TEAC meeting 03/27/2023

SAA Circuit	Project	State	Transmission Owner	SAA Capability	MFO	MW Energy	MW Capacity
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]

13.3.4 Transmission System Upgrade Costs (TSUC)

[redacted]

[redacted]

Table 13-4: Estimated TSUCs outside of the SAA [redacted]

				Transmission System Upgrades Costs	
Project Installed Capacity	Project Injected Capacity at POI	Point of Interconnection	P10	P50	P90
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]

13.3.5 Proposed TSUC sharing mechanism

[redacted]

13.3.6 Mitigation of load constraints

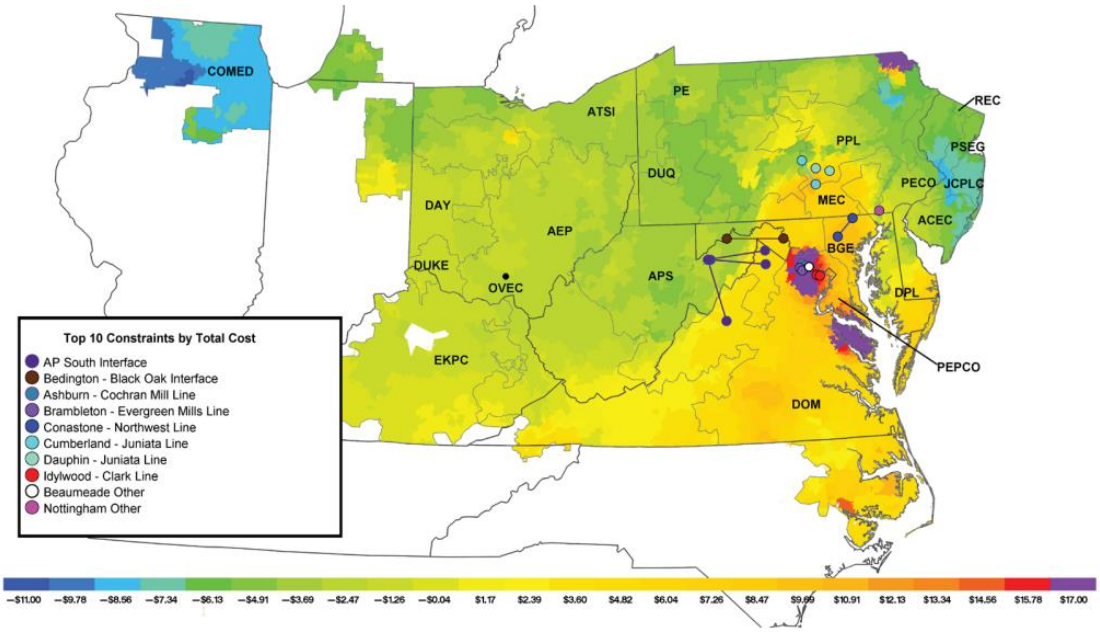
[redacted]

[redacted]

Figure 13-3

[redacted]

Figure 13-3: Location of the top 10 constraints by PJM day-ahead congestion costs for 2022[160]



[redacted]

[160] Source: State of the Market Report for PJM, Volume 2, Monitoring Analytics, LLC, Independent Market Monitor for PJM, March 9, 2022.

[redacted]

Figure 13-4: Location of top import constraints in Eastern PJM[162]

[redacted]

[redacted]

Figure 13-5: Congestion rent saving (%) for 2030 and 2035[163]

13.4 Transmission infrastructure

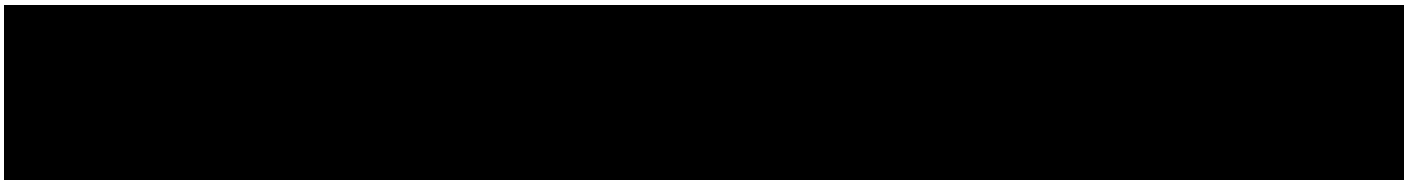


Figure 13-6: Offshore wind Project electrical infrastructure

[redacted]

[redacted]

Figure 13-7 [redacted]

[redacted]

Figure 13-7: [redacted] offshore and onshore route to POI

[redacted]

13.4.1 Infrastructure facilities and components

13.4.1.1 Offshore converter platform and onshore converter station

[redacted]

Figure 13-8 [redacted]

Figure 13-8: OTN-ready OSP 3D Model

[redacted]

[redacted]

[redacted]

Figure 13-9: 3D Model of an example onshore converter station layout

2 Project description

13.4.1.2 Reactive Power compensation and harmonic filtering at the LCS

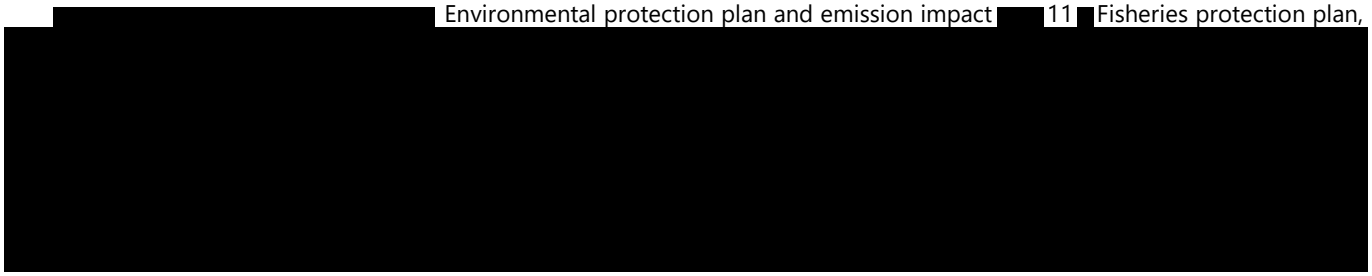
Figure 13-10

Figure 13-10: Example of P/Q diagram of a HVDC [redacted] onshore converter station operating area

13.4.1.3 Transmission cables

13.4.2 Offshore transmission route

[redacted] Environmental protection plan and emission impact [redacted] 11 [redacted] Fisheries protection plan,



[redacted]

[redacted]

13.4.2.1 Mitigation of constraints

Figure 13-11 [redacted]

[redacted]

[redacted]

[redacted]

[redacted]

Figure 13-11: Nearshore export cable corridor analysis

13.5 Prebuild Infrastructure

Atlantic Shores is committed to provide the State of New Jersey with a reliable, safe and de-risked PBI solution that minimizes community and environmental impacts. We are confident that we offer the most mature solution in these respects.

[redacted]

13.5.1 Site assessments

[redacted]

13.5.1.1 Geotechnical assessments

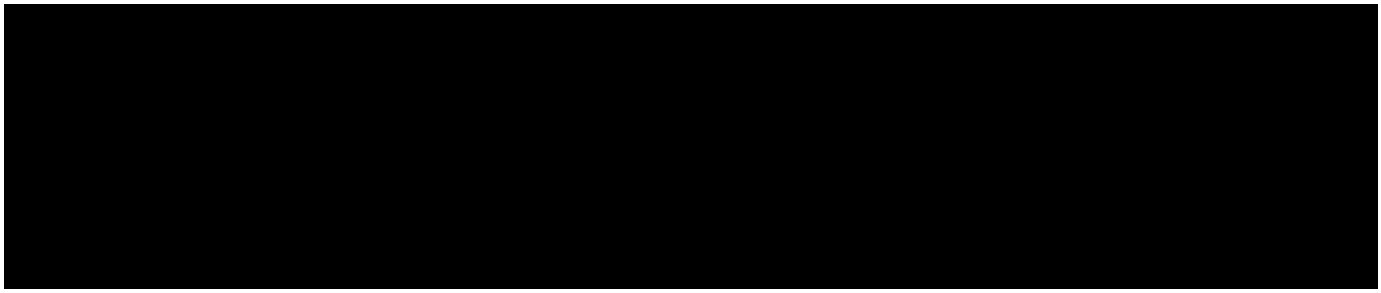
[redacted]

Figure 13-12: Geotechnical boring investigation along Lakewood Allenwood Rd. in Howell Township (June 2023)

13.5.1.2 Topographic assessments

Figure 13-13: Topography drawing example on Tiltons Corner Rd. in Wall township

Figure 13-14: Topography drawing example [redacted]



13.5.1.3 Environmental assessments

[redacted] 14 [redacted] Permitting plan [redacted] Figure 13-15.

[redacted]

[redacted]

Figure 13-15: Environmental assessment at Sea Girt showing Areas of Interest

[redacted]

13.5.1.4 Underground utility mark-outs

[redacted]

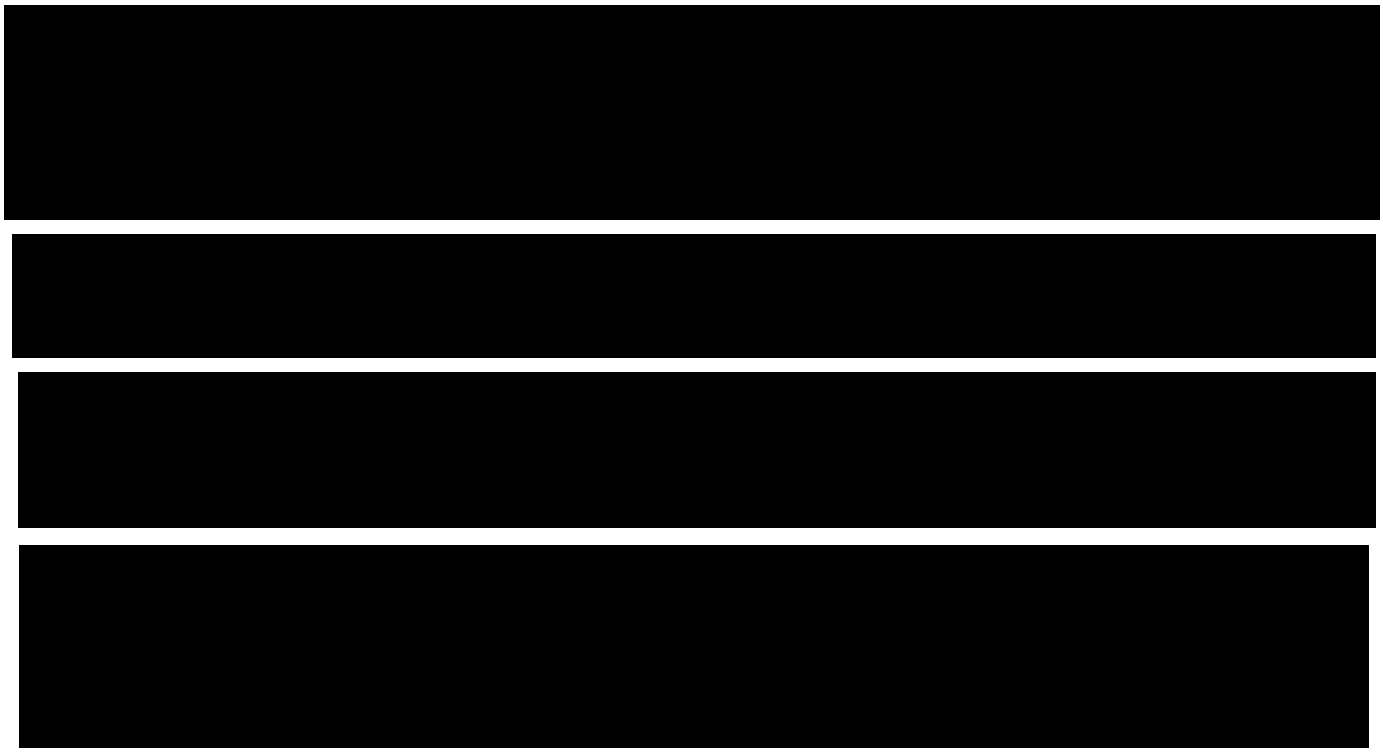


Figure 13-16: Atlantic Shores underground utility survey [redacted]

13.5.1.5 Existing roadways

Figure 13-17: Existing pavement moratorium along the PBI route

Figure 13-18: Overview of sections that require concrete panel replacement

13.5.2 Optimal design

13.5.2.1 Proposed PBI route overview

[redacted]

Figure 13-19[redacted]

Figure 13-19: PBI onshore route overview [redacted]

[redacted]

13.5.2.2 Detailed walkthrough of proposed PBI route

[redacted](Figure 13-20)[redacted]

[redacted] Figure 13-21), [redacted]

Figure 13-20: [redacted] overview

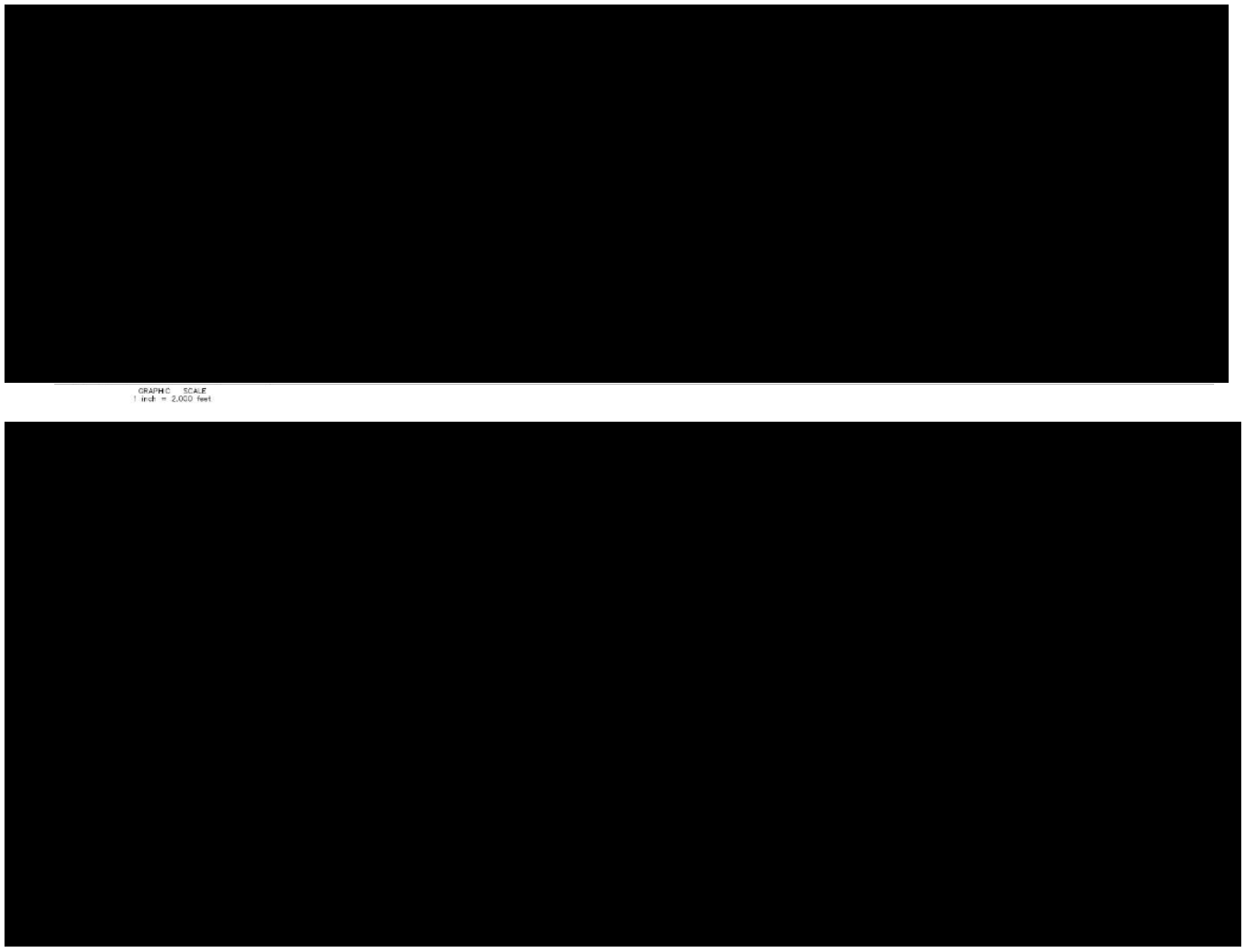


Figure 13-21: [redacted] installations

[redacted] Figure 13-22). [redacted]

[redacted] Figure 13-23). [redacted]

Figure 13-22: [redacted] overview

Figure 13-23: [redacted] installation detail

Figure 13-24)

(Figure 13-25)

Figure 13-24: Howell Township overview

Figure 13-25: [redacted]

[redacted]

[redacted]

13.5.2.3 Land ownership and acquisition requirements

[redacted]

The county, municipal, utility and state entities in Table 13-5 have been involved during the development and refinement of the proposed route.

Table 13-5: County, municipal, utility and State entities involved during the development of the PBI route

Involved entity	Entity type
[redacted]	[redacted]
[redacted]	[redacted]

ATLANTIC SHORES offshore wind

Involved entity	Entity type
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]

[redacted]

[redacted]14

Permitting plan. [redacted]

13.5.2.4 Technical design

[redacted]

[redacted]

[redacted]

PBI trench conduit layout

[redacted]

PBI duct bank design

[redacted]

Figure 13-26)

13.5.1

Figure 13-27

[redacted]

Figure 13-27

[redacted]

Figure 13-26: Duct bank cross section [redacted]

[redacted]

Figure 13-27: Duct bank cross section [redacted]

[redacted]

[redacted]

Cable vault design

[redacted]

13-28 [redacted]

Figure 13-28: [redacted]

[redacted]

Cable vault cluster design

[redacted]

Figure 13-29

[redacted]

Figure 13-29

[redacted]

Figure 13-29: Cable vault cluster standard design

Overload capability

Export cables ampacity

13.5.2

[redacted] Table 13-6 [redacted]

Table 13-6 Scenarios for PBI analysis

[redacted]

Dynamic rating

[redacted] Figure 13-30, [redacted]

[redacted] Table 13-7 [redacted]

Figure 13-30: Dynamic load profile

[redacted]

Interpretation of geotechnical data

[redacted]

[redacted]

[redacted]

Table 13-7: Cable ampacity study results

[redacted]					
[redacted]					
[redacted]					
[redacted]					
[redacted]					
[redacted]					
[redacted]					
[redacted]					
[redacted]					

[redacted]

[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

13.5.3 Construction

13.5.3.1 Overview of construction sequence

[redacted]

13.5.3.2 Laydown Areas

[redacted] (Figure 13-31

[redacted]

Figure 13-31: Identified laydown areas along the PBI Route

13.5.3.3 Landfall & onshore trenchless crossings review

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

13.5.3.4 Cable vaults installation

[redacted]

[redacted]

[redacted] Figure 13-32.

[redacted]

[redacted]

[redacted]

Figure 13-32: Typical cable vault installation in roadway

13.5.3.5 Duct bank installation

[redacted] Figure 13-33.

[redacted]

Figure 13-33: Typical duct bank trench installation in roadway

[redacted]

13.5.3.6 Construction dewatering

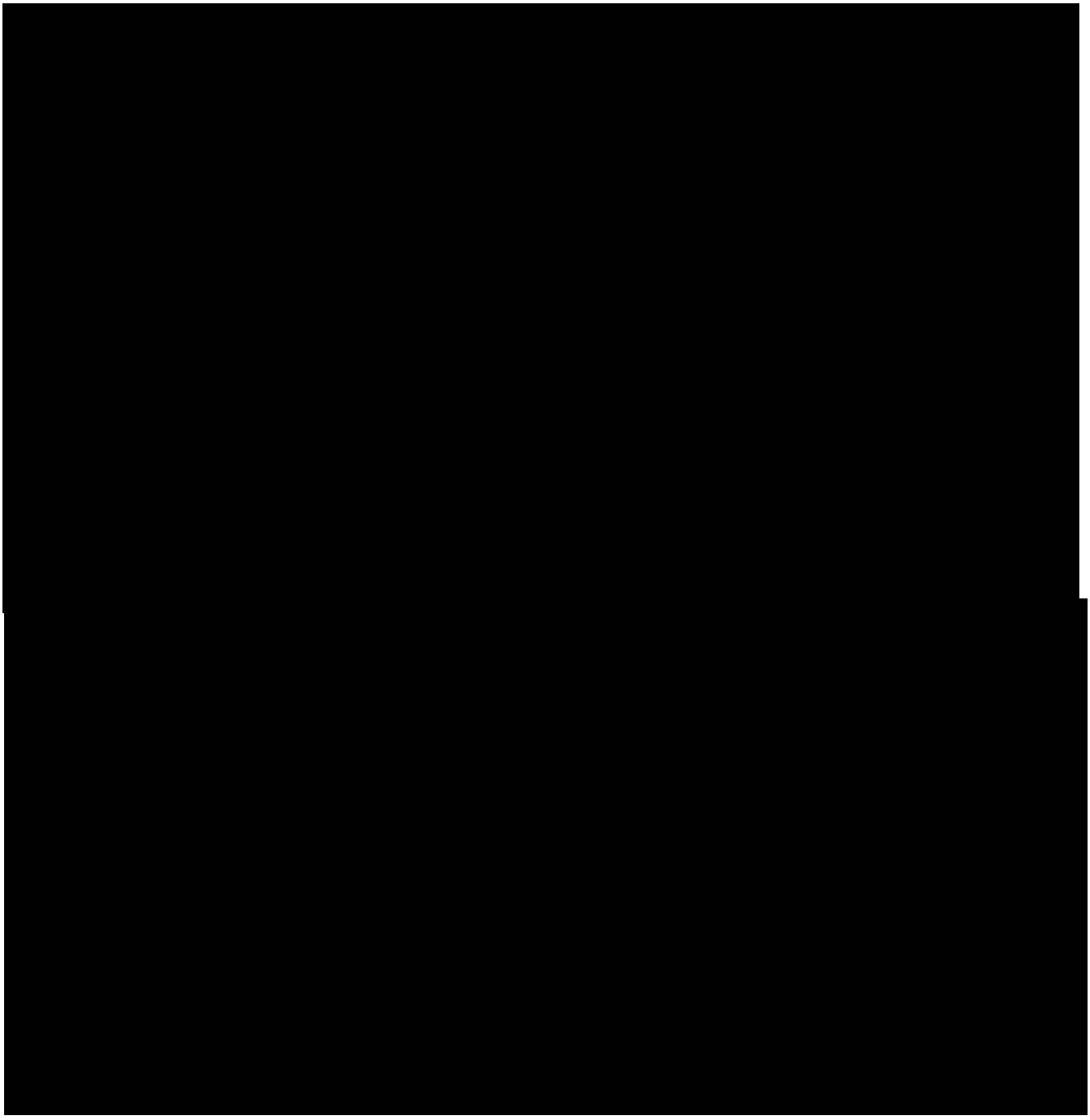
[redacted]

13.5.3.7 Waste re-use and disposal

[redacted]

[redacted]

Figure 13-34: [redacted]



[redacted]

13.5.4 Operations and maintenance plan

Please refer to Section 15.5 for Atlantic Shores' proposed O&M plan for the PBI.

13.5.5 Mitigation of community and environmental impacts

The PBI design minimizes potential community impacts from design, construction, traffic, noise mitigation, seasonal restrictions and more, while ensuring the safety of our people and community. Our proposed design, construction method and measures will reduce the construction schedule with minimal restrictions for the use of local infrastructure by residents and visitors.

[redacted]

13.5.5.1 Restoration plans

[redacted]

13.5.6 Delivery timeline

A detailed timeline for the PBI permitting and delivery is provided in Chapter 12 - Project timeline. [redacted]

[redacted]

13.5.7 PBI contractual terms and conditions

13.5.7.1 Proposed terms and conditions between PBI users

[redacted]

13.5.7.2 Proposed terms and conditions with MAOD

[redacted]

[redacted]

13.6 Offshore Transmission Network readiness

[redacted] is designed in compliance with the Offshore Transmission Network (OTN) ready requirements as defined in this Solicitation. Our OSP includes space to accommodate the additional equipment to fulfil the OTN requirements.

13.6.1 OTN-ready compliant design

[redacted]

[redacted]

[redacted]

Figure 13-35 Example OSP 3D models with and without OTN readiness

[redacted]

[redacted]

[redacted]

13.6.1.1 OTN space requirements

[redacted]

Atlantic Shores confirms that the additional space described above will be reserved for the purpose of future OTN equipment as required.

Figure 13-36: Section view and layout of the OTN modules with the future equipment

[redacted]

13.6.1.2 Reactive power compensation and HVDC failure protection

Figure 13-37 [redacted]

[redacted]

[redacted]

Figure 13-37: [redacted]

[redacted]

13.6.2 Equipment installation and maintenance

[redacted]

[redacted]

[redacted]

[redacted]

13.6.3 Cost considerations

As required, the proposed OREC Price for the Project does not include the cost of additional equipment but does include the costs associated with [redacted]

13.6.4 Alternative OTN solution

[redacted]

Figure 13-38, [redacted]

Figure 13-38: Alternative proposed solution to OTN network using Multiterminal HVDC configuration

14 Permitting plan

Contents

List of tables

List of appendices

Solicitation requirements

Table 14-1 describes the Solicitation requirements of this chapter as put forth in the SGD, as well as the relevant sections addressing these requirements.

Table 14-1: Permitting plan - references for Solicitation requirements

Key Solicitation requirements	Application reference
A list of all State and Federal regulatory agency approvals, permits, or other authorizations required pursuant to State, and Federal law (N.J.A.C. 14:8-6.5(a)(10))	Sections 14.3.1 and 14.3.2
Identify all applicable Federal and State statutes and regulations and municipal code requirements, with the names of the Federal, State, and local agencies to contact for compliance (N.J.A.C. 14:8-6.5(a)(2)(iv))	Sections 14.3.1 and 14.3.2
Identify all local, State and/or Federal permits and/or approvals required to build and operate the Project and the expected time to obtain such permits and/or approvals (N.J.A.C. 14:8-6.5(a)(10)(iii))	Sections 14.3.1 and 14.3.2
Identify the nature of the Applicant's ocean lease and land ownership requirements for all aspects of the Project, including all required interconnection areas (N.J.A.C. 14:8-6.5(a)(10)(iv))	Section 14.4
Progress must be demonstrated in securing leases and land required, and Applicants shall propose a plan for accomplishing remaining steps toward acquiring leases or land ownership (N.J.A.C. 14:8-6.5(a)(10)(v))	Section 14.4.2
Indicate the type and number of entities securing leases or owning land (N.J.A.C. 14:8-6.5(a)(10)(v))	Sections 14.4.1, 14.4.2
A plan for accomplishing remaining steps toward acquiring leases or land ownership (N.J.A.C. 14:8-6.5(a)(10)(v))	Section 14.4.2
Identify each appropriate State or Federal agency the Applicant will be contacting for land acquisition issues and provide a summary of the required arrangements (N.J.A.C. 14:8-6.5(a)(10)(vi))	Sections 14.4.2 and 14.4.3
Demonstrate adequate financial resources to acquire any land and/or leases needed to undertake the Project (N.J.A.C. 14:8-6.5(a)(10)(vii))	Section 14.4.4
A list of all local regulatory agency approvals, permits, or other authorizations required pursuant to local law (N.J.A.C. 14:8-6.5(a)(16))	Section 14.3.2
A list of all State, Federal and local regulatory agency approvals, permits, or other authorizations required to develop, expand, or otherwise utilize port facilities (N.J.A.C. 14:8-6.5(a)(16))	Sections 14.3.1, 14.3.2
A strategy, including the expected timeline (aligned with the Project Timeline described in Section 3.12), to obtain each required permit and/or approval (N.J.A.C. 14:8-6.5(a)(16))	Sections 14.2, 14.3.1, 14.3.2
Identify the land ownership requirements for the port facilities included in the Project (N.J.A.C. 14:8-6.5(a)(16))	Section 14.4
Identify each local, State and Federal agency the Applicant has contacted for land acquisition issues and provide a summary of the required arrangements (N.J.A.C. 14:8-6.5(a)(16))	Section 14.4.2 and 14.4.3

(Attachments) Copies of all submitted permit applications and any issued approvals and permits (N.J.A.C. 14:8-6.5(a)(10))	Appendices 14-1 to 14-2
(Attachments) Filings made to any other regulatory or governmental administrative agency including, but not limited to, any compliance filings or any inquiries by these agencies (N.J.A.C. 14:8-6.5(a)(10)(ix))	Appendices 14-1 to 14-2

14.1 Summary

Atlantic Shores is dedicated to offering uniquely mature and de-risked sites to New Jersey in this Solicitation. [redacted]

Section 14.2 highlights key elements of this **permitting strategy**. Atlantic Shores has been maintaining long-term relationships with Federal and State stakeholders since early 2019. As part of our stakeholder engagement plan (see Chapter 9 - Stakeholder engagement) Atlantic Shores actively connects and collaborates with affected communities as well as local, State and Federal stakeholders through comprehensive, coordinated and inclusive public outreach campaigns. [redacted]

Section 14.3 elaborates on our **uniquely advanced permitting timeline** that is a result of this strategy. [redacted]

Section 14.4 identifies the offshore **ocean lease acreage and land** ownership requirements for our Project. [redacted]

[redacted] 5 [redacted]

Project financing plan, [redacted]

Permitting plan | Our commitment to New Jersey

- [redacted]
- [redacted]
- [redacted]
- Financial means and mature plan to secure all authorizations and land acquisitions for the PBI as demonstrated in Chapter 5 - Project financing plan

[redacted]

14.2 Permitting strategy

Atlantic Shores' permitting strategy builds on our *local knowledge of the State* gained for more than 4 years as well as strong, *long-term relationships with various key stakeholders*, including communities and relevant local, State and Federal regulatory authorities.

Atlantic Shores has a unique understanding of the statutory timeframes associated with environmental review, public engagement, and final project approval, both offshore on the US Outer Continental Shelf as well as alongshore and onshore New Jersey. This understanding is based on our extensive development planning efforts over the last +4 years as well as our leadership in advancing regulatory improvements for offshore wind. We continuously engage with our network of impact assessment and subject matter experts to ensure we know all the natural resource data and environmental analyses necessary to support each agency's review process and a smooth Project approval.

To achieve New Jersey's Offshore Wind Strategic Plan objectives, Atlantic Shores began reaching out to governmental representatives already in early 2019. Since then, Atlantic Shores has actively met with decisionmakers at local, State and Federal levels and engaged with communities and stakeholders through our comprehensive, coordinated and inclusive public outreach campaigns. In addition, Atlantic Shores has fostered collaborative engagement with Federal and State agencies that protect New Jersey's land, coastal and marine resources through coordinated meetings and targeted technical discussions. As part of these efforts, we have held numerous joint pre-application meetings with these agencies to facilitate cross-disciplinary discussions, share concerns, construction opportunities and constraints as well as engage in an open dialog to discuss a collaborative approach to mitigate effects to protected resources. Furthermore, Atlantic Shores has utilized the New Jersey Environmental Resources Offshore Wind Working Group (Environmental Working Group) to enhance communication and coordination between conservation communities as well as State and Federal agencies to the extent practicable. This approach to engagement promotes mutual understanding and practically addresses concerns, maximizes potential benefits to surrounding communities and stakeholders, and helps to ensure that timelines for development and permitting can be met. Atlantic Shores is committed to continue this proactive and sustained approach throughout the design of our Project, environmental surveys and assessments as well as through development of Federal, State and local application filings.

[redacted]

14.3 [redacted] permitting timeline

We have been diligently progressing [redacted] As a result, we can commit to securing all relevant Federal and State permits and approvals for [redacted] Our expected timeline to obtain each required permit and/or approval is detailed in the section below. The timeline is aligned with the Project timeline included in Chapter 12- Project timeline of this Application.

14.3.1 Federal permits and approvals

[redacted] Project 1 received an OREC award for 1,509.6 MW in the second New Jersey Solicitation. In May 2023, a DEIS was released for COP South reaching an important milestone in the NEPA process towards a ROD for both Projects 1 and 2. [redacted]

[redacted] We are in consistent contact with Federal agencies in bi-weekly meetings and have regular touchpoints with State agencies such as the NJ EDA and NJ DEP. This enables us to understand and include their guidance and expectations into our development program further de-risking our permitting timeline.

[redacted]

14.3.2 Required State and local government permits and approvals

Table 14-3 and Table 14-4 identify all State and municipal permits and requirements for construction and operation of the Project. The table also details anticipated timelines for approval based on preliminary designs and proposed facility layouts and locations.

[redacted]

Atlantic Shores will continue to maintain strong relationships with the respective State and municipalities to collaborate with respect to the implementation of mitigation measures, and the safe construction, operation and maintenance of our Project. As the development of our Project continues, permits related to safe operation and maintenance of their entire footprints are subject to changes of statutes and regulations by State and municipal agencies.

Table 14-2: Required Federal Permits

Permitting agency	Permit / approval	Applicable statute or regulation	Regulatory trigger	Application process and requirements	Anticipated review timeline	[redacted]
[redacted]						

Permitting agency	Permit / approval	Applicable statute or regulation	Regulatory trigger	Application process and requirements	Anticipated review timeline	[redacted]
[redacted]						

Permitting agency	Permit / approval	Applicable statute or regulation	Regulatory trigger	Application process and requirements	Anticipated review timeline	[redacted]
[redacted]						

Permitting agency	Permit / approval	Applicable statute or regulation	Regulatory trigger	Application process and requirements	Anticipated review timeline	[redacted]
[redacted]						

ATLANTIC SHORES offshore wind

Permitting agency	Permit / approval	Applicable statute or regulation	Regulatory trigger	Application process and requirements	Anticipated review timeline	[redacted]
[redacted]						

Permitting agency	Permit / approval	Applicable statute or regulation	Regulatory trigger	Application process and requirements	Anticipated review timeline	[redacted]
[redacted]						

Permitting agency	Permit / approval	Applicable statute or regulation	Regulatory trigger	Application process and requirements	Anticipated review timeline	[redacted]
[redacted]						

ATLANTIC SHORES offshore wind

Permitting agency	Permit / approval	Applicable statute or regulation	Regulatory trigger	Application process and requirements	Anticipated review timeline	[redacted]
[redacted]						

[167] Per DoD INSTRUCTION 4180.02 released in March 31, 2016

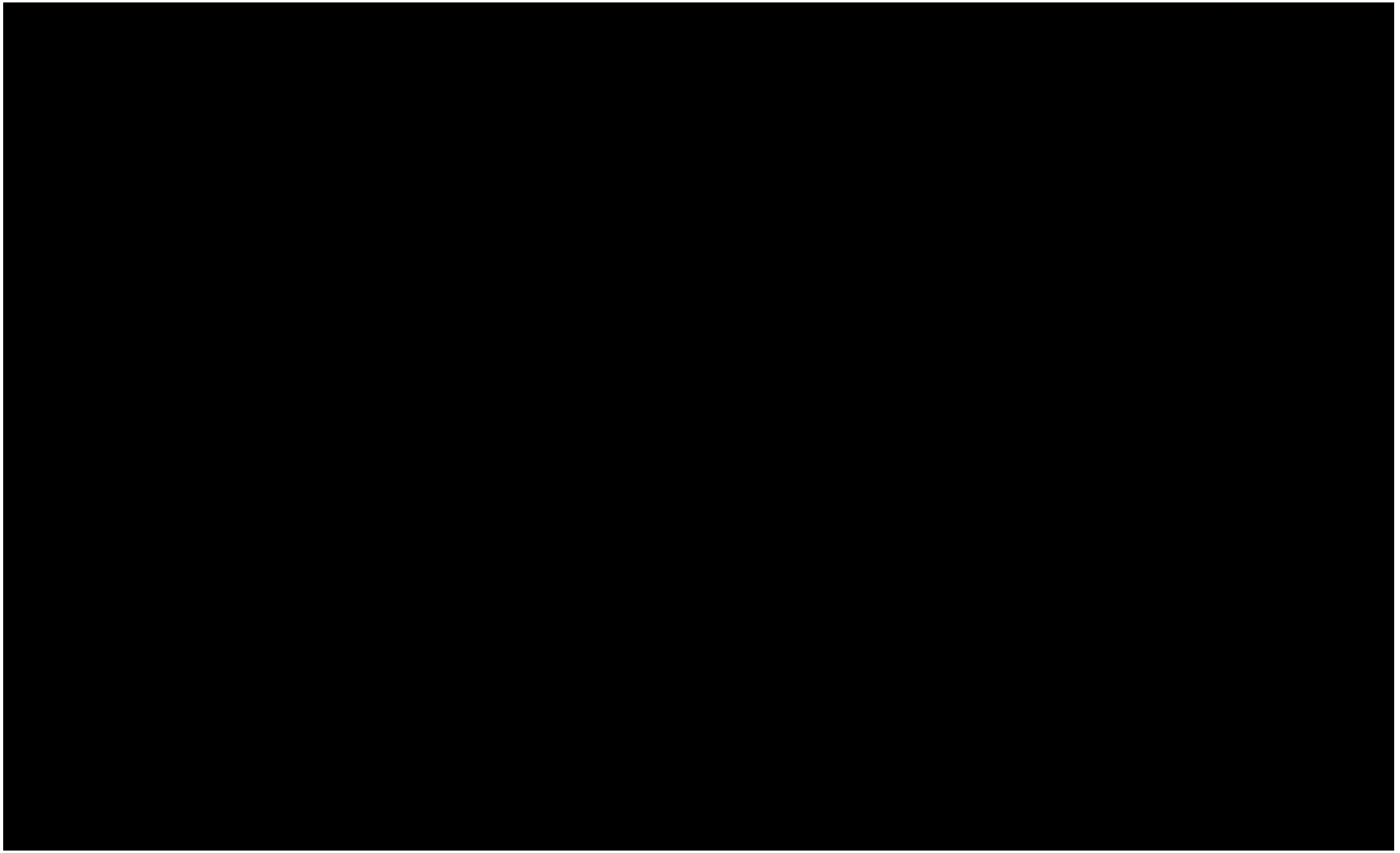
ATLANTIC SHORES offshore wind

Permitting agency	Permit / approval	Applicable statute or regulation	Regulatory trigger	Application process and requirements	Anticipated review timeline	[redacted]
[redacted]						

Permitting agency	Permit / approval	Applicable statute or regulation	Regulatory trigger	Application process and requirements	Anticipated review timeline	[redacted]
[redacted]						

Permitting agency	Permit / approval	Applicable statute or regulation	Regulatory trigger	Application process and requirements	Anticipated review timeline	[redacted]
[redacted]						

Permitting agency	Permit / approval	Applicable statute or regulation	Regulatory trigger	Application process and requirements	Anticipated review timeline	[redacted]



Permitting agency	Permit / approval	Applicable statute or regulation	Regulatory trigger	Application process and requirements	Anticipated review timeline	[redacted]
[redacted]						

Table 14-3: Required New Jersey State Permits

Permitting agency	Applicable permit or approval	Regulatory trigger	Application process and requirements	Anticipated review and approval timeline
[redacted]				

ATLANTIC SHORES offshore wind

Permitting agency	Applicable permit or approval	Regulatory trigger	Application process and requirements	Anticipated review and approval timeline
[redacted]				

Permitting agency	Applicable permit or approval	Regulatory trigger	Application process and requirements	Anticipated review and approval timeline
[redacted]				

Permitting agency	Applicable permit or approval	Regulatory trigger	Application process and requirements	Anticipated review and approval timeline
[redacted]				

Permitting agency	Applicable permit or approval	Regulatory trigger	Application process and requirements	Anticipated review and approval timeline

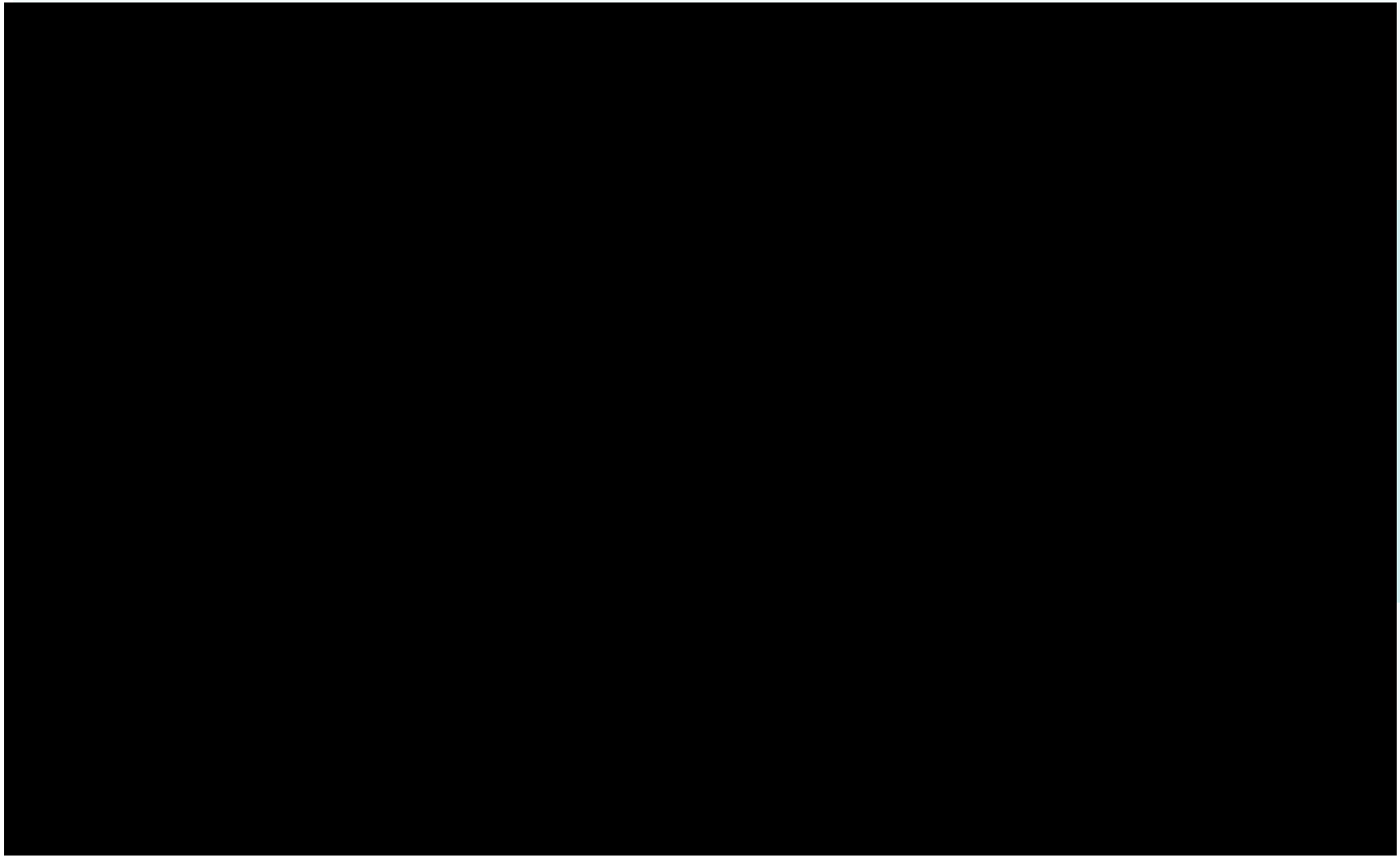


Table 14-4: Required Local Permits - Monmouth County

Permitting Agency	Applicable Permit or Approval	Applicability and Requirements	Anticipated approval and review Timeline
[redacted]			

Permitting Agency	Applicable Permit or Approval	Applicability and Requirements	Anticipated approval and review Timeline
[redacted]			

Permitting Agency	Applicable Permit or Approval	Applicability and Requirements	Anticipated approval and review Timeline
[redacted]			

14.3.3 Status of submitted permit applications

Table 14-5 below identifies the submitted permit applications and issued approvals and permits for the Project to date. Information is provided that explains what the permit/approval is for and when it was acquired. Available copies of all submitted permit applications and any issued approvals and permits are provided in Appendices 14-1 to 14-2. Atlantic Shores has filed for and received all permits necessary to support completed and ongoing onshore and offshore site characterization work. [redacted]

Table 14-5: Submitted permit applications

[redacted]

[redacted]

ATLANTIC SHORES offshore wind

Permit/Approval	Issuing agency	Activities covered by Permit/Approval	Date of approval
[redacted]			

Permit/Approval	Issuing agency	Activities covered by Permit/Approval	Date of approval
[redacted]			

14.4 Ocean lease and land ownership

14.4.1 Required leases and land acquisitions

[redacted]

[redacted]

[redacted]

Table 14-6

[redacted]

Table 14-6: State and municipal-owned land crossings

Summary by Owner Entity	Length (ft)
[redacted]	

14.4.2 Status of leases and land ownership

[redacted]

[redacted]

Table 14-7: State agencies and required arrangements actively being negotiated by the Project

[redacted]

[redacted]

Table 14-8: Status of land acquisition and leasing for the project

Site or ROW	Type of landowner	Contact made	Type of land instrument	Status/Plan for acquisition
[redacted]				

14.4.3 Contacts for land acquisition issues

[redacted]

Table 14-9 [redacted]

Table 14-9: Contacts for land acquisition

ATLANTIC SHORES offshore wind

Entity	Cadence	Discussion points
[redacted]		

Entity	Cadence	Discussion points
[redacted]		

14.4.4 Demonstration of financial resources for land acquisition

[redacted] 1 [redacted] Applicant information [redacted] 5 [redacted] Project financing plan, [redacted]

15 Operations and maintenance plan

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Appendix 15-5: Letter of Support from [redacted]

Solicitation requirements

Table 15-1 describes the Solicitation requirements of this chapter as put forth in the SGD, as well as the relevant sections addressing these requirements.

Table 15-1: O&M plan - References for Solicitation requirements

Key Solicitation requirements	Application reference
An O&M plan for the 20-year contract term for each phase of the Project (N.J.A.C. 14:8-6.5(a)(7))	Sections 15.3, 15.4 and 15.6
Detail routine, intermittent, and emergency protocols (N.J.A.C. 14:8-6.5(a)(7)(i))	Section 15.6
Demonstrate that the Applicant has the financial capacity and technical expertise to perform all necessary upkeep/maintenance over the life of the Project (N.J.A.C. 14:8-6.5(a)(7)(ii))	Section 15.2
Identify the primary risks to the built infrastructure and how the potential risks, including, but not limited to, hurricanes, lightning, fog, rogue wave occurrences, and exposed cabling, shall be mitigated (N.J.A.C. 14:8-6.5(a)(7)(iii)) (Climatic risks should also be included in the identification of risks.)	Section 15.8
Describe the emergency shut down provisions in the event of a need for the immediate stoppage of turbine blades (N.J.A.C. 14:8-6.5(a)(7)(iv))	Section 15.6
Identify specific and concrete elements to ensure both construction and operational cost controls (N.J.A.C. 14:8-6.5(a)(7)(v))	Section 15.9
Provide proof of insurance typical of the industry (N.J.A.C. 14:8-6.5(a)(7)(vi))	Section 15.9.3
Identify the projected plan for the subsequent operational term, assuming any necessary Federal lease agreements are maintained and renewed (N.J.A.C. 14:8-6.5(a)(7)(vii))	Section 15.10
Provide a complete O&M plan for the life of the plant (N.J.A.C. 14:8-6.5(a)(7)(viii))	Sections 15.4 and 15.5
If the Applicant has selected an O&M contractor, identify the contractor, and demonstrate that it has the financial capacity and technical expertise to perform all necessary upkeep/maintenance over the life of the Project (N.J.A.C. 14:8-6.5(a)(16))	Sections 15.2, 15.3, 15.4, and 15.5
Identification of the port(s) that will be used to support O&M of the Project and the activities that will be conducted at each port (N.J.A.C. 14:8-6.5(a)(16))	Section 15.4

Describe how the built infrastructure will be made resilient to expected future impacts of climate change (N.J.A.C. 14:8-6.5(a)(16))	Section 15.8
Address the potential for cable exposure over the lifetime of the project and provide plans for reburial if necessary (N.J.A.C. 14:8-6.5(a)(16))	Section 15.8
Address the length of equipment downtime and timing of repair and replacement for the mitigation measures associated with potential risks, including, but not limited to, hurricanes, lightning, fog, rogue wave occurrences, and exposed cabling (N.J.A.C. 14:8-6.5(a)(16))	Sections 15.3, 15.4, 15.6 and 15.8
A detailed description of the vessels that will be used for the O&M of the Project, and how Jones Act compliance will be addressed for each vessel and/or vessel class (N.J.A.C. 14:8-6.5(a)(16))	Sections 15.4
A detailed description of the types of condition monitoring technology the Applicant is going to use and the assigned probability of failures relating to certain potential risks (N.J.A.C. 14:8-6.5(a)(16))	Sections 15.3, 15.4, 15.6, and 15.8
A detailed description of the regular foundation monitoring measures to be employed that will produce reliable data regarding foundation integrity and degradation, both during and beyond the 20-year OREC period, as well as potential foundation strengthening and retrofit measures to be taken (N.J.A.C. 14:8-6.5(a)(16))	Section 15.4
A description of any non-standard insurance product that the Applicant may seek with respect to the Project (N.J.A.C. 14:8-6.5(a)(16))	Section 15.9.3

15.1 Summary

A detailed, robust, and optimized operations and maintenance (O&M) plan is essential to ensure that the offshore wind farm safely and reliably delivers energy at an affordable cost to the ratepayers, while providing additional economic benefits to New Jersey. This requires detailed strategy and planning, proven protocols and processes, reliable risk mitigation strategies, rigorous cost control, sufficient insurance, and strong technical and financial capabilities and expertise.

Section 15.2 elaborates on the **financial capacity and technical expertise** [redacted] financing plan). [redacted]

Section 15.3 describes the guiding principles and corresponding **O&M strategy** that significantly shapes our proposed O&M plan. [redacted]

Section 15.4 outlines the resulting, detailed **O&M plan of our offshore wind Project**. [redacted] 2.7 [redacted]

Section 15.5 elaborates on the detailed **O&M plan of the Prebuild infrastructure**. [redacted]

[redacted]

Section 15.6 explains our proven, reliable, and detailed **protocols for routine, intermittent, and emergency maintenance**, [redacted]

Section 15.7 shows Atlantic Shores' approach to **health, safety, and environmental considerations** during the operational lifetime of the Project. [redacted]

Section 15.8 assesses **risks and associated mitigation** measures that ensure robust, smooth operations, and minimize asset downtime in the event of a failure or emergency. [redacted]

Section 15.9 elaborates on our sound understanding of **cost controls**. [redacted]

Finally, Section 15.10 outlines our detailed plans and clear steps for the [redacted]

O&M plan | Our commitment to New Jersey

[redacted]

- Dedicated O&M plans for WTGs, converter stations, structures, subsea cables, and onshore infrastructure
- Focus on preventive and condition-based maintenance, minimizing down-time due to unplanned repairs

[redacted]

- Commitment to the highest safety and protection standards for the environment, our communities and employees, in line with our core values: *Be safe*, *Be a good neighbor*, and *Be a good steward of our environment*

[redacted]

[redacted]

[redacted]

15.2 Financial capacity and technical expertise

15.2.1 Atlantic Shores

Atlantic Shores' technical expertise has been established in Chapter 1 - Applicant information. The team's breadth of experience in large-scale offshore wind, onshore, wind and other large offshore infrastructure projects has been leveraged in the development of an effective O&M strategy detailed throughout this section. In addition, the team substantially benefits from the learnings and experience of the ongoing O&M planning activities for Project 1. [redacted]

Furthermore, Atlantic Shores is supported by its Shareholders, two world-class energy companies with proven technical acumen and financial capacity, and a demonstrated track record of operating large-scale energy projects. EDF Renewables and Shell New Energies will ensure long-term performance and profitability of the proposed assets by multiple support activities outlined in the sections below.

15.2.2 EDF Renewables

In terms of technical expertise, EDF Renewables' 35 years of experience and owner-operator mentality has led to the development and refinement of O&M policies, procedures, capabilities, and training, all of which will be utilized to provide services and staff to the Project and the PBI.

EDF Renewables' North American Asset Optimization Team is a group of over 400 employees dedicated to operations & maintenance, monitoring & compliance, and asset management of owned-facilities and third-party facilities, covering wind, solar and storage. The team has 13 GW of projects under services contract, 10.4 GW under monitoring and 7.8 GW under asset management. Customers include independent power producers, major utilities, electric cooperatives, and investment firms, and the managed facilities are spread across North America in the US, Mexico and Canada, representing a variety of different wind turbine and solar technologies.

EDF Renewables' Asset Optimization activities are centered around 3 topics, and cover their entire operations scope:

- **Operations & Maintenance:** Onsite Preventative and Corrective Maintenance, Balance of Plant (BOP) Management, Major Component Repair and Replacement, Parts Procurement, Blade Maintenance Program, End of Warranty (EOW) Inspections, Availability Guarantees
- **Operational Technologies**: 24/7/365 Remote Monitoring and Control, Remote Fault Diagnostics & Resets, Curtailment / Voltage/ Outage Management & Notifications, Supervisory Control and Data Acquisition (SCADA), / North American Electric Reliability Corporation (NERC) and Regulatory Compliance Support
- **Specialty Services**: NERC and Generating Availability Data System (GADS) Compliance Support, Asset Management and Administration, Performance & Reliability Engineering, Blade Services

The Project will also utilize resources from the EDF Renewables Group, whose teams have acquired considerable expertise in operating offshore wind farms in Europe. The Group currently operates 1,409 MW of offshore wind farms in France, the UK, Belgium and China, as further described in Section 1.4.2.

Finally, EDF Renewables' strong financial capacity has been established in Chapters 1 - Applicant information and 5 - Project financing plan of this Application, expressed by the substantial size of its balance sheet.

15.2.3 Shell New Energies

The Shell Group has four decades of experience in operating large-scale offshore projects in the US and over 100 years of experience and expertise in offshore energy asset operations, management, and maintenance around the globe. This experience will be available to the Project, alongside services such as supply chain and logistics, safety management systems, control and monitoring, and engineering support and systems.

Shell first moved into the offshore wind business over 20 years ago. In 2000, Shell was part of a consortium that installed the first offshore wind turbine in UK waters. Today, Shell has more than 2.2 GW of offshore wind capacity in operation and under construction, and 9.2 GW in the funnel of potential projects across North America, Europe, the UK, and Asia (Shell equity), including the Atlantic Shores Portfolio of projects. Shell is also a first mover in floating wind, with a 3.6 MW floating demonstrator project off the coast of Norway which has been in operations since 2021.

The Shell Offshore Power Operations and Asset Management team touches every project phase to ensure safety in design, reliable operations, and zero harm to people and the environment:

- **Front end development**: O&M Strategy, Logistics Strategy, Lessons Learned, Cost Modelling, O&M Port studies, Basis for Design, Concept Development
- **Commissioning phase**: O&M facility Construction & Commissioning, Project to Asset Handover, Statement of Fitness, Operations Management Plan
- **Operational phase**: 24/7/365 Remote Monitoring and Control, Asset Management, Trading & Supply, Ensure Safe Production, Manage Threats and Opportunities, Yield Optimization, Major Component Exchange Management, Warehouse Operations and Spare Parts Storage, Repower Analysis

This approach ensures end to end operational support with a constant feedback loop to improve projects, including Atlantic Shore, through their lifecycle.

In addition to offshore wind experience, Shell Renewable Asset Management International (SRAMI) has over 20 years of experience in commercial, technical, and operational oversight of renewable assets, both in joint ventures and wholly owned contracts. SRAMI takes a long-term view on asset management with the intent of extending full-life cycle asset value rather than managing to short-term performance metrics. This philosophy is very much embedded in Shell businesses with the commitment to safety and emphasis on operational excellence. SRAMI has operational hubs in Houston and The Hague. SRAMI specializes in Asset Management and Joint Venture Portfolio Services:

- **Asset Management**: Asset Oversight and Operational Reporting, Contracting & Procurement Support, Landowner Relationship Management, Contract Administration, Accounting and Records Management, Project Finance and Compliance, Asset Optimization, Management of Change, Budgeting, HSSE Management, Regulatory Compliance.
- **Joint Venture Services**: Accounting and Records Management, Joint Venture Reporting and Analysis, Financial Audit Administration, Financial Audit Administration, Corporate HSSE Leadership, Financing Administration and Compliance, Regulatory Compliance, Corporate Governance and Controls.

The Shell Group currently operates the 108 MW NoordZee Wind offshore wind farm, the 731.5 MW Blauwwind offshore wind farm, and the 759 MW Crosswind offshore wind farm which started up in April 2023. All three projects are in the North Sea, Holland. Additionally, SRAMI has managed more than 1.3 GW of renewable generation and has brought another 2.6 GW of renewable generation to NTP, where it now successfully operates independently.

As established in Chapters 1 - Applicant information and 5 - Project financing plan of this Application, Shell also brings substantial financial capacity.

[redacted]

[redacted]

2- Project description

[redacted]

[redacted]

15.3 Operations and maintenance strategy

As part of our long-term commitment to safe and efficient operations in the State of New Jersey, Atlantic Shores takes a holistic view towards asset management and wind farm operations across the lifecycle of our Portfolio assets. Atlantic Shores has developed an O&M strategy that delivers on its core value propositions to the NJ BPU, leveraging progress on Project 1, valuable input from our Shareholders, and the guiding principles outlined below:

- Protect workers and community health and safety
- Environmental stewardship and sustainable operations
- Compliance with state, local, and federal regulations
- Maximize availability and energy output
- Efficiency of resources and personnel to minimize costs and mitigate safety hazards
- Innovative use of technology, including green hydrogen and other alternative fuels to encourage the growth of a new energies industry in New Jersey
- Ensure sustainable value to the State by developing the local supply chains, creating good, long-term jobs, and building on a base of centralized O&M infrastructure in Atlantic City
- Continuous improvement of operational processes and adoption of best-in-class workflows and tools
- Leverage Shareholder expertise and financial strength, with EDF Renewables and Shell New Energies collectively operating and maintaining over 12 GW of renewable facilities, including 3.6 GW of offshore renewable projects

Atlantic Shores incorporates these guiding principles into all aspects of its operational planning and execution, while requiring its subcontractors to follow them as well. These principles help us deliver clean, affordable energy to ratepayers, by (1) maximizing revenue generation from wind farm operations through minimized downtime, and (2) minimizing O&M OPEX costs, enabled by synergies across our >5 GW offshore wind portfolio.

15.3.1 Atlantic Shores asset and operations

[redacted]

[redacted]

Experienced engineers and technicians from both our Shareholders EDF Renewables and Shell New Energies, whose technical expertise is detailed in Section 15.2, will supplement the Atlantic Shores' O&M team. Atlantic Shores will employ experienced subcontractors for specific scopes and maximize engagement with local companies and workforce.

[redacted]

[redacted]

15.6.1. [redacted]

[redacted]

[redacted] Table 15-2.

Table 15-2: Base case O&M scope

[redacted]

15.3.2 Wind turbines

[redacted]

Figure 15-1 [redacted]

[redacted]

[redacted]

2.4.2.4)

[redacted]

Figure 15-1: O&M logistics simulation illustration of Atlantic Shores

[redacted]

15.3.3 Offshore structures

[redacted]

15.4.4.

15.3.4 Subsea cables

[redacted]

15.3.5 Converter stations

[redacted] Table 15-3.

[redacted]

[redacted] Table 15-3.

[redacted]

Table 15-3: Expected scheduled maintenance activities and outage schedule

[redacted]

15.3.5.1 Operation of the HVDC link

[redacted]

[redacted]

15.3.5.2 Routine maintenance

[redacted]

15.3.5.3 Preventative maintenance

[redacted]

[redacted] (Figure 15-2) [redacted]

Figure 15-2: Typical offshore converter platform maintenance timeline

[redacted]

[redacted]

15.3.5.4 Cybersecurity patch management services strategy

[redacted]

15.3.6 Onshore infrastructure

[redacted]

[redacted]

15.4 Operations and maintenance of the offshore wind Project

15.4.1 O&M facilities and resources

[redacted]

Figure 15-3),

[redacted]

Figure 15-3: [redacted]pt

Figure 15-4: Multi-project O&M facility concept

15.4.1.2 Planned resources and training

[redacted]

[redacted]

Table 15-4: Overview of anticipated O&M jobs created in New Jersey by the proposed Project

[redacted]

15.4.2 Offshore O&M logistics

[redacted]

Table 15-5: Overview of anticipated logistics for the Project

[redacted]

ATLANTIC SHORES offshore wind

[redacted]

[redacted]

[redacted]

[redacted] building's [redacted]

[redacted]

15.4.4 Monitoring systems

Optimized asset management and operations and maintenance require 24/7 monitoring of the onshore and offshore equipment.

15.4.4.1 SCADA system and condition monitoring systems

The Project will be equipped with a Supervisory Control and Data Acquisition (SCADA) system which is remotely accessible to the O&M service operator through an Operational Control Center. Atlantic Shores will monitor the status, production, and health of the wind farms 24 hours a day. Performance and fault statistics are stored and analyzed for long-term trends as well as changes in performance of individual components.

The condition monitoring systems of various subsystems are centralized into the SCADA system so that this data can be used to identify underperformance issues and major equipment failures before they occur. Proactive utilization of real-time data and monitoring techniques will reduce downtime, repair costs, production losses, and will enable root cause

15.4.4.2 Foundation monitoring system

[redacted]

15.4.4.3 Cable condition monitoring system

[redacted]

15.5 Operations and maintenance of the Prebuild Infrastructure

[redacted] Our PBI design, as proposed in Chapter 13 - Interconnection plan, is fully compliant with the Solicitation requirements. [redacted]

15.5.1 General considerations for maintenance

[redacted]

[redacted]

Figure 15-9: [redacted]

15.5.2 Activities after construction and before cables installation

[redacted]

15.5.3 Periodic maintenance activities

[redacted]

15.5.4 PBI OPEX cost estimation and cost controls

[redacted]

15.6 Protocols for routine, intermittent, and emergency maintenance

15.6.1 Routine protocols for scheduled maintenance activities

[redacted]

Figure 15-10: Overview of preventive maintenance activities

[redacted]

15.6.2 Intermittent protocols for predictive, unscheduled, and corrective maintenance

[redacted]

15.6.3 Emergency protocols for automatic shutdown, remote shutdown, and e-stop

[redacted]

15.7 Health, safety, and environmental considerations

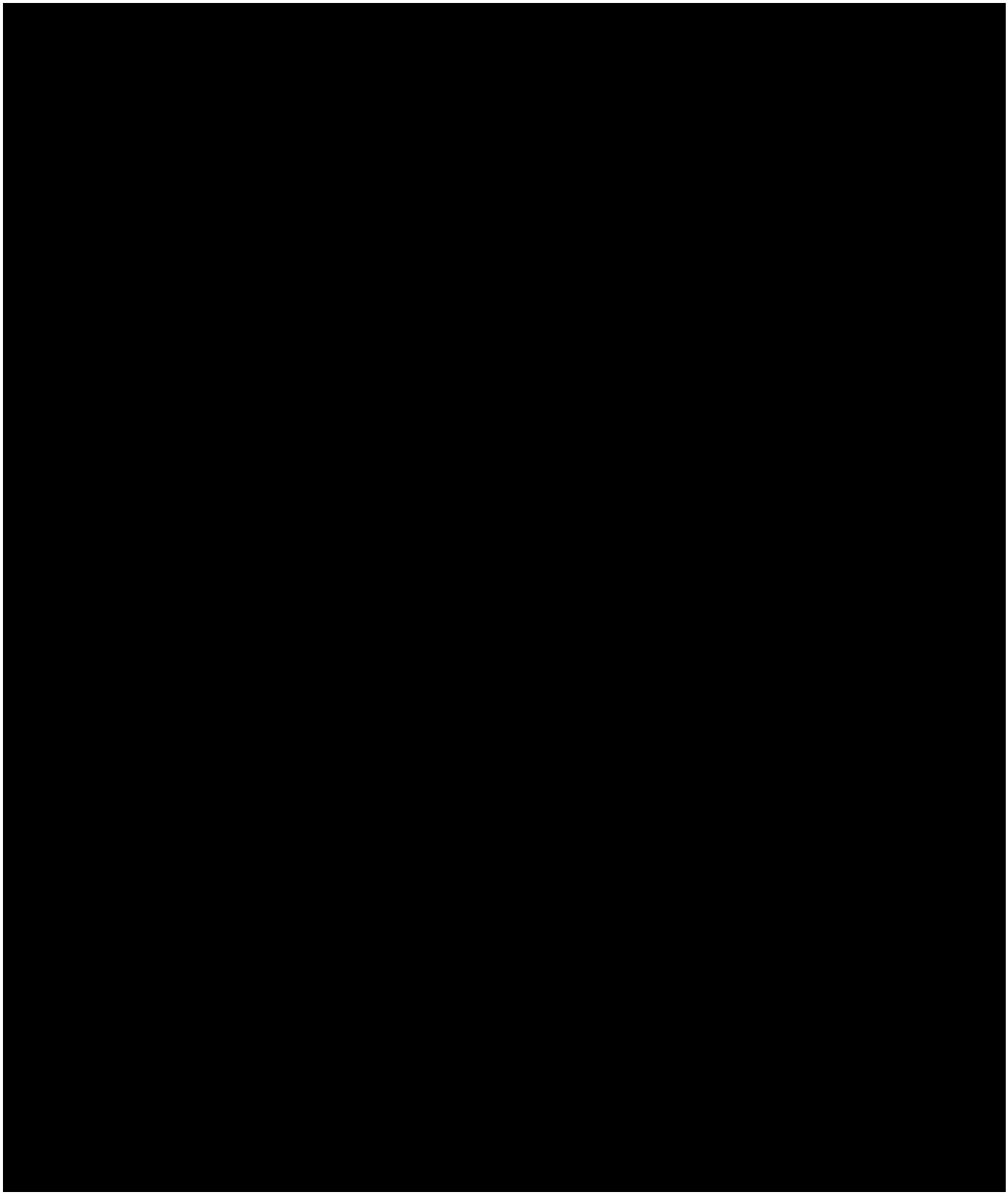
15.7.1 Health and safety approach

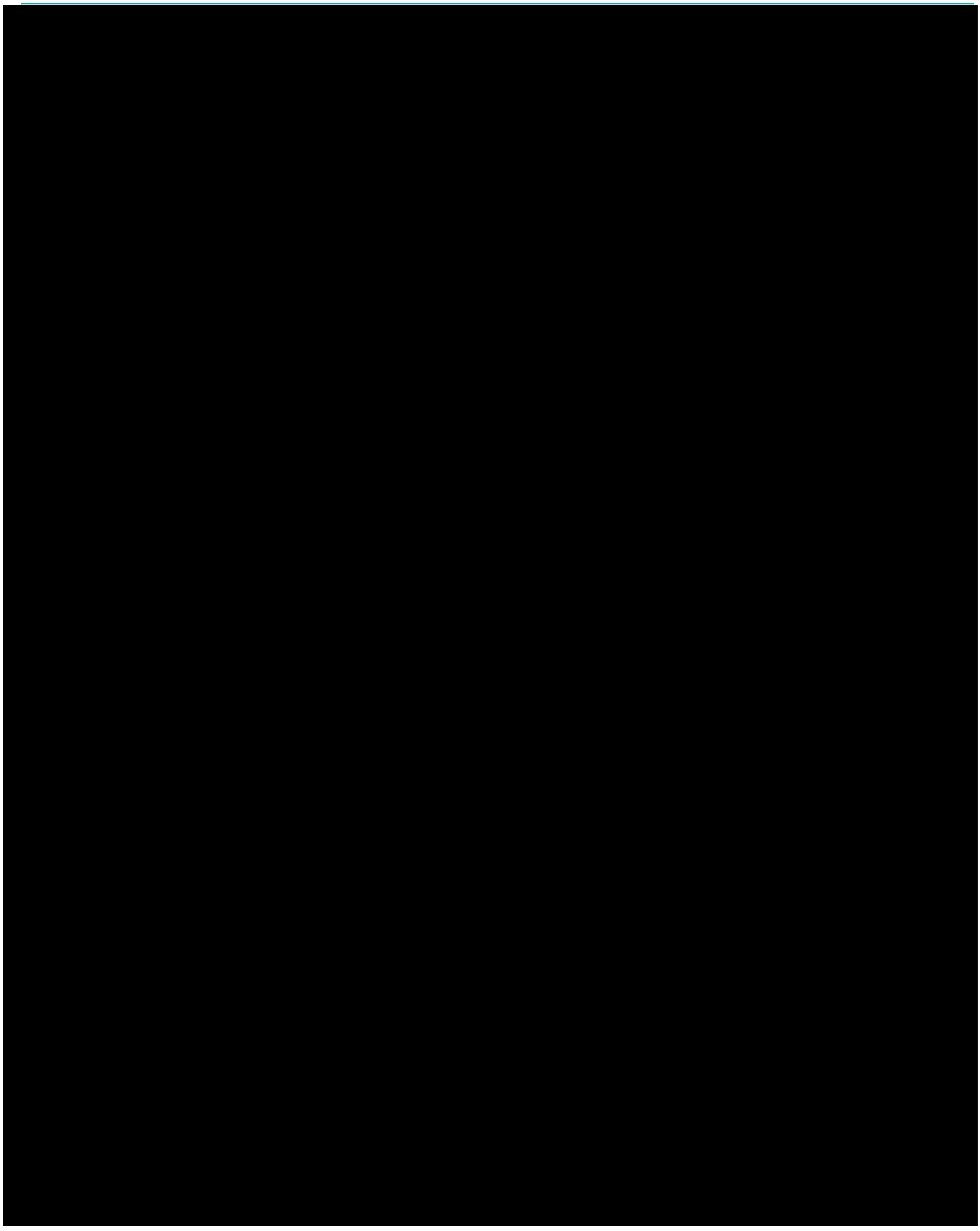
Health, Safety, Security and Environment (HSSE) are first and foremost in all Atlantic Shores' planning and activities. HSSE is the responsibility of every employee and contractor, and Atlantic Shores management is accountable for establishing and maintaining a safety culture and continuous safety improvement. In the project organization, the HSSE Manager reports directly to the Project Director, eliminating conflicting priorities towards cost or schedule.

Atlantic Shores upholds safety as a core value and Zero-Harm as a core goal. Atlantic Shores has already demonstrated our ability to maintain safe operations in the last four years of our survey campaigns, with all safety measures implemented. Atlantic Shores has developed and implemented Health & Safety polices and guidelines mirroring the most stringent

requirement of either Parent organization, with the goal of ensuring that Health, Safety, Security, & Environment (HSSE) and Social performance (SP) are incorporated into the Project's daily activities.

Table 15-6: Safety topics addressed in the Atlantic Shores draft Safety Management System





[redacted]

15.7.2 Environmental preservation

[redacted]

[redacted]

15.8 Risk mitigation

Atlantic Shores carried out a preliminary analysis of potential risks to the equipment and built infrastructure during the operating phase to ensure that barriers and mitigations are in place for significant risks. The risk assessment will be continuously updated throughout the life cycle of the Project.

[redacted]

Table 15-7: Risk and mitigation plan for built infrastructure

[redacted]

[redacted]

15.8.1 Cable exposure mitigation

Damage to an inter-array or export cable is very rare but can have significant impact to energy export. Prior to operations, Atlantic Shores will develop contingency plans to ensure the safe and timely repair of a damaged cable. The response planning process may include the establishment of service contracts to ensure the availability of qualified expertise and assets. Using its Shareholders' expertise, Atlantic Shores has assessed the risk of cable exposure and failure and developed an internal model of failure probabilities for both inter-array and export cables. [redacted] These modeled failures and expected response times have been incorporated into the operations budget forecasts and the estimated availability for the Project.

The most effective engineering mitigation is to bury cables at a depth of burial that is compatible with the soil property and risk of change in the bathymetry at the Project site. Atlantic Shores manages this risk by conducting a [redacted] Mariners will have access to nautical charts through the National Oceanic and Atmospheric Administration (NOAA), to whom we will provide as-built drawings showing installed locations of offshore cables. Local authorities and utilities will also receive as-built drawings for the onshore cable and duct-bank works.

Atlantic Shores has also established plans to mitigate cable issues based on regular surveys and is [redacted] These methods can help identify anomalous bathymetric changes or the presence and location of possible damage to insulating elements.

[redacted]

[redacted]

15.8.2 Climate risk mitigation

Subsea cables and near-shore infrastructure can be damaged by natural hazards, including storm surges, floods, and tropical cyclones. The intensity and frequency of these hazards will likely change under projected climate change scenarios and future sea-level rise.[172] Atlantic Shores recognizes that the proximity of certain export infrastructure to shore may mean that future changes in sea level and depth of water table can influence cable systems and the civil infrastructure associated with onshore equipment associated with the Project and the PBI. [redacted]

15.9 Cost controls and proof of insurance

[redacted]

15.9.1 Project Controls organization

[redacted]

[172] Clare, M.A., et al. (2023) Climate change hotspots and implications for the global subsea telecommunications network. *Earth-Science Reviews*, vol. 237, 104296. DOI: 10.1016/j.earscirev.2022.104296

[redacted]

15.9.2 Main cost drivers and mitigations

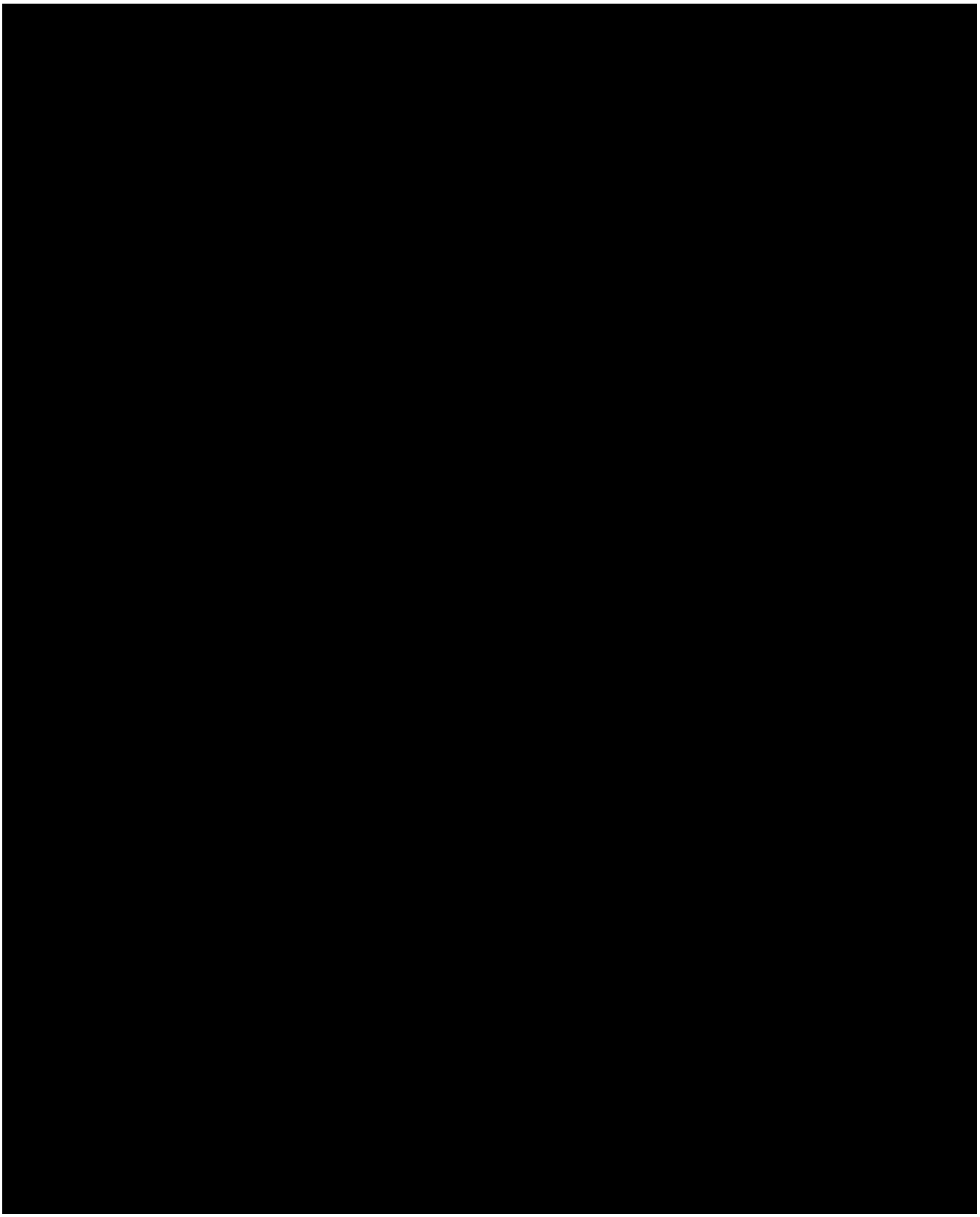
15.9.2.1 Construction phase

Through a [redacted] has identified several cost drivers that can impact the overall Project cost positively or negatively. These key drivers are listed in Table 15-8 by order of impact on the Project CAPEX (top representing the most impacting driver), and associated cost control mitigations that currently are or will be implemented throughout development and execution of the Project.

Table 15-8: Key CAPEX cost drivers

[redacted]

[redacted]



[redacted]

15.9.2.2 Operational phase

The key cost drivers of the Project's operations expenditures (OPEX) are listed in Table 15-9. The O&M strategy has been defined to reduce the potential impacts of these costs on the Project revenues, although additional cost control measures will be implemented throughout the Project operation phase.

Table 15-9: Key OPEX cost drivers

[redacted]

[redacted]

15.9.3 Proof of insurance

[redacted]

ATLANTIC SHORES offshore wind

15.10 [redacted]

[redacted]

16 Decommissioning plan

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Solicitation requirements

Table 16-1 describes the Solicitation requirements of this chapter as put forth in the SGD, as well as the relevant sections addressing these requirements.

Table 16-1: Decommissioning plan - references for Solicitation requirements

Key Solicitation requirements	Application reference
A decommissioning plan for the Project including provisions for financial assurance for decommissioning and which complies with any applicable State and Federal statutes and/or regulations (N.J.A.C. 14:8-6.5(a)(9)) (Decommissioning plan should also address the Project's transmission cables.)	Sections 16.5, 16.6 and 16.8 / Appendices 16-1 to 16-3
Estimate an expected useful economic life for the technology and installation area proposed (N.J.A.C. 14:8-6.5(a)(9)(i))	Section 16.9
Specify a Project decommissioning plan for the technology and installation area proposed (N.J.A.C. 14:8-6.5(a)(9)(i))	Sections 16.5 and 16.6 / Appendices 16-1 to 16-3
Include the anticipated cost of decommissioning the Project based on applicable and/or anticipated regulatory and engineering requirements (N.J.A.C. 14:8-6.5(a)(9)(ii))	Sections 16.5 and 16.7 / Appendices 16-1 to 16-3

Provide for the necessary future funding. Segregated decommissioning funds shall be required (N.J.A.C. 14:8-6.5(a)(9)(ii))	Section 16.8
Description of prior Applicant decommissioning experience (N.J.A.C. 14:8-6.5(a)(16))	Section 16.2
Description of how decommissioned components will be recycled, reused, or disposed of (N.J.A.C. 14:8-6.5(a)(16))	Sections 16.5 and 16.6

16.1 Summary

A reliable and sound decommissioning plan is essential to ensure the life cycle sustainability of our Project and support New Jersey's environment as well as wildlife over the awarded Project's lifetime and beyond. That is why we as Atlantic Shores pursues a zero-trace goal for our decommissioning activities and we present a detailed decommissioning plan prepared by [redacted]

Section 16.2 highlights our **prior decommissioning experience**. Our Project will benefit from the significant experience of our Shareholders today in offshore structures, onshore wind and nuclear energy as well as the expanding expertise and knowledge that will be gained over the next decades from their decommissioning of large-scale energy and offshore projects in Europe. Once the proposed Project and Prebuild Infrastructure reach their decommissioning date, Atlantic Shores itself will have already gained substantial decommissioning experience from Project 1. In addition, given the large pipeline of offshore wind projects on the US East Coast, Atlantic Shores expects a local decommissioning hub to be available at the time of decommissioning, which will benefit Project activities through proven concepts, logistics efficiency, and a robust, local supply chain.

Section [redacted]

Section 16.4 highlights **our environmental and stakeholder commitments** that aim to protect the environment and marine life during all decommissioning activities. Our guiding principles include compliance with all federal and State laws as well as NOAA guidelines regarding the monitoring of marine mammals. We will maintain close coordination with the Coast Guard to ensure full awareness of ongoing activities and continuously communicate with fisheries and other relevant stakeholders to minimize any potential effects.

Section 16.5 presents the detailed **decommissioning plan** along each key step of the process for the Project and the Prebuild Infrastructure, in line with applicable standards, guidelines and regulations. [redacted]

Section 16.6 demonstrates dedicated **environmentally conscious decommissioning initiatives** [redacted]

[redacted]

Section 16.7 presents Atlantic Shores' **decommissioning cost** assessment, [redacted]

Section 16.8, elaborates on Atlantic Shores' **funding plan**. [redacted]

Finally, Section 16.9 documents the certification process and **expected useful economic life** of the equipment, [redacted]

Decommissioning plan | Our commitment to New Jersey

[redacted]

- Highest safety standards in line with our SMS, true to one of our core values *Be safe*

[redacted]

[redacted]

16.2 Prior decommissioning experience

Atlantic Shores' parents Shell New Energies and EDF Renewables have significant experience over decades in decommissioning. Shell New Energies is particularly experienced in decommissioning offshore structures and onshore wind infrastructure, while EDF Renewables has significant experience in decommissioning complex structures such as nuclear plants. This experience will benefit Atlantic Shores, particularly in techniques for underwater cutting and methods for lifting

and transporting the largest components. In addition, both Shareholders have extensive experience in operating large-scale energy and offshore projects and will acquire experience in decommissioning similar projects to the proposed Project by the time they reach the end of commercial operation. This is the case because in the next two decades many offshore wind projects in Europe will be decommissioned, expanding the knowledge base, and asserting optimal techniques. This experience will be leveraged by the Project in developing best practice policies for decommissioning activities.

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

16.4 Environmental and stakeholder commitments

Similar to our commitments during the construction phase of the Project, Atlantic Shores commits to abide by similar principles during the decommissioning phase. These include but are not limited to:

1. Ensure compliance with all Federal and State laws associated with monitoring of marine mammals and stopping any decommissioning activities if such mammals are spotted

2. Ensure compliance with all NOAA guidelines associated with marine mammal monitoring
3. Maintain close coordination with Coast Guard to ensure they are fully aware of ongoing activities
4. Continuous communication with fisheries and other key stakeholders on any ongoing activities to minimize any potential impacts

16.5 Decommissioning plan

16.5.1 Applicable standards, guidelines, and regulations

16.5.1.1 Regulations for offshore activities

Atlantic Shores' Joint Operating Agreement between EDF Renewables and Shell New Energies includes specific requirements regarding Health, Safety, Security, & Environment (HSSE) and social performance in daily activities of the Project. Both Shell New Energies and EDF Renewables have exemplary safety records and Atlantic Shores is required to align with the most stringent policies between the two Shareholders.

Atlantic Shores upholds safety as a core value and Zero-Harm as a core goal. Atlantic Shores has already demonstrated our ability to maintain safe operations in the last four years of our survey campaigns, with all safety measures implemented. Atlantic Shores has developed and implemented Health & Safety polices and guidelines, with the goal of ensuring that Health, Safety, Security, & Environment (HSSE) and Social performance (SP) are incorporated into the Project's daily activities.

Prior to and during decommissioning, Atlantic Shores will put a high emphasis on training employees to the required standards of safe behavior and selecting and monitoring contractors closely to ensure application of the same or more stringent HSSE guidelines. Atlantic Shores will utilize its Safety Management System (SMS) that describes the activities, timing, and resources necessary to meet the HSSE requirements of the Project. HSSE policies and procedures will help ensure that Atlantic Shores can conduct all activities on the Project with zero safety-related incidents and will ensure the well-being of all our employees, contractors, and the public. Contractors selected for decommissioning will be required to adhere to the SMS, Environmental Plan, and Quality Plan for the Project.

Table 16-2: Applicable regulations

[redacted]

[redacted]

16.5.1.2 The Life Saving Rules, Goal Zero Principle and Golden Rules

The Life Saving Rules are a set of rules that provide clear, simple, and consistent information regarding risks in the workplace and the proper use of barriers and safeguards to protect the workforce. Life Saving Rules and safeguards have become standardized in the offshore industry and are detailed in AWEA Health and Safety Best Practice Guidelines for Offshore Wind Energy, 2013; Worker Health and Safety on Offshore Wind Farms - Special Report 310, 2013[174] and International Oil & Gas Producers (IOGP) 459[175]. The Goal Zero principle refers to a belief that all accidents are preventable and an organizational mindset which relentlessly pursues no harm to people and no significant incidents. The three Golden Rules are:

- Comply with all applicable laws, applicable standards, and prudent industry practices
- Intervene in unsafe or non-compliant situations
- Respect our neighbors

Atlantic Shores, our subsidiaries and any contractors involved in the decommissioning operations of [redacted] shall provide in its SMS an overview of the consequence management system associated with violation of any safeguards. The consequence management system will be transparent enough to allow Atlantic Shores insight at any time. The Project SMS will re-iterate that every employee, consultant, contractor, or subcontractor is authorized to stop a perceived unsafe act without negative consequences to the person who called for the stand down. Atlantic Shores, our subsidiaries and any contractor shall, as a minimum:

- Adopt the Life Saving Rules as detailed in IOGP 459
- Adopt a consequence program for personnel who violate the Life Saving Rules
- Provide initial training and reinforcement training for the Goal Zero Policy and Golden Rules

16.5.1.3 Federal regulations

The Project is located in Federal waters and thus, are subject to Federal regulations regarding decommissioning. The primary regulations for renewable energy facilities in Federal waters on the Outer Continental Shelf (OCS) are Title 30 of the US Code of Federal Regulations, Parts 285– Renewable Energy and Alternate Uses of Existing Facilities on the Outer Continental Shelf and Part 585 – Renewable Energy on the Outer Continental Shelf.

Per 30 CFR 285, a lease or grant holder is required to decommission a facility within two years following termination of the lease or grant and per 30 CFR 585, a lease holder must provide decommissioning financial assurance prior to the start of construction to ensure that sufficient funds will be available for decommissioning. Prior to decommissioning of any facilities, the lessee must submit a decommissioning application to BSEE and receive approval from BSEE for such application. After

[174] https://nap.nationalacademies.org/read/18327/chapter/1
[175] https://www.iogp.org/workstreams/safety/safety/life-savingrules/

receipt of approval from BSEE and at least 60 days prior to commencing decommissioning activities, the lessee must provide a decommissioning notice to BSEE including the schedule and any deviations from the approved plan. Within the CFR, requirements for decommissioning include:

1. Remove or decommission all facilities, projects, cables, pipelines, and obstructions;
2. Clear the seafloor of all obstructions created by activities on your lease, including your project easement, or grant.

[redacted]

[redacted]

16.5.1.4 Jones Act Compliance

The Jones Act is a Federal law that impacts the offshore wind industry in the US. This law stipulates that any transportation of goods between two ports in the US must be achieved by vessels which are built, owned, and operated by US entities. [redacted]

[redacted]

16.5.1.5 New Jersey State regulations

Per New Jersey's OWEDA regulations, to be eligible for the OREC funding mechanism, offshore wind projects must provide the following in their application:

1. "Estimate an expected useful life for the proposed technology and provide a plan to decommission the project, including the estimated costs of decommissioning."
2. Include "provisions for financial assurance for decommissioning and which complies with any applicable State and Federal statutes and/or regulations."

[redacted]

16.5.2 Decommissioning schedule

[redacted]

[redacted]

Table 16-3: Decommissioning schedule

[redacted]

16.5.3 Decommissioning strategy and technology

16.5.3.1 Port and disposal locations

Port facilities will be required to facilitate the Project's decommissioning. The main requirements for the decommissioning port are:

- Conditions which facilitate access for vessels involved in decommissioning activities, including adequate water depth, quayside width, and quayside length
- Load capacity of quayside and laydown areas for cranes, component handling, and component storage
- Area for component laydown and storage
- Distance from the Project, to limit vessel transit times

[redacted]

[redacted]

[redacted]

16.5.3.2 Vessel requirements and logistics strategy

A general description of the vessel requirements for the Project is presented in Table 16-4. A global requirement is that all activities must be Jones Act compliant.

Table 16-4: Description of vessels required for Project decommissioning

[redacted]

16.5.4 Offshore wind project decommissioning

Generally, decommissioning operations can be thought of as the reverse of installation (see Figure 16-1), in terms of the techniques used and the preparatory measures required, except for the required cutting actions. The sequence that will be followed is detailed below, with methods and logistics details (lift requirements, vessel selection, cutting methods) provided in the full reports attached as Appendices 16-1 to 16-3.

Figure 16-1: Process steps for our Project's [redacted]

[redacted]

16.5.4.1 Pre-decommissioning work

[redacted]

[redacted]

16.5.4.2 Turbines

[redacted]

[redacted]

Figure 16-2: Turbine installation at Block Island wind farm (top left), representative turbine installation vessel (Seajacks Ltd.) (top right), representative transport barge vessel[179] (bottom left), representative CTV[180] (bottom right)

16.5.4.3 Foundations

[redacted]

[redacted]

[redacted]

[179] Source: PANOCEAN
[180] Source: Windcat

Figure 16-3: Representative foundation installation vessel (using ballast for stability)[181]

16.5.4.4 Cables

[redacted]

[181]Source: DEME Orion

Figure 16-4: Example tracked jet plow[182] (top left), hydraulic cutting of power cables (top right), representative construction support vessel[183] (bottom left), representative crane barge for cables[184] (bottom right)

[redacted]

[redacted]

16.5.4.5 Offshore Substation

[redacted]

[redacted]

[182] Source: Engineering Technology Applications Ltd.
[183] Source: Solstad Offshore
[184] Source: Matrade B.V.

[redacted]

Figure 16-5: Representative substation semi-submersible crane vessel[185]

[185]Source: Heerema

16.5.4.6 Onshore Substation

[redacted]

16.5.4.7 Scour and cable protection

[redacted]

[redacted]

Figure 16-6: Representative crane barge for scour protection removal[186]

16.5.4.8 Onshore cable decommissioning

[redacted]

[186] Source: Horizon Ship Brokers

[redacted] **16-7: Cross section of cables in PBI trench**

[redacted]

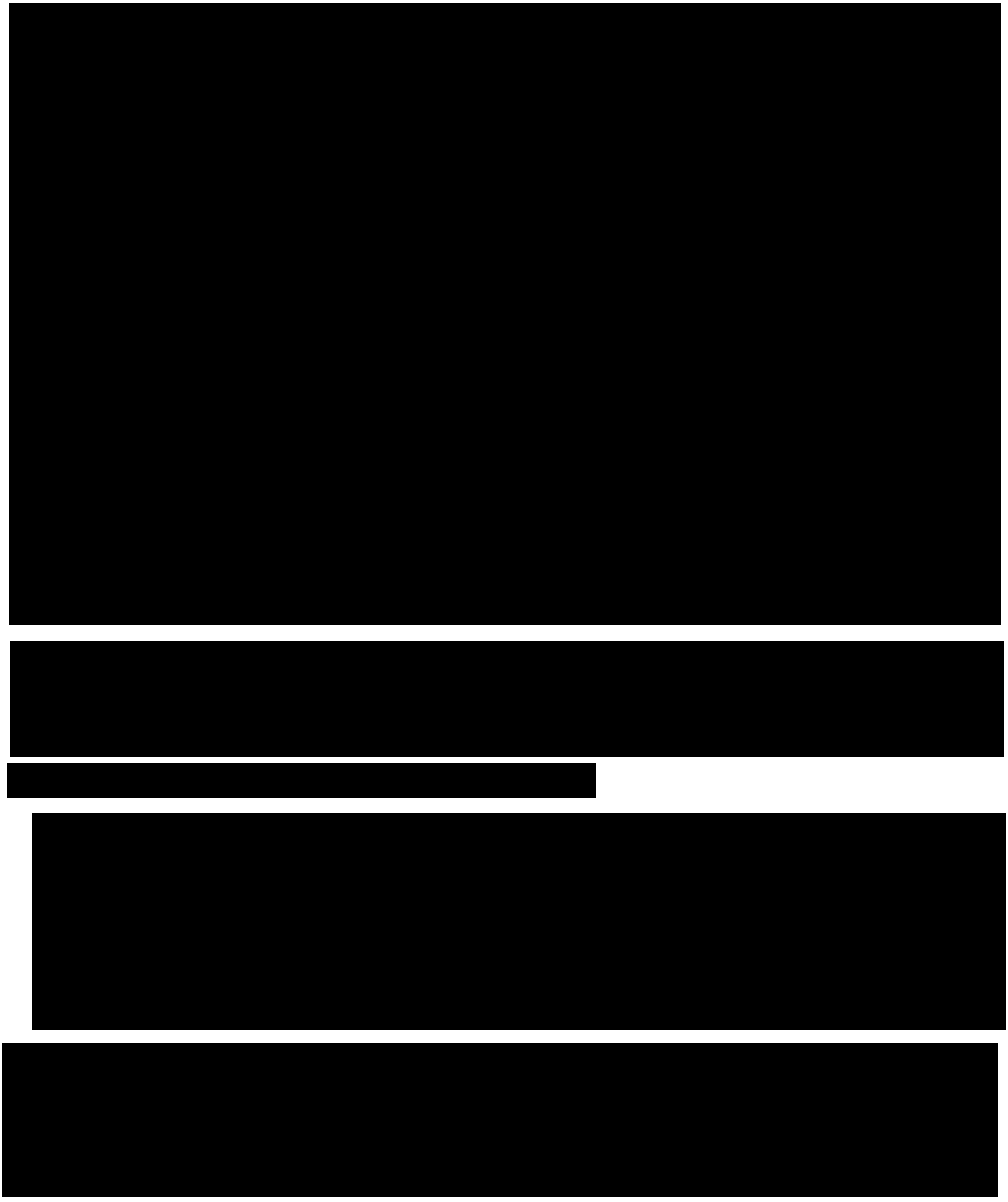
16.5.4.9 Post-Decommissioning Surveys

[redacted]

16.5.5 Prebuild Infrastructure decommissioning

[redacted]

Figure 16-8: Onshore PBI route developed by Atlantic Shores



[redacted]

Table 16-5: [redacted]

[redacted]

16.5.5.1 Machinery Requirements

[redacted]

16.5.5.2 Transition joint decommissioning methodology

[redacted]

16.5.5.3 Cable vault decommissioning

[redacted]

Definitions

A Transition Joint connects subsea cables and land cables with/without different conductor cross sections within the Transition Joint Pit, also called the Sea/Land Transition Joint.

Underground cable vaults are pre-cast concrete spaces installed to facilitate jointing and maintenance of land cable sections.

Manholes provide access to underground electrical cables and their connections.

16.5.5.4 Trench decommissioning

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

Table 16-6: Major crossings identified along the onshore route

[redacted]

16.5.6 Materials disposal

[redacted]

[redacted]

Table 16-7: Quantities and revenue from disposal materials of the proposed offshore wind Project

[redacted]

16.6 Additional environmentally conscious decommissioning initiatives

Atlantic Shores is committed to provide the NJ BPU and the residents of New Jersey with a decommissioning plan that minimizes total impact to the environment. As a result, several initiatives have been considered by Atlantic Shores, outlined in this section.

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

Table 16-8: [redacted]

[redacted]

[redacted]

16.7 Decommissioning costs

As detailed in the decommissioning plans attached as Appendices 16-1 to 16-3, the anticipated cost of decommissioning the Project after its [redacted]

Table 16-9: Decommissioning costs and scrap value estimates

[redacted]

16.8 Funding for decommissioning

As required by the regulations, the cost of decommissioning will be secured in segregated funds in the form of a letter of credit or corporate guarantee that is reasonably satisfactory to the NJ BPU as early as the start of physical offshore construction. [redacted]

16.9 Expected useful economic life

[redacted]

[redacted]

[redacted]

17 Cost-benefit analysis

Contents

List of tables

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Solicitation requirements

Table 17-1 describes the Solicitation requirements of this chapter as put forth in the SGD, as well as the relevant sections addressing these requirements.

Table 17-1: Cost-benefit analysis - References for Solicitation requirements

Key solicitation requirements	Application reference
The cost-benefit analysis for the Project, to show net benefits for the State (N.J.A.C. 14:8-6.5(a)(11))	Section 17.2
Ratepayer net costs with explicit listing of foundations, assumptions, and conditions, consistent with the Project's financial analysis (see Section 3.4), revenue plan (see Section 3.7) and values submitted in the Application Form (N.J.A.C. 14:8-6.5(a)(11)(ii)) (Ratepayer net costs must not include the value of potential decreases in market prices attributable to the Project.)	Section 17.3
Direct, indirect, and induced effects of the economic development plan described in Section 3.8 (N.J.A.C. 14:8-6.5(a)(11)(ix))	Section 17.2
Environmental net benefits, quantified and monetized as described in Section 3.9, with explicit listing of foundations, assumptions, and conditions (N.J.A.C. 14:8-6.5(a)(11)(iii))	Section 17.2.4
Provide information on any State grants or other subsidies from the EDA or other agencies associated with the Project and include the subsidy as part of the Project cost-benefit analysis (N.J.A.C. 14:8-6.5(a)(11)(viii))	Section 17.2.6
An analysis of the potential positive and negative impacts on residential and industrial ratepayers of electricity rates over the life of the Project that may be caused by OREC requests (N.J.A.C. 14:8-6.5(a)(11)(xv))	Section 17.3
Monetization of the direct, indirect, and induced effects of the economic development plan shown as a present value in dollars discounted to December 31, 2022, at a 7% nominal discount rate (N.J.A.C. 14:8-6.5(a)(16))	Section 17.2

17.1 Summary

Detailed, robust, and reliable cost benefit and ratepayer impact analyses are of paramount importance to fully understand the overall benefit of the proposed Project and PBI, as well as the resulting impact on the monthly bills of New Jersey ratepayers. In short, this chapter summarizes a wide range of sections in this Application, considering elements of the economic development plan, the project financing plan, the documentation of financial incentives, the project revenue plan and strategy, the environmental protection plan and emissions impact, the interconnection plan, the O&M plan, and the decommissioning plan to assess economic, environmental, and ratepayer impacts.

Section 17.2 elaborates on the **cost-benefit analysis** of our Proposal. Our [redacted] deliver significant net [redacted]. The long-term nature of these commitments presents a substantial opportunity to the State to secure sustainable job creation and local economic benefits.

With respect to environmental benefits, our Project results in significant net decrease in harmful emission in the State of New Jersey with an estimated offset of [redacted] tons of CO_2 equivalent per year. Most importantly, this means [redacted] of the Project. The derived benefits for the State are calculated to be [redacted] In addition, total ratepayer net costs range from [redacted] calculated as the net present value of the OREC payments less the present value of PJM energy, capacity market, and Class I REC revenue streams during the 20-year OREC term at a discount rate of 7%. Components of Chapter 4 - Financial analysis and Chapter 7 - Project revenue plan and strategy of this Application include an assessment of the market revenues based on estimated net energy production of the Project and market price projections.

Section 17.3 details our calculation methodology and the corresponding results of our **analyses on residential and industrial ratepayer impacts**. The impact of our Project on residential ratepayers will range [redacted]

Cost-benefit analysis | Our commitment to New Jersey

[redacted]

[redacted]

17.2 Cost-benefit analysis

17.2.1 Methodology and assumptions

The cost-benefit analysis is an analytical tool used to assess the positive and negative consequences of our Project to the state of New Jersey. The NJBPU has provided guidance on specific tools that are allowed to be used to calculate a project's cost-benefit ratio, and, as detailed below, we have chosen to [redacted].

This analysis considers three main drivers which are monetized and weighed against each other. They are highlighted below:

1. **Economic Benefits (EB):** Localization of our Project in New Jersey will lead to a positive impact to the economy of the State. Not only will our Project invest directly in the State (as highlighted through our economic development plan in Chapter 8) but it will also employ full time staff from New Jersey. These employees and investments will in turn lead to further benefits across various sectors throuhout the State via their own spending (indirect & induced benefits). Economic benefits are captured across the [redacted] Project lifecycle.
2. **Environmental Impact (EI):** The presence of an offshore wind farm off the coast of New Jersey supplying green electrons to the State will lead to significant positive environmental benefits across the lifetime of the Project. This benefit can be measured in terms of emissions avoided. This is the difference of the emissions avoided through the production of green energy compared to a comparable fossil fuel based power plants providing the equivalent power production as an output. A monetary value is associated with each type of emission, and this allows the absolute number of emissions to be converted into an economic value. This economic value is discounted to generate a present value for the EI.
3. **Ratepayer Net Costs (RNC)**: Following the definition put forth by the NJ BPU, the ratepayer net costs are the present value of the 20-year stream of annual gross OREC payments, calculated at a nominal discount rate of 7%, less the present value of annual revenue from expected capacity and energy-based payments in PJM markets, Renewable Energy Credit (REC) revenue from Renewable Portfolio Standard (RPS) or voluntary markets, potential emission credits from various air emission reduction cap and trade programs.

By combining these 3 elements, the Benefit/Cost Ratio (BCR) can be determined. The formula for the BCR is shown below:

$$\textbf{Benefit/Cost Ratio (BCR)} = \frac{\textbf{EB} + \textbf{EI}}{\textbf{RNC}}$$

A Project that has a BCR greater than 1 indicates that the benefits of the project to the stakeholders, in this case the State of New Jersey and its ratepayers, outweigh the costs, making the project worthy for consideration as an investment of public funding. This Ratio was evaluated for our Project, with and without the PBI, to clearly illustrate all possible combinations to the NJ BPU.

17.2.2 Summary of the results

Table 17-2 presents the cost-benefit analysis for the proposed [redacted] and PBI including a summary of the net costs as derived in Section 17.2.5, the monetized economic benefits as derived in Chapter 8 - Economic development plan and in Section 17.2.3, and the net monetized environmental benefits as derived in Chapter 10 - Environmental protection plan and emission impact. The total monetized benefits (the sum of the economic and environmental benefits) and the ratio of the total benefits to the net costs is provided in the final two lines. For more information on the Project options differences please refer to Chapter 8.

Table 17-2: Summary of the cost-benefit analysis

[redacted]

As shown in Table 17-2, the [redacted] have BCR values in the range [redacted]. For the Base Case option with the PBI the BCR ratio is [redacted] The table highlights the extent to which the inclusion of [redacted] in the State will bring valuable investments to the State, enabled by Atlantic Shores' efforts to [redacted]

17.2.3 Economic Benefits (EB)

This subsection provides a description and monetization of the direct, indirect, and induced effects of the economic development plan (Chapter 8). A tabulation of these monetized effects, as annual in-State job creation (tabulated as FTEs), labor expenditures (tabulated as labor income) and total expenditures (tabulated as output or final demand) is provided in the "Economic Impacts" tab of the New Jersey OREC Application Form, reported by project phase.

To determine the EB of our Project (with and without the PBI), a detailed Input-Output (I-O) model was created using the [redacted] This tool was highlighted as a recommendation in the SGD, and we explicitly employed the services of an experienced consultant on this analysis to ensure we provide reliable, trustworthy results to support the State's evaluation of our Project and PBI offers. A description and results of the I-O model are provided in the economic development plan (Chapter 8 - Economic development plan) of this Application as well as Appendix 17-1 (I-O Model Methodology). The "Bill-of-Goods" list of inputs to the I-O model is provided as Appendix 17-2 and in the "Bill-of- Goods" tab of the Application Form. In particular, we included all available, relevant information for New Jersey in terms of in-state spend, job creation, and average employee salaries for our direct Tier 1 suppliers and contractors, as well as all corresponding information associated with our own operational activities in the State. Some of these activities include:

[redacted]

[redacted]

The resulting output from [redacted] was subsequently used to calculate the BCR.

Table 17-3 - Table 17-6 present the results of the I-O analysis in terms of the various economic impact measures of labor income, value-added and output for each phase of the [redacted] and PBI, and a sum across all phases. "Labor income" is the total compensation received by employees and is a key indicator in the evaluation of a potential economic development project such as this. "Value-added" refers to the increase in economic value that is generated as a result of the project. Labor income is a component of value-added, and value-added is in turn a component of output. The tables show the sum of the direct, indirect, and induced impacts, which is the total impacts for the Project and PBI.

Table 17-3: Total economic impacts (direct, indirect, and induced) for [redacted]

[redacted]

Table 17-4: Total economic impacts (direct, indirect, and induced) for [redacted]

[redacted]

Table 17-5: Total economic impacts (direct, indirect, and induced) for [redacted]

[redacted]

Table 17-6: Total economic impacts (direct, indirect, and induced) for the Prebuild Infrastructure

[redacted]

17.2.4 Environmental Impact (EI)

The EI, or Environmental Net Benefits can be calculated in several ways for the purposes of the cost benefit analysis. The most robust method is to calculate the total social cost of avoided emissions. This is done by calculating the Project's net decrease of emissions region-wide by displacing electricity from fossil fuel power plants and converting the reduction in emissions to a monetary value using figures issued by the governmental agencies. A detailed discussion of the calculation methodology, limitations and assumptions is provided in Appendix 17-3. The calculated Annual Avoided Air emissions are displayed below in Table 17-7. It should be noted that as each of the [redacted] have the same power output the environmental benefits are identical for each of them.

Table 17-7: Annual avoided air emissions[189] in tons per year

The table above shows that the [redacted] will avoid a whopping total [redacted] tons of CO_2e/year for the duration of its lifetime. This is the equivalent of removing approximately [redacted][190] off the road per year! Assuming the standard [redacted] project lifecycle, this translates to a total offset of [redacted] of CO_2e.

17.2.4.1 Monetization of Avoided Air Emissions

In order to convert these values into the net environmental impact, we must consider the cost of emitting a unit of each of the pollutants. Two different sources of data were used to estimate the social cost of avoided emissions. These sources were:

1. US Government's Interagency Working Group (IWG) on Social Cost of Greenhouse Gases (2021)
2. EPA document *Estimating the Benefit per Ton of Reducing Directly-Emitted PM2.5, PM2.5 Precursors and Ozone Precursors from 21 Sectors* (2023)

The first document provides appropriate factors to quantify the monetary value of the net harm to society associated with adding an incremental amount of GHGs to the atmosphere. The second document quantifies the costs of avoided incidents of symptoms, sick days, ER and hospital visits, and mortality associated with the respiratory, cardiovascular, and neurological effects of PM2.5, NO2, and SO2 emissions.

Benefits were calculated using conservatively low assumptions as described in Appendix 17-3. Even with those conservative assumptions, the Project Environmental Net Benefits exceed [redacted] With more realistic assumptions (which would involve the use of higher cost per ton of pollutants) that estimate more than doubles.

17.2.5 Ratepayer Net Costs (RNC)

The RNC are the present value of the 20-year stream of annual gross OREC payments, calculated at a nominal discount rate of 7%, less the present value of annual revenue from expected capacity and energy-based payments in PJM markets, Renewable Energy Credit (REC) revenue from Renewable Portfolio Standard (RPS) or voluntary markets, potential emission

[redacted]

[190] Based on EPA assumption that an average gasoline car releases 4.6 metric tons of CO_2 per year.

credits from various air emission reduction cap and trade programs. Components of Chapter 4 - Financial analysis and Chapter 7 - Project revenue plan and strategy of this Application include an assessment of the market revenues based on estimated net energy production of the Project (Chapter 3) and market price projections. The present values of the gross OREC costs and the revenue credit components are calculated at a nominal discount rate of 7%. The RNC (or the "Net OREC Cost") is calculated as the gross OREC cost less the market revenue credits. The ratepayer net costs for the Projects options and PBI are presented in Table 17-8.

Table 17-8: Ratepayer net costs

[redacted]

17.2.6 Details on state grants and other subsidies

The SGD states that the revenue requirements of the project shall consist of the cost of equipment, financing, taxes, construction, operation, and maintenance, offset by any State or Federal tax or production credits and other subsidies or grants. Therefore, it is required that these grants and subsidies used by the Project and PBI be reported to allow transparency regarding their impact on the OREC price and subsequent impacts on the anCost/Benefit analysis.

[redacted]

[redacted]

17.3 Impacts on residential and industrial ratepayers

17.3.1 Methodology and assumptions

Ratepayer impacts associated with each of the [redacted] and the PBI are based on the ratepayer net costs and the estimated total New Jersey retail electricity load over the 20-year OREC period. The calculation does not include any adjustments for indirect costs or benefits associated with price effects in the energy, capacity, or REC markets, avoidance of greenhouse gas emissions or for the creation of economic activity benefits. These exclusions mean that the ratepayer impacts presented in the ratepayer analysis are based solely on direct costs and do not encompass broader external factors that may influence the overall outcomes. The high level of variability and difficulty in predicting the precise impacts of factors like energy prices, capacity markets, REC markets, greenhouse gas emissions, and economic activity benefits, along with complexities in their interactions, data limitations, and subjective nature of adjustments, contribute to the decision not to include them in the calculation. Impacts are presented in total present value, levelized 2023$ per kWh retail rate change, 2022$ typical residential, commercial, and industrial monthly bill changes, and percentage changes in monthly bills based on current retail rates.

Electricity demand is driven by economic growth and increasing efficiency. According to the 2023 Annual Energy Outlook published by the US Energy Information Administration (EIA), although overall in the United States electricity demand is expected to increase over the period to 2050 for the residential, commercial, and industrial sectors (with average annual growth rates of 0.64%, near zero, and 0.73%, respectively), the growth in demand is expected to be very slow in the mid-Atlantic Region that includes New Jersey. The projected average annual growth rate for residential demand over the period through 2050 is expected to decrease (-0.13% and -0.20%), with industrial demand in New Jersey and the Mid-Atlantic growing at 0.16%.

Based on the most recent data year available, the New Jersey residential, commercial, and industrial sectors consumed a total of 28.61, 38.01, and 6.99 million MWh, respectively. Applying the projected EIA average annual growth rates for each sector to the 2022 consumption values, an estimate for the total amount of electric energy consumed by each sector (Total Retail Load Quantity) over the 20-yr period of the OREC contract is calculated. The present value of the forecast New Jersey Retail Load Quantity is then calculated using the nominal discount rate of 7% to allow for the determination of a real (constant base year dollar) levelized retail rate impact per MWh of retail load. Average 2023 residential, commercial, and industrial rates for electricity in New Jersey were 17.17, 13.55, and 11.17 cents/kWh, respectively. These average rates are multiplied by the calculated Total Retail Load Quantity consumed by each sector of the mid-Atlantic region in the 20-year analysis period to estimate total payments by each sector (latest New Jersey projections have not been published yet).

17.3.2 Results of ratepayer impacts analysis

The allocation of RNC by sector is made based on the percent of total expected payments by each sector over the 20-year OREC contract period. According to the US EIA Annual Energy Outlook 2022, the percentage share of total payments for the residential, commercial, and industrial sectors is 45.45%, 30.82%, and 23.73%, respectively, resulting in allocations of the ratepayer net costs to each sector as indicated in Table 17-9.

Table 17-9: Allocation of ratepayer net cost by sector

The ratepayer impact in terms of expected change in rates by sector (measured in cents/kWh) is determined by dividing the allocated ratepayer costs by the estimated total consumption. The result of this calculation is provided in Table 17-10.

Table 17-10: Ratepayer impact - expected change in rates by sector

Finally, ratepayer impact in terms of change in average monthly bills for each sector is determined by multiplying the expected change in rates for each sector by the expected monthly consumption. According to the US EIA Annual Energy Outlook 2022, the average monthly electricity consumption for the residential, commercial, and industrial sectors was 662.91 kWh, 6,047.62 kWh, and 49,444.46 kWh, respectively. The result of this calculation is provided in Table 17-11.

Table 17-11: Ratepayer impact - expected increase in monthly bill by sector

Please note that all tables provided herein are also provided in Appendix 17-2.

18 Other appendices

In addition to the Appendices attached to each of the Sections above, single Appendices are attached to this Application Narrative.

- Applicant Commitment Form
- Substantiation of Confidentiality Claim and Affidavit
- Administrative Completeness Checklist
- Executed Rate Counsel NDA