ANBARIC

Scaling Renewable Energy

New Jersey Offshore Wind Transmission Proposal

New Jersey Board of Public Utilities and PJM

NJBPU Supplemental Data Collection Form

Boardwalk Power Option 3.1

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Acronyms and Abbreviations

Abbreviation	Meaning
A&G	administrative and general expenses
AACE	American Association of Cost Engineering
AC	Alternating current
AS2	Atlantic Shores 2 - Offshore lease area 2 in Atlantic Shores
AS3	Atlantic Shores 3 - Offshore lease area 3 in Atlantic Shores
BNL	Brookhaven National Laboratory
BOEM	Bureau of Ocean Energy Management
bps	Basis points
capex	Capital Expenditure
CCS	Convertor Cooling System
COD	Commercial Operation Date
CTV	Crew Transfer Vessel
CWIP	construction work in progress
DEA	Designated Entity Agreement
DNCI	Determination of No Competitive Interest
EA	Environmental Assessment
EENT	expected energy not transmitted
EMF	Electro Magnetic Field
ENR	Engineering New Record
EPC	Engineering, Procurement, Construction
ESA	Environmental Site Assessment
FERC	Federal Energy Regulatory Commission
FONSI	Finding of No Significant Impact
FPA	Federal Power Act
FPP	Fisheries Protection Plan
FTCPA	Firm Transmission Capacity Purchase Agreement
GAP	General Activities Plan
GCT	Global Container Terminals
GIS	Gas Insulated Switchgear
GPR	ground penetrating radar
HDD	horizontal directional drilling
HRG	high-resolution Geophysical
HS1	Hudson South 1 – Wind Energy Area A in Hudson South Call Area
HS2	Hudson South 2 – Wind Energy Area E in Hudson South Call Area
HTV	Heavy Transport Vessel
HVAC	High Voltage Alternating Current
HVDC	High Voltage Direct Current
HVDC-VSC	HVDC voltage source converters
ISA	Interconnection Service Agreement
ISCA	Interconnection Service Construction Agreements
LD	Liquidated Damages
LIPA	Long Island Power Authority
LV	Low Voltage
MBE	Minority Business Enterprise
MMC-VSC	modular multi-level voltage source converter
MSBL	Maximum Seabed Level

Abbreviation	Meaning
MSP	marine spatial planning
MW/MWh	Megawatt(s) / Megawatt-hour(s)
NEPA	National Environmental Policy Act
NJBPU	New Jersey Board of Public Utilities
NLCOE	Net Levelized Cost of Energy
NLCOT	Net Levelized Cost of Transmission
NOAA	National Oceanic and Atmospheric Association
NO_x	Nitrogen oxide
NYPA	New York Power Authority
NYSERDA	New York State Energy Research and Development Authority
O&M	Operation and Maintenance
OEM	original equipment manufacturers
OfCS	Offshore Converter Station
OnCS	Onshore Converter Station
OSP	offshore substation platform
OSV	Offshore Service Vessel
OSW	Offshore Wind
OWF	Offshore Wind Farm
PILOT	payments in lieu of taxes
PJM	PJM Interconnection
POI	Point of Interconnection
POIRS	Integration Reference Scenario
PPA	Power Purchase Agreement
PSEG	Public Service Enterprise Group Inc.
REC	Renewable Energy Certificates
RFI	Request for Information
RFL	radio frequency pipe and cable locators
ROE	Return on Equity
ROV	remotely operated vehicles
ROW	Right of Way
ROW/ROE	right-of-way/right of use easement
RSBL	Reference Seabed Level
RTO	Regional Transmission Organization
SAA	State Agreement Approach
SCADA	Supervisory Control and Data Acquisition
SMA	Seasonal Management Areas
SOV	Service Offshore Vessel
SO_x	Sulfur oxide
SSCV	Semi-Submersible Crane Vessel
STATCOM	static synchronous compensator
SWL	Safe Working Load
TRL	technology readiness level
USACE	United States Army Corps of Engineers
USCG	United States Coast Guard
WEA	Wind Energy Area
WTG	Wind Turbine Generator

NJBPU Requested Information Cross Reference Table

BPU Requirement	Document Location
Project Proposal Identification	**Section 2**
Project Summary	**Section 3**
• Narrative description of the proposed project(s) and options	Section 3.1
• Document the projected benefits in terms of design	Section 3.1.2, Section 3.1.3, Section 3.1.4, Section 3.2.1
• Document the projected benefits in terms of flexibility	Section 3.2.4, Section 3.2.4.1
• Document the projected benefits in terms of ratepayer costs	Section 3.2.3, Section 5
• Document the projected benefits in environmental impacts	Section 7.1, Section 7.2
• Identify major risks and provide strategies to limit risks to NJ customers	Section 6
• Include cost recovery and containment provisions	Section 5.2, Section 5.3
Narrative Description of Proposed Project(s)	**Section 3.2**
• Describe primary technical features	Section 3.2.1
• Interconnection points (default or alternative POIs) and the associated transfer capability	Section 3.1.1
• Timeframe for development	Section 8
• How the project(s) will support New Jersey's policy to cost-effectively develop 7,500 MW of offshore wind	Section 3, Section 3.2.3, Section 3.2.4.1
Project Optionality, Flexibility, and Modularity	**Section 3.2.4**
• Ability of project proposals to achieve efficient outcomes through combinations of solutions for Options 1a, 1b, 2 and 3 needs, or ways in which proposed solutions, or portions of proposed solutions, can be combined, integrated, and sequenced to more cost effectively achieve the State's overall public policy and risk mitigation objectives	Section 3.2.4.1
• Ability of the proposed solution to accommodate future increases in offshore wind generation above current plans	Section 3.2.4.2
• Innovative solutions that yield a transmission investment schedule that is optimally aligned with the planned schedule of offshore wind generation procurements	Section 3.2.2, Section 3.2.3
Interdependency of Options	**Section 3.2.5**
• Describe whether selection of another specific proposal will impact this proposal, and if so – how.	Section 3.2.4.1
• Describe whether your project is severable, and the conditions that would be associated with selection of this single proposal	Section 3.2, Section 5
• Describe any benefits to cost, cost-containment mechanisms, phasing, or other relevant elements of the proposal that would stem from co-selection of other proposals.	Section 5.1.1. Section 5.2
• Explain any benefits from selection of multiple proposals that may not be available if a single proposal is selected	Section 5.1.1
Overview of Project Benefits	**Section 3.2.6**
Overview of Major Risks and Strategies to Limit Risks	**Section 3.2.7**
Overview of Project Cost, Cost Containment Provisions, and Cost Recovery Proposals	**Section 3.2.8**
Reliability Benefits	**Section 4**

BPU Requirement	Document Location
• Project's ability to satisfy any applicable reliability criteria that may impact the evaluation of the project even if it was not explicitly stated as part of the original problem statement.	Section 4.1, and Attachment 1 Analysis Report
Project's ability to provide additional benefits associated with reliability criteria, including: • Reduced need for must-run generation and special operating procedures, • Extreme weather outages and weather-related multiple unforced outages, • Reduced probability of common mode outages due to electrical and non-electrical causes, • Islanding, • Power quality degradation	Section 4.1 , and Attachment 1 Analysis Report
Public Policy Benefits	**Section 4.2**
Project's ability to maximize the energy, capacity, and REC values of offshore wind generation delivered to the chosen POIs, including: • Reduce total costs of the offshore wind generation facilities (including generator leads to the offshore substations), • Mitigation of curtailment risks, • Level and sustainability of PJM capacity, congestion, or other rights created by the proposed solution that increase the delivered value of the wind generation or provide other benefits.	Section 4.2
• Project's ability to accommodate future increases in offshore wind generation above current plans	Section 3.2.4.2
Market Efficiency Benefits	**Section 4.3**
• Ratepayer cost savings (the primary evaluation metric), production cost savings, or other benefits	Section 4.3
• Transmission system benefits, such as synergies with transmission facilities associated with ongoing OSW procurements, replacement of aging transmission infrastructure, and other transmission cost savings to New Jersey customers	Section 4
• Capacity market benefits, that may give rise to New Jersey ratepayer cost savings (which is the primary evaluation metric), including through CETL increases, improved resiliency/redundancy, avoided future costs (such as future reliability upgrades or aging facilities replacements)	Section 4
• Other benefits, including State energy sufficiency, reduced emissions, less dependence on fossil-based thermal resources, improvements in local transmission and distribution outages, improvements in local resiliency	Section 4.4
• Attach any relevant supporting analyses and benefits quantifications (including assumptions and analyses, if any) to support the benefits described above that have not been already submitted through the PJM submission forms	Attachment 1 Analysis Report Attachment 2 Cost Benefit Analysis Attachment 10 System Reliability Analysis
Proposal Costs, Cost Containment Provisions and Cost Recovery	**Section 5**
• Any additional cost information not included in PJM's submission forms, including ongoing capital expenditures	N/A

BPU Requirement	Document Location
• For the cost estimates submitted via PJM's submission forms, the cost estimate classification and expected accuracy range consistent with AACE International standards	Section 5.4
• The estimated energy losses of the proposed facilities	Section 5.5
• The physical life and/or economic life (i.e., length over which the facility will request cost recovery) of the facilities	Section 5.6
• A description of each cost structure proposed for the project, including cost containment mechanisms and cost recovery approach	Section 5.2, Section 5.3
• If a fixed revenue requirement is being requested, files specifying the annual revenue requirements over the economic life of the proposal. Similar to the proposed cost cap mechanisms submitted to PJM, please include proposed contractual revenue requirement commitment language to be included in the Designated Entity Agreement. The Contractual revenue requirement commitment language must be identical to that submitted in the PJM Competitive Proposal Template	N/A
• Please explain how the costs of the proposed projects may be impacted by selection of a subset of the options versus the entire proposed project	Section 5.1.1
• Please explain any additional cost control mechanisms provisions for the BPU to consider that were not included in the PJM submission forms	Section 5.2
Project Risk and Mitigation Strategy	**Section 6**
• Project's plan for site control and the ability to achieve site control	N/A
• BOEM issuance of a right-of-way, a right of use and easement	Section 6.2
• Discuss the project stakeholder engagement plan's ability to minimize public opposition risk from the fishing industry, coastal and beach communities, and other stakeholder groups.	Section 6.3
• Identify any construction techniques will be needed – benthic substrate, long HDD spans, existing cables, pipelines or other infrastructure, sandwaves/megaripples, contaminated sediment, dredging, or onshore waterbody crossings – that may result in project delays or cost overruns	Section 6.4
• Identify known or potential time of year restrictions on construction activity, particularly related to listed species or beach restrictions.	Section 6.6
• Identify compensatory mitigation estimates needed for wetland impacts and any potential risk with availability of wetland credits.	Section 6.7
• Identify supply chain constraints or material procurement risks that may impact the project.	Section 6.8
• Identify project-on-project risks related to the timing or completion of other transmission and offshore wind projects built to achieve the New Jersey public policy requirement.	Section 6.9
• Describe and provide proposed contractual language for any project schedule guarantees, including but not limited to guaranteed in-service date(s), financial assurance mechanisms, financial commitments contingent on meeting targeted commercial online dates, and delay damage or liquidated damage payment provisions, that have been proposed.	Section 6.10, Section 6.10.1
• Identify any additional risks associated with the project that could lead to increased costs, reduced project benefits (reliability, market	Section 6.11

BPU Requirement	Document Location
efficiency, and/or public policy), or delayed development and delivery of the proposed offshore wind generation.	
• Provide any relevant technical studies or documentation related to efforts taken to mitigate the risks identified above	Section 6.12 Attachment 6 Studies Completed to Mitigate Identified Risks
Environmental Impacts and Permitting	**Section 7**
Include an Environmental Protection Plan which describes all associated onshore and/or offshore environmental impacts from the planning, construction, and operation phases of the project, including, but not limited to: • Physical Resources • Biological Resources • Cultural Resources • Socioeconomic Resources • GIS Desktop Study of potential impacts to sensitive resources including tabular summaries of acreage and distance calculations • Shapefiles of cable routes, landfall locations, offshore platforms, and onshore interconnection points that show: • Width of individual cable routes or shared power corridors • Footprint of onshore substation including expansion needed and acreage calculations of habitat disturbance, especially related to wetlands, forested areas, or other sensitive habitats • Descriptions of cable installation methods with locations identified • General footprint and extent of Horizontal Directional Drilling (HDD) boreholes and cable landings • Footprint and extent of associated pre-construction and construction activities • Projected vessel traffic and/or vehicles needed for project surveys, construction, operation, and project closeout including emissions estimates from vessel and/or vehicle activity • Any needed exclusion zones around project infrastructure including offshore platforms • Plan to address the identified impacts described above, including innovative measures to avoid, minimize or mitigate impacts.	Section 7.1, and Attachment 15 Environmental Protection Plan
Environmental Benefits: anticipated environmental benefit of a particular transmission proposal in comparison to radial lines: • How does the project reduce environmental impacts to fisheries, habitat, and sensitive resources in comparison to radial lines? • What is the reduction in impacts (approximate area) compared to radial lines, temporary and permanent?	Section 7.2, and Attachment 16 Environmental Benefits

BPU Requirement	Document Location
• A description of whether and how the project infrastructure, including offshore platforms, could provide direct ocean and ecological observations throughout the water column	
Fisheries Protection Plan: • 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, and fisheries-independent data, and identifies species of concern and potentially impacted fisheries; • A scientifically rigorous plan to detect impacts to marine resources, including biota and recreational and commercial fisheries; • Identification of all potential impacts on fish and on commercial and recreational fisheries off the coast of New Jersey from pre-construction activities through project close out; • 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; • An explanation of how the Applicant will provide reasonable accommodations to commercial and recreational fishing for efficient and safe access to fishing grounds; • 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.	Section 7.3, and Attachment 17 Fisheries Protection Plan
• Provide an analysis showing that project infrastructure will not impact overburdened communities in a disproportionate fashion.	Section 7.5, and Attachment 15 Environmental Protection Plan
Permitting plan: provide a description of the applicant's permitting plan that includes the following: • Identify all local, State and/or Federal permits and/or approvals required to build and operate the Project and the strategy and expected time to obtain such permits and/or approvals; • Provide documentation of consultation with USACE beach replenishment projects and sand borrow areas, if applicable; • 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; • Submit a land use compatibility / consistency matrix to identify local zoning laws and the consistency of applicant's activities in each local jurisdiction;	Section 7.6, and Attachment 18 Permitting Plan

BPU Requirement	Document Location
• Identify each appropriate State or Federal agency the Applicant has contacted for land acquisition issues and provide a summary of the required arrangements; • Include copies of all submitted permit applications and any issued approvals and permits; and • Include copies of all filings made to any other regulatory or governmental administrative agency including, but not limited to, any compliance filings or any inquiries by these agencies.	
DEP Checklist	Attachment 14 DEP Checklist

1 Qualification Statement

Anbaric Development Partners, LLC, with its investors, respectfully responds to the PJM and New Jersey Board of Public Utilities State Agreement Approach solicitation for up to 7,500 megawatts of transmission for offshore wind. Anbaric's investors include:

- The Ontario Teachers' Pension Plan Board ("Ontario Teachers'") - Canada's largest single-profession pension plan with more than $221 billion (Canadian) of assets under management
- Ferreira Construction, Co. Inc. ("Ferreira") - one of New Jersey's largest civil and utility construction contractors

In this document, "Anbaric" or "the Company" refers interchangeably to both Anbaric Development Partners, LLC and Anbaric's predecessor entities that have successfully developed electric transmission projects, as described below in Section 1.1.3 and 1.1.4.

Anbaric brings a formidable record of developing underground and underwater high-voltage direct current (HVDC) transmission systems in New Jersey and New York, financing electricity infrastructure projects, building projects on time and on budget, and operating and maintaining transmission systems consistent with the highest commercial and regulatory standards. This track record confirms that the transmission system(s) awarded under the State Agreement Approach (SAA) Solicitation will be designed, developed, financed, built, and operated as specified, while protecting the environment and the New Jersey ratepaying public. These systems will catalyze the growth of the offshore wind industry in New Jersey and will spur its development along the Atlantic Coast.

Together, Anbaric, Ontario Teachers', and Ferreira offer a new business model to New Jersey and the offshore wind industry: diverse experience presenting solutions for transmission infrastructure that reduces costs to ratepayers while protecting the environment and stimulating competition among offshore generators – both first movers and new entrants. This business model includes a new minority-owned, New Jersey-headquartered business as an investor and construction partner. This partnership will provide an inclusive, efficient, and productive future for New Jersey's offshore wind industry and its accompanying private sector investments and job growth. The following Sections provide Anbaric's development experience and each investor's relevant experience in more detail.

1.1 Anbaric

Anbaric[1] is a majority employee-owned, American company headquartered in Massachusetts that has more than two decades of development experience in New Jersey. Anbaric is an Ontario Teachers' Platform Company, 60% owned by Anbaric AP3, and 40% owned by Ontario Teachers' through its Tx Grid 1 LLC subsidiary. Anbaric's business model (i.e., a lean, multi-skilled team)

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[1] https://anbaric.com/

keeps overhead to a minimum and focuses spending on development rather than overhead, maximizing value to the ratepayer.

Anbaric was formed in March 2017 as a joint venture between Anbaric AP3, LLC and Tx Grid 1 LLC (a wholly-owned subsidiary of Ontario Teachers'). Through this subsidiary, Ontario Teachers' is committed to funding the development and capital costs of Anbaric projects. Anbaric and Ontario Teachers' have invited Ferreira to become a minority investor in the projects that Anbaric will submit into the State Agreement Approach (SAA) solicitation.

Anbaric develops transmission projects which link regional markets and bring onshore and offshore renewables to population centers. Anbaric's offshore wind transmission projects include transmission facilities serving a single offshore wind project as well as transmission systems for multiple offshore wind projects. Additionally, the Company develops energy storage projects for the bulk power grid. Anbaric has pipeline of transmission and storage projects in New Jersey, New York, and New England in various stages of development.

Anbaric worked to spearhead the development of two 660 megawatt (MW) HVDC projects, the Neptune Regional Transmission System ("Neptune"), operational in 2007, and the Hudson Transmission Project ("Hudson"), operational in 2013. Each project was completed on time and on budget with total capital expenditure (capex) of over $1.5 billion.

Anbaric has a demonstrated record of working with union labor for our projects. Both Neptune and Hudson were entirely union projects and engaged locals of numerous trades, and we are committed to doing the same on all projects moving forward.

More recently, in June 2021, Anbaric and Mayflower Wind, LLC ("Mayflower"), a developer of offshore wind generation projects backed by Shell, EDPR, and Engie, completed a transaction for Anbaric's 1,200 MW of transmission assets under development. This transaction will enable the Mayflower offshore wind farm to connect into Brayton Point, the site of a former coal plant in Somerset, Massachusetts.

Anbaric is a Designated Entity under the PJM tariff and is the entity formally responding to the SAA solicitation.

1.1.1 Anbaric's Vision

Since the Northeastern United States first started discussing the possibility of offshore wind industry, Anbaric has been a leading voice advocating a "**transmission-first**" approach to developing offshore wind projects first by planning transmission infrastructure to launch the industry and then creating an offshore grid to meet the transmission needs of a large and growing industry. The transmission-first approach reduces the risks involved in developing offshore wind generation by planning and streamlining the most complex part of the development process – connection to the onshore grid. This approach protects the environment by minimizing the number of transmission links to shore and ensures that each interconnection point absorbs as much offshore wind as possible. Importantly, the transmission-first approach reduces costs to ratepayers by providing every generator an equal ability to secure transmission on open-access transmission systems, thus creating a levelized competition among early entrants to the US market and more recent entrants.

This approach has worked effectively in Germany, The Netherlands, and Belgium, and is now being embraced by Great Britain.

Following the creation of planned, open-access transmission infrastructure, the type of transmission envisioned in the State Agreement Approach solicitation, the next stage in the transmission-first approach is the development of an offshore grid. This step builds on open-access transmission infrastructure readily developed with current technology and includes a series of transmission links bringing renewably generated electricity to shore, connections among those links, and offshore substation platforms that emulate the core capabilities of the onshore grid. The core capabilities of an offshore grid and their benefits include:

- **Multiple paths to deliver electricity to load centers** and corresponding reliability benefits, preventing loss of generated electricity due to one down transmission line.
- **Almost instantaneous ability to clear faults**, reducing equipment damage, high power quality, better safety, and high-power system transient stability.
- **Efficiency of scale** that a grid provides allows offshore wind to flow to the onshore grid though multiple paths to various destinations. This substantially reduces losses due to curtailments and outages, which is especially significant when delivering electricity from intermittent resources.

Finally, an offshore grid, if well-conceived and designed, can complement the onshore grid and increase its operational capabilities and resilience. The National Academy of Engineering recognized that the onshore grid was the greatest engineering achievement of the 20th century[2] , and Anbaric respectfully believes that adding the flexibility of an offshore grid to the strength of the onshore grid increases reliability, serves the interests of ratepayers in low-cost solutions and addresses the emerging needs of a low carbon economy.

The time to create a true offshore grid is upon us. With the commercial deployment of DC breakers and full bridge converters, an offshore grid can be designed and built today. However great the benefits of such an offshore grid, Anbaric recognizes that there are cost implications of deploying these technologies now. The offshore grid will develop and, as new links and offshore platforms are added, will grow organically, in stepwise fashion and in lockstep with an evolving offshore transmission need; just as the onshore grid itself developed. Therefore, Anbaric proposes the first step towards a true offshore grid within the Boardwalk Power Portfolio. Table 1-1 details the benefits of transmission-first development as compared to traditional development.

Table 1-1 Transmission-First Development

Transmission-First	Status Quo
• OWFs compete on basis of ability to develop OWFs at the lowest possible cost • Transmission infrastructure is dimensioned to maximize transmission capacity	• OWFs compete on basis of location and first-come-first-served assignment of POI • Transmission infrastructure is dimensioned for the associated OWF, and not for highest possible circuit capacity

[2] https://www.nae.edu/7461/GreatAchievementsandGrandChallenges

Transmission-First	Status Quo
• Transmission infrastructure is design to minimize cost for the New Jersey rate payer	• Transmission infrastructure is designed to minimize cost for the OWF developer
• POIs are assigned to ensure the optimized use of available POIs and corridors, and align the integration of offshore wind with onshore grid characteristics in a coordinated way	• POIs are chosen to minimize cost and risk for the OWF developer
• The maximal use of available transmission technologies results in fewer cables and hence minimize environmental impact	• Transmission technologies are chosen to minimize cost and risk for the OWF developer and not to minimize the environmental impact
• The maximal use of available transmission technologies results in fewer cables, landfall sites and onshore construction works and hence minimize adverse impact on local communities	• Transmission technologies are chosen to minimize cost and risk for the OWF developer and not to minimize the adverse impact on local communities
• The offshore transmission network is designed to improved availability where economically advantageous by making use of geographic synergies	• Transmission systems are designed to serve the need of the associated OWFs. Synergies with adjacent (but competing) OWFs are not realized leading to a foregone availability benefit
• Transmission systems are designed for multi-purpose infrastructure use of offshore wind export as well as backbone functionality, improving the return-on-investment	• Transmission systems are designed for the sole function of offshore wind export

The first step consists of establishing an assessment of the current and future transmission needs. This is necessary to define common technical transmission characteristics, such as a common transmission technology, voltage levels, and operational philosophy, allowing different offshore links to connect into an integrated system. Next, the offshore substation platforms must be designed with a level of expandability with sufficient space and functionality to install and connect future offshore transmission links. This will enable the first so-called multi-terminal grids to be built to improve availability and reduce both costly and polluting must-run generation onshore and offshore in case of export link outages. Finally, standards are identified for modular transmission links, a one-size-fits-all design standard, which enables significant cost savings and risk reductions while offering flexibility to accommodate future scenarios. Together, these move New Jersey substantially in the direction of a true offshore grid by joining the “Option 2” and “Option 3” bid packages in Anbaric’s Boardwalk Power Portfolio. The next step, which may occur sooner than expected, depending on how quickly technology advances, builds on these approaches and enables Anbaric’s transmission system to employ evolving technology to capture the benefits of a true grid. This grid contains multiple offshore connections to New Jersey’s and other states’ Points of Interconnection (POIs) and delivers offshore wind into different states or different Regional Transmission Organization (RTO) and the offshore grid enables the trade of energy between different points along the U.S. east coast. This offshore transmission grid increases the reliability of both the onshore grids and the offshore wind connections by providing multiple transmission paths while improving flexibility by coupling offshore wind farms with multiple onshore POIs. HVDC fault clearing systems such as HVDC circuit breakers, will be installed at important locations to safeguard the continuous supply of clean power to consumers in case of system contingencies, at the lowest cost. Based on the previously defined common technical characteristics, an HVDC system grid code and interoperability guideline further bolster compatibility, opening up the competitive procurement of HVDC equipment from a diverse supply chain.

The resulting multi-terminal, multi-purpose, inter-state, and multi-vendor offshore grid enables the large-scale deployment of offshore wind energy, and the economically optimal dispatch of geographically diverse clean energy resources. Offshore wind export, as well as energy trade flows, share the same multi-purpose infrastructure. By coordinating the transmission and offshore wind procurement planning with a long-term planning horizon, impacts on the environment and local communities can be minimized, while strengthening the U.S. energy systems resilience and spurring the creation of a local supply chain.

Without this broader goal of a true offshore grid, New Jersey will be forced to follow the status quo of an incremental approach to an industry that shows enormous potential for large scale job creation, triggering private investment, and accelerating the transformation to a low carbon economy. The time to step towards an offshore grid is now.

1.1.1.1 Anbaric Policy Development

Anbaric advocates a “transmission-first” approach to developing offshore wind projects and the creation of an offshore grid to meet the transmission needs of the industry.

In New Jersey, New York, Connecticut, and Massachusetts, as well as at industry conferences and with stakeholders ranging from recreational and commercial fishing organizations to environmental organizations, community groups, and local governments, Anbaric has identified the energy, economic, and environmental benefits of planned, open-access transmission systems to serve the offshore wind industry and the ratepaying public. This work has included advocating for the separate procurement of offshore wind transmission and generation, incorporating lessons from transmission systems in the Netherlands, Germany, Belgium, and Great Britain into the development of policies here in the northeastern United States, identifying the trade-offs among policy approaches to transmission development, comparing the benefits of HVAC and HVDC technology, and urging states, RTOs, and ISOs to develop plans to connect substantial amounts of offshore wind while protecting the environment, minimizing costs to ratepayers, and utilizing every point of interconnection up to its electrical capacity.

Anbaric respectfully submits that the Company has helped certain states and the federal government develop a complete understanding of the multiple benefits of planned, open-access transmission and how a transmission-first approach can accelerate the growth of the offshore wind industry.

1.1.2 Project Experience

Anbaric’s two decades of experience in New Jersey has familiarized the Company with every aspect of transmission development in the state. Anbaric has helped complete large, complex transmission projects in the most densely populated, environmentally sensitive, and logistically difficult places to construct linear projects in New Jersey: in the Raritan River, Raritan Bay, outer New York Harbor, Bergen County to the edge of the Hudson River, and in the Hudson River to the boundary with New York State.

1.1.2.1 The Neptune Regional Transmission System

Anbaric and the Atlantic Energy Partners team developed the Neptune Project[3] ("Neptune"): a 660 MW (500 kV) HVDC submarine electric transmission cable that connects power generation resources in the PJM system to electricity consumers on Long Island as seen in Figure 1-1. The cable extends 65 miles (mi) (105 kilometers [km]) from the First Energy substation in Sayreville, New Jersey to the Long Island Power Authority's (LIPA's) Newbridge Road substation in Nassau County, New York. This project was completed ahead of schedule and under budget.

The capital cost for Neptune was approximately $600 million. Neptune was the second project to receive FERC approval under the Federal Power Act (FPA) Section 205 for a Negotiated Rate Tariff and later participated in a competitive LIPA RFP in which it was selected in 2004. Neptune subsequently executed a 20-year Firm Transmission Capacity Purchase Agreement (FTCPA) with the Long Island Power Authority for Neptune's transmission capacity. This off-take agreement with LIPA provided the financial basis for the project's debt and equity financing. After separate and highly competitive tenders for project equity and project financed debt, the project closed financing on July 15, 2005. The project debt at closing was investment grade and the project was recognized as North American Infrastructure Project Finance Deal of the Year in 2005 by Institutional Investor Magazine. Neptune began commercial operations in June 2007.

Figure 1-1 Neptune Project and Hudson Project routes

3 www.neptunerts.com

1.1.2.2 The Hudson Transmission Project

Mr. Krapels, the founder of Anbaric, was also a founder of Hudson Transmission Partners, LLC, the developer of the Hudson Transmission Project[4] ("Hudson"): a 660 MW HVDC system between New York City and PJM Interconnection. This transmission system provides a source of electric power for the New York City customers of the New York Power Authority (NYPA) and access to renewable resources throughout PJM. Hudson has back-to-back converter stations in Ridgefield, New Jersey and connects to the New York City grid at Con Ed's West 49th Street substation via an alternating current (AC) cable installed underground in railroad rights of way in Bergen County and then beneath the Hudson River and across the West Side Highway and into the substation.

The capital cost for Hudson was over $800 million. The project was selected by NYPA, and Hudson entered into an FTCPA with NYPA. It was a project financed via a long-term contract with NYPA and began commercial operations in June 2013.

The existence of a 20-year FTCPA with NYPA and the Anbaric development team's experience with the Neptune project provided the basis for the equity and non-recourse project debt. The same equity investors from Neptune provided the project equity for Hudson. The project was constructed using local union labor, including, but not limited to, members of the International Union of Operation Engineers (IUOE), International Brotherhood of Electrical Workers (IBEW), Pipefitters, and Laborers. Pipefitters and Laborers.

1.1.2.3 The Brayton Point Renewable Energy Center

In June 2021, Anbaric and Mayflower Wind, LLC completed a transaction for Anbaric's 1,200 MW of transmission assets under development which will enable the Mayflower offshore wind generation project to connect at the Brayton Point substation, the former site of New England's largest coal plant, along the southern Massachusetts coastline in Somerset, MA. Mayflower Wind, LLC is a developer of offshore wind generation projects backed by Shell New Energies[5], the renewable development subsidiary of Portugal's utility, EDP Renewables[6], and Engie.

1.1.3 Current Projects

1.1.3.1 Offshore Wind Transmission Systems into New York

Anbaric continues to develop transmission systems for future offshore wind injections into Long Island, New York and New York, New York.

On Long Island, Anbaric is developing an interconnection position at Ruland Road, a 138 kilovolt (kV) substation in the heart of Long Island's load pocket. The Company selected this location several years ago as an ideal interconnection point for substantial injections of power. A permittable route to the coast has been identified, which also has community support. Anbaric has worked with state and local government authorities to place the route in the state, county, and municipal rights of way (ROW). Anbaric now manages the interconnection process for its 1,200 MW HVDC interconnection

[4] www.hudsonproject.com
[5] https://www.shell.com/energy-and-innovation/new-energies.html
[6] www.edpr.com/en

into Ruland Road, has received a System Reliability Impact Study, and expects to enter Class Year 2022. The company maintains site control for its converter station site and has extensive community, governmental, and stakeholder relation commitments.

In New York City, Anbaric is developing its interconnection position at the Gowanus substation, Con Ed's 345 kV substation close to Brooklyn's waterfront. Anbaric selected this location as an ideal location for the injection of offshore wind because of its ability to absorb large amounts of energy, and its proximity to New York harbor. Anbaric now manages the interconnection process for 1,200 MW HVDC interconnection into Gowanus, has received a System Reliability Impact Study, and expects to enter Class Year 2022. Anbaric is preparing an Article VII permit application, maintains site control for its projected converter station, is selecting its preferred marine and terrestrial routes, and maintains its community, governmental, and stakeholder relation commitments which complement similar work on Long Island.

1.1.3.2 NY Public Policy for Transmission Need Project

In 2018 Anbaric participated in a public policy planning process with NYISO. Anbaric recognized and stated the challenges of injecting offshore wind into New York, particularly Long Island, and the resulting need to transmit this power to load centers.

In the summer of 2021, NYISO issued Public Policy Transmission Needs (PPTN) solicitation to address this very issue - solutions to transmission needs to meet Long Island's additional transfer capacity, allowing it to absorb increased amounts of offshore wind energy and efficiently move the power around the state. Anbaric plans to present solutions, solutions that Anbaric has been developing for a number of years, in a submission package due later this fall.

1.1.3.3 Long Island Storage Center

Anbaric recently submitted project proposals for 1,000 MWh of battery storage in response to the 2021 Request for Proposals (RFP) for "Bulk Energy Storage" issued by Public Service Enterprise Group Inc. (PSEG) Long Island on behalf of the Long Island Power Authority (LIPA). The proposals cover development, design, financing, building, owning, and operating three battery storage installations, sited on Brookhaven National Laboratory's (BNL) property and a LIPA peaker site. The projects will provide significant research and educational benefits through BNL's Center for Grid Innovation, and the LIPA-supported Jones Beach Energy and Nature Center. The development team includes Ontario Teachers', Tesla (technology partner), and BNL (project host and research partner). We anticipate an award decision in the coming six months.

Anbaric is working with Tesla on multiple storage projects. This relationship helps to ensure that our projects have the optimal technology at the lowest cost.

1.1.3.4 [redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

1.1.4 Key Employees

Anbaric's Project development qualifications include the significant experience of its Senior Management staff.

Clarke Bruno

Clarke Bruno is Chief Executive Officer of Anbaric. He has twenty-five years of private and public sector experience in energy development and law. He joined the company in 2010 as its general counsel and became President of Transmission in 2017.

Prior to joining Anbaric, Mr. Bruno served as energy and environmental counsel to New Jersey Governor Corzine where he helped draft the energy master plan and increase investment in the grid. During New York City Mayor Bloomberg's first term, Mr. Bruno led the effort that won dismissal of multiple, decades-old class-action lawsuits. Before entering government, he practiced law for nine years following a federal clerkship. Mr. Bruno chaired the NYC Bar Association's energy committee from 2012-2015.

Mr. Bruno graduated with honors from Swarthmore College, where he won a Watson fellowship to study in Ghana and Brazil, and cum laude from New York University School of Law where he was awarded a Hays fellowship.

Mr. Bruno will remain ultimately responsible for the development of Anbaric's project(s) awarded under the State Agreement Approach solicitation.

Timothy L. Vaill

Timothy L. Vaill is Anbaric's Chief Financial Officer, responsible for overseeing the firm's capital structure, financial planning, and financial management. He is the key liaison with Anbaric's co-owner and investment partner, Ontario Teachers'.

Mr. Vaill is the former Chairman and Chief Executive Officer of Boston Private Financial Holdings, Inc., a publicly owned investment management and banking company. He held this position for 17 years. Prior to this role, Mr. Vaill was an Executive Officer for an American Express subsidiary, The Boston Company, and a senior financial consultant for Fidelity Investments in Boston. Mr. Vaill also served on the Economic Development Team for the Commonwealth of Massachusetts under Governor Deval Patrick prior to joining Anbaric.

Mr. Vaill holds an MBA in Finance from the Harvard Business School, a Master's in Public Administration from the Harvard Kennedy School and a B.S. degree in Mathematics from Tufts University. He serves on several boards and was formerly the Chairman of the Economic Development Council for the Town of Andover, where he resides. He continues to serve as a member of the Investment Committee for the Massachusetts $75 billion State Pension Fund, MassPRIM.

Mr. Vaill will be responsible for the financial performance of Anbaric's project(s) awarded under the State Agreement Approach solicitation.

Janice Fuller

Janice Fuller is President, Mid-Atlantic with Anbaric where she leads the Company's transmission development work in New Jersey and New York.

Prior to joining Anbaric, Ms. Fuller served as Chief of Staff to Congressman and House Energy and Commerce Committee Chair Frank Pallone (NJ-06), where she oversaw staff executing legislation ranging from telecom to environmental issues. She has also held roles as Director of Cabinet Affairs in the administration of Governor Jon Corzine where she oversaw the operations of several state departments and as the Executive Director of a state political party.

Ms. Fuller graduated with honors from Boston University. She is an elected member of the Board of Education in her hometown of Ocean, New Jersey, as well as serving as a board member of the Boys & Girls Club of Monmouth County.

Ms. Fuller will lead the development of Anbaric's project(s) awarded under the State Agreement Approach solicitation.

Howard Kosel

Howard Kosel is a Partner and Project Manager with more than 40 years of experience in the energy industry. Prior to joining Anbaric, Mr. Kosel was a Managing Director at Abatis Capital LLC, where he served as the Asset Team Lead responsible for asset valuation, market analysis and due diligence of prospective investments.

Mr. Kosel held a number of leadership positions while working at KeySpan Corporation including Senior Vice President of the unregulated subsidiary KeySpan Energy Development Corporation, and Vice President of Generation Operations. KeySpan's growth during Mr. Kosel's tenure included: acquisition of the 2,168-megawatt Ravenswood Generating facility located in New York City; the development and construction of the Ravenswood 40, a 250-megawatt natural gas-fired combined cycle facility; and the development and construction of 160 megawatts of peaking power plant projects on Long Island.

At KeySpan, Mr. Kosel additionally held many senior operating positions in electric generation including plant manager and chief engineer. He also served as Manager of Electric Design and Construction for transmission and distribution.

Mr. Kosel oversees the company's technology operations and will have a key role in developing Anbaric's project(s) awarded under the State Agreement Approach solicitation.

Greg Pratt

Greg Pratt serves as a senior financial and development advisor to Anbaric and the principal of GAP Advisors LLC, a development, finance, and strategy consulting and advisory firm. He is an international energy sector executive with more than 30 years of experience in finance, project development, strategy, and general management. In addition to the US, he has lived and worked in the UK and in Australia. He has been actively involved in the development, financing, construction and operation of power generation, pipeline, natural gas compression and transmission projects in more than a dozen countries on four continents.

Prior to GAP Advisors, Greg held a variety of leadership roles over a span of 25 years with InterGen Services, Inc., an international energy company. During that time, Greg served as Chief Financial Officer, Head of Development and Strategy, and Managing Director of InterGen's Australia business among other roles.

He earned degrees from Claremont McKenna College and Massachusetts Institute of Technology. Mr. Pratt will assist in the financing and development of Anbaric's project(s) awarded under the State Agreement Approach solicitation.

Bryan Sanderson

Bryan Sanderson is a Partner and Project Manager. He brings over two decades of experience in energy markets, with a strong background in both the natural gas and power sectors. Prior to joining Anbaric, he held roles in project development and energy marketing with Invenergy, an IPP specializing in the development of wind and natural gas generation assets. In these roles, he was responsible for early-stage development activities and hedging risk and market modeling for assets approaching or in commercial operation.

Before moving to the asset side of the energy business, Mr. Sanderson provided consulting and market advisory services to a range of clients across the energy value chain and held a position on the energy trading desk of a major hedge fund. He was responsible for modeling supply, demand, price, basis, analyzing numerous market-related issues and communicating his views on the markets to clients and traders.

Mr. Sanderson holds a B.S. and M.S. in Chemical Engineering from Massachusetts Institute of Technology, and an MBA from the Kellogg School of Management at Northwestern University.

Mr. Sanderson will join in the financial, technology, and operational work in developing Anbaric's project(s) awarded under the State Agreement Approach solicitation.

Theodore Paradise

Theodore Paradise is the Executive Vice President of Transmission Strategy & Counsel and Partner at Anbaric. Mr. Paradise brings over 20 years of experience responding to regulatory and practical issues surrounding power system planning and operations. At Anbaric, Mr. Paradise helps to identify how transmission and energy storage can enable the transformation of the power grid and scale renewable energy across North America. Mr. Paradise also oversees related federal policy and regulatory matters.

Prior to joining Anbaric, Mr. Paradise spent 15 years at ISO New England Inc., where he served as Assistant General Counsel, Operations & Planning. In that role, Mr. Paradise oversaw legal issues related to power system operations, generator interconnection and regional and interregional transmission planning – including competitive transmission, transmission siting and cost allocation.

Prior to joining the ISO, Mr. Paradise was an attorney with the energy practice group of Swidler Berlin Shereff Friendman LLP in Washington, DC where he represented an independent grid operator and investor-owned public utilities.

Mr. Paradise received his Juris Doctor degree from Georgetown University Law Center and his BA from the University of Idaho.

Mr. Paradise will oversee the legal and regulatory aspects of developing Anbaric's project(s) awarded under the State Agreement Approach solicitation.

Soam Goel

Soam Goel is a Senior Partner with Anbaric. Mr. Goel leads investments in storage, microgrid projects, campus energy infrastructure, and existing energy infrastructure that can be transformed through significant capital investments.

Prior to joining Anbaric, Mr. Goel was the Chief Commercial Officer of Power Network New Mexico, a wholly owned subsidiary of Goldman Sachs Global Infrastructure Fund (GSIP). He originated the $400M project for GSIP. Mr. Goel founded Enersights in 2004 to provide strategic advice to senior executives of utility companies and financial participants. Prior to that, Mr. Goel spent ten years with PA Consulting and its predecessor firms where he co-headed the energy M&A practice. Under his leadership, the firm conducted assignments such as company, generation, and transmission transactions – $40M to $8B in size – for utilities, industry vendors, investment banks, and private equity. Mr. Goel has experience working for the Unilever Group of Companies as part of their fast-track management development program. Mr. Goel received a Bachelor of Technology in Chemical Engineering from the Indian Institute of Technology and an MBA from the University of Texas at Austin.

Mr. Goel resides in Montclair, New Jersey and will assist in the financing and development of Anbaric's project(s) awarded under the State Agreement Approach solicitation.

1.1.5 Additional Team Members

In addition to the key employees listed above, Anbaric has built a network of collaborators including the following New Jersey companies:

- Chiesa Shahinian & Giantomasi
- Fox Rothschild, LLP
- Windels Marx Lane & Mittendorf, LLP
- Kivvit

- Spiezle Architects
- CLB Partners
- The Zen Group (Artie Cifelli)
- SK Partners (Sen Joe Kyrillos)
- Matrix New World Engineering
- Colliers Engineering

1.2 Development Partners

1.2.1 Ontario Teachers'

An independent organization since 1990, Ontario Teachers' invests and administers the pensions of more than 329,000 active and retired teachers in the Province of Ontario. As of December 31, 2020, Ontario Teachers' had net assets of $221 billion Canadian, invested across a mix of public and private equities, bonds, commodities, real estate and infrastructure assets, absolute return strategies, and natural resources. Ontario Teachers' credit rating is Aa1 from Moody's[8] and AA+ from Standard & Poor's[9]. Since 1990, its annualized total-fund net return averaged 9.6%. Ontario Teachers' is well capitalized and can fund the transmission project(s) awarded to Anbaric in this State Agreement Approach solicitation, as well as the other transmission and storage projects in Anbaric's development pipeline. It does not need to go to the capital market or seek other investors to raise the cash for development, construction, or permanent equity. Through its investment in Global Container Terminals, Inc. (GCT), Ontario Teachers' New Jersey assets include the Bayonne Container Terminal which was the first container terminal on the East Coast to institute an appointment system, which reduced traffic, CO_2 emissions, and air pollution. Ontario Teachers' representatives serve on GCT's board.

Ontario Teachers' has a specialized Infrastructure and Natural Resources investment department (INR) that invests and manages its infrastructure portfolio. INR takes an active asset management and governance approach to investing, preferring direct investment in private companies within countries that have a stable economic and political environment. Ontario Teachers' targets infrastructure assets that are relatively low-risk and offer long-term, stable returns in line with the requirements of its pension plan. Its infrastructure and natural resources portfolio was valued at approximately $25.2 billion Canadian as of December 31, 2020, and includes airports, water and wastewater utilities, electricity and gas distribution, renewable power generation, container terminals, onshore oil and gas, timberland, and agricultural assets.

Additionally, INR has a team dedicated to renewable and greenfield investments. As part of this mandate INR has invested in several platforms including a transmission development platform and three renewable power platforms, the most recent being Equis Developments, a Singapore based

[8] https://www.moodys.com/credit-ratings/Ontario-Teachers-Pension-Plan-Board-credit-rating-809848977
[9] https://www.otpp.com/investments/investor-relations/credit-rating

developer of renewable power and waste treatment assets in Asia Pacific. In addition to Anbaric, its other platform companies include those listed in Table 1-2.

Table 1-2 Ontario Teachers' INR Investment Summary

Investments	Location	Timeframe	Description
Transmission Development and Renewable Energy Investments			
BluEarth Renewables	North America	2010 – 2019	Headquartered in Calgary, BluEarth is a private independent renewable power producer, focused on the acquisition, development, construction and operation of wind, hydro, and solar projects. Ontario Teachers' was a founding investor in 2010 and under its ownership grew the platform to 400MW of operating renewable projects and an additional 1,000 MW under development.
Cubico	Global	2015 – Present	Cubico Sustainable Investments is a leading investor in, and long-term owner and operator of, global renewable energy projects, currently operating in 13 countries. The company owns over 3 GW of installed capacity and 114 assets. Established in 2015, the company is jointly owned by Ontario Teachers' and PSP Investments.
Equis Developments	Asia Pacific	2020 – Present	Equis is focused on developing, constructing and operating renewable energy and biomass generation, electric distribution and transmission and waste infrastructure assets in Australia, Japan and South Korea. In 2020 Ontario Teachers and Abu Dhabi Investment Authority (ADIA) committed $1.25 billion of capital to fund development and construction equity.
Infrastructure and Power Sector Investments			
Saesa	Chile	2008 – Present	SAESA is a vertically integrated group of electricity generation, transmission, and distribution companies in Chile. SAESA owns and operates more than 37,280 miles (60,000 km) of power lines for 930,000 customers. Ontario Teachers' and the Alberta Investment Management Corporation ("AIMCo") each own 50% of the company.
Puget Sound Energy	Washington State	2021 – Present	Earlier in 2021, Ontario Teachers' acquired a 15.8% stake in Puget Sound Energy, the oldest and largest electric and natural gas utility in the state of Washington, serving approximately 1.2 million electric customers and 900,000 natural gas customers in the Puget Sound region.
Caruna	Finland	2021 - Present	In March 2021, Ontario Teachers' acquired a 40% interest in Caruna, Finland's largest electricity distribution company. Caruna distributes electricity and maintains, repairs and builds a weatherproof electricity network for its approximately 700,000 customers in South, Southwest and West Finland, as well as in the city of Joensuu, the sub-region of Koillismaa and Satakunta.
Global Container Terminals	New Jersey	2007 – Present	One of Ontario Teachers' infrastructure investments, Global Container Terminals (GCT), has a significant portion of its operations in New Jersey. Since 2007,

Investments	Location	Timeframe	Description
			Ontario Teachers' has had a substantial investment in GCT and driven significant results at the Bayonne Terminal: • Grew lifts approximately 80% since 2008 • Grew revenue approximately 110% from 2008 • Spent approximately $340 million in capex since 2008 There are 500 unionized workers at Bayonne – the International Longshoreman Association (ILA) – Local 1588, Local 1804-1 and Local 1. The terminal has been recognized for its strong environmental record, with its appointment system reducing carbon emissions and air pollution as well as its Greenville rail yard project, the first such project awarded by the Port Authority of New York and New Jersey.

1.2.2 Ferreira

Ferreira[10] completes the Anbaric and Ontario Teachers' development/investment team. Founded in 1988, Ferreira, a privately held company led by Nelson Ferreira, is among one of the most successful civil, power and utility contractors in New Jersey, now with operations from Maine to Florida and in California. Ferreira and its affiliates had revenues over $600 million in 2020, bonding authority over $500 million, and more than 1,200 employees nationally. Ferreira is a qualified power/utility/civil contractor certified as a Minority Business Enterprise (MBE) and is among the largest minority-owned businesses in New Jersey.

Ferreira has been steadily increasing its position in the construction market sector and has been listed as one of the Top 400 Contractors in Engineering News-Record (ENR) industry rankings, moving up from 233 in 2016 to 173 in 2020; Ferreira ranked #1 in Power in ENR's Regional New York/New Jersey rankings in 2021. Ferreira brings its record as a civil, power, and utility contractor, training programs, and its close relationship with New Jersey's organized labor unions to the projects included in the Boardwalk Power Portfolio Anbaric is submitting to the SAA Solicitation.

More specifically, in New Jersey, as a premier construction organization and industry leader in seamless, safe, and economical project delivery, Ferreira has been awarded numerous projects focused on civil construction and utility construction. Ferreira is currently working on many utility projects for National Grid, Exelon (ACE/PECO/PEPCO), FP&L, PP&L, Eversource, Liberty Utilities, Con Edison, and PSEG in excess of $250 million. Some of its more notable projects include but are not limited to those detailed in Table 1-3.

[10] www.ferreiraconstruction.com

Table 1-3 Ferreira Projects

Project	Location	Cost	Description
PSEG Roseland-Pleasant Valley Overhead Civil	New Jersey	$200 million	Project consists of demolishing over 30 miles of the existing 230kV overhead transmission facilities and installing monopole foundations for over 50 miles of existing 138kV transmission line.
CPV Woodbridge Energy Center Project (CPV)	New Jersey	$68 million	A design-build/EPC contract with Competitive Power Ventures - this project consisted of installing 1.7 miles of underground cable, 21 transmission towers with deep foundations and three tunnels. We value engineered the foundation portion of the work using pile supported caps instead of caissons to mitigate any disturbance to the contaminated soil. Additionally, since the project was in marsh / swamp land, we created a floating access road to give our crews access to the more challenging areas. All this work was done in and around unexploded ordinance since the area used to be an old arsenal site.
PSEG Metuchen-Trenton-Burlington Project Access Roads & Foundations (MTB)	New Jersey	$150 million	This project will upgrade the existing 138kV transmission circuits and equipment between Metuchen and Burlington to operate at 230kV. The 50 miles of existing underbuilt distribution and sub-transmission lines will be rebuilt and re-attached to the new structures as necessary.

Both the CPV and MTB projects received the New Jersey Leading Infrastructure award by the New Jersey Alliance for Action.

In addition to this work, Ferreira's affiliates are involved in numerous projects throughout New Jersey reflecting the Ferreira Family of Companies diverse portfolio. Ferreira's affiliate Valiant Power Group is a certified MBE electrical contractor based in New Jersey. Valiant, is a full-service commercial and industrial electrical contractor. Valiant has been working in New Jersey since 2013 and has amassed an extensive project portfolio, especially substation construction. It provides a composite team of Journeymen Linemen, Wiremen and Technicians to build and maintain Conventional & GIS Substations from 4kV to 500kV. Valiant's team has safely and successfully performed construction and maintenance projects on both new and existing indoor, conventional and GIS Substations. Examples of their work includes but is not limited to:

Table 1-4 Ferreira Affiliate (Valiant) Projects

Project	Location	Description
PSEG Cox's Corner 230K-kV Shunt Reactor	Evesham Township, New Jersey	The dry-type Reactor was the first installation of its kind for PSEG. Along with the reactor, VPG built a new bus section and breaker to complete the full installation of a new 230kV bay. On the controls side, VPG integrated the new control racks into the existing relay system plus performed the pulling and termination of all cables to the new equipment. Also included in this scope was the extensive addition and modification to the ground grid, as well as the installation of three dual tap CTs and one neutral CT, two lightning masts, and two overhead static wires. This project required detailed planning as the schedule was segmented between outage and non-outage activities. Field supervision worked with project

Project	Location	Description
		management to develop and maintain critical path tasks with the customer as well as integrate the civil construction activities.
PSEG Branchburg 500kV Transformer	Readington Township, New Jersey	Following the major failure of a 500kV transformer, Valiant was tasked to install a new SMIT 500kV Transformer at Branchburg 500kV Substation. The site was energized for the duration of the project with 500/230/13kV. VPG coordinated delivery of all equipment, as well as assembled, wired, and terminated the 500kV to 230kV transformer. Our controls crew was responsible for all power, control, fiber, and tertiary cables in the 500kV yard, 230kV yard and the Control house. Throughout the installation VPG complied with the NERC CIP status of the Branchburg 500kV yard, ensuring the security and reliability of the electric grid. This NERC-CIP designated 500kV yard is critical for the electrical infrastructure in the Northeast. Valiant was responsible for the replacement of 500-3 C Phase transformer and coordinated with SMIT representatives to bring Phase A and B up to specification for the installation of the transformer monitoring system.
Princeton University Campus Electrical Infrastructure Upgrade project	Princeton, New Jersey	The Elm Drive Substation was fed electricity from two PSE&G substations - one at Elm Drive and one at Charlton Street. Combined, these two had a capacity of 30MW. While this is sufficient capacity at the time, any significant new building construction would require a new substation to maintain an adequate supply. Princeton identified the need for a new 75MW substation to alleviate the capacity limit on PSE&G's existing supply to campus. The University decided to construct a new substation in West Windsor where PSE&G has sufficient capacity and power the campus from it. Valiant was responsible for the substation construction of this project which was completed in 2020.

Ferreira Construction affiliate companies are also active investors. Since 2011, these Ferreira affiliates have completed multiple transactions involving solar generation in New Jersey. Most notable, was the development of the Somerset County Improvement Authority Solar Power Purchase Agreement (PPA). The project involved developing a portfolio of 33 photovoltaic systems, installed at various Somerset County owned assets. The total project installed capacity is 8.03 MW DC. The project was initially developed in partnership with Citi Bank, and ownership has now completely transferred to the Ferreira affiliate. The PPA is due to expire in 2026.

2 Project Proposal Identification

Proposing Entity Name: Anbaric Developer Partners, LLC

Company ID: Option 3.1

Project Title: Boardwalk Power Option 3.1

PJM Proposal ID: 2021-NJOSW-428

3 Portfolio and Project Summary

3.1 Boardwalk Power Portfolio

Anbaric is pleased to present a portfolio of 19 project proposals, cumulatively referred to as the "Boardwalk Power Portfolio". The Boardwalk Power Portfolio forms a comprehensive, flexible, and scalable offshore wind transmission solution. The goal of the Boardwalk Power Portfolio is to assist New Jersey in achieving its target of delivering 7,500 MW of offshore wind energy by the year 2033.

The recent New Jersey solicitation has been the spark to bring the offshore transmission grid backbone to life. Anbaric has been an industry leading voice advocating a "transmission-first" approach to developing offshore wind projects and creating an offshore grid to meet the transmission needs of the industry. The SAA solicitation provides the perfect opportunity to bring the benefits of Anbaric's offshore transmission grid vision to reality.

3.1.1 Summary

The Portfolio contains project proposals for the possible transmission links necessary for reliable, efficient, and cost-effective interconnection of the offshore wind farms to be competitively selected in the future New Jersey offshore wind solicitations and joining those wind farms to POIs in New Jersey. Subsets of these 19 project proposals form complete offshore transmission systems addressing the needs of different future New Jersey offshore wind solicitation results, all adding up to 7,500 MW or more.

Each project proposal has been prepared in accordance with the guidelines outlined in the New Jersey Board of Public Utilities (NJBPU) and PJM Interconnection (PJM) offshore transmission solicitation[11]. As represented in Figure 3-1, Anbaric is submitting twelve (12) Projects under "Option 2" (yellow components below) and seven (7) Projects under "Option 3" (blue components below) for NJBPU/PJM consideration.

[11] 2021 NJ Offshore Wind SAA Transmission Proposal Window Overview – Dated 15 April 2021.

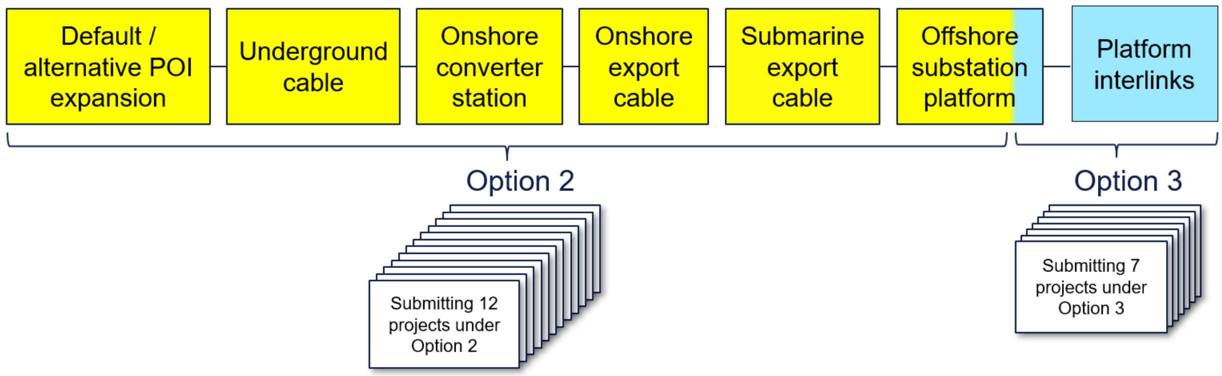

Figure 3-1 Offshore Transmission Solution Scope Elements

The NJPBU/PJM Problem Statement for Option 2[12] requests the development of point-to-point transmission links between onshore substations and offshore wind farms (OWF). The goal of Option 2 projects is to export the energy generated from OWFs in the most cost-effective way and to enable future offshore grid connections to be made. Anbaric does not foresee the need for new onshore substations, and hence all Option 2 project proposals will tie-in to existing substations. The twelve (12) Option 2 project proposals are differentiated by a few factors, as detailed further in Table 3-1:

1. Location of the offshore substation platform (OSP) (i.e., the OWF which is injecting energy into the grid)
2. Location of the Point of Interconnection (POI)
3. Transmission link type (submarine/underground), capacity, and voltage.

The NJPBU/PJM Problem Statement for Option 3[13] requests the development of transmission interlinks between two or more OSPs. Option 3 projects are the 'keystones' that lock the Option 2 projects into position to form an offshore transmission network. The goal of Option 3 projects is to improve the availability of the offshore transmission system, to provide redundant auxiliary power, and to enable backbone functionality between two or more separate onshore POIs. The Boardwalk Power Option 3 Projects consist of submarine cable circuits between OSPs and the associated interfacing equipment. The seven Option 3 project proposals are distinguished by the different OSPs that they connect.

The 19 projects, as presented in Table 3-1, Figure 3-2, and Figure 3-3, submitted for NJBPU/PJM consideration as part of the Boardwalk Power Portfolio include six (6) OSPs, with a capacity per OSP ranging between 1148 MW to 1510 MW, and are named after the closest OWF lease area:

1. Hudson South Lease Area A (HS1)
2. Hudson South Lease Area E (HS2)
3. Atlantic Shores 1 (AS1)
4. Atlantic Shores 2 (AS2)
5. Atlantic Shores 3 (AS3)
6. Ocean Wind 2 (OW2)

12 Option 2 Problem Statement For 2021 SAA Window to Support NJ OSW v.4.11.21
13 Option 3 Problem Statement For 2021 SAA Window to Support NJ OSWv.4.11.21

From these six OSPs, Anbaric is presenting various submarine/underground transmission link routes that will connect to one of three POIs. [redacted] Lastly, three onshore HVDC converter stations are proposed to be built within a short distance of these three POIs.

In addition to providing a full set of transmission solutions for future offshore wind solicitations, Anbaric has included projects within the Boardwalk Power Portfolio to connect the recently awarded Atlantic Shores 1 and Ocean Wind 2 offshore wind farms. These additional Boardwalk Power Portfolio projects provide constructable, competitive, and low risk solutions to transport the power generated by these wind farms to a POI, maximizing the benefit for New Jersey ratepayers.

Table 3-1 Summary Description of Project Submittals

[redacted]

[redacted]

Figure 3-2 Single Line Overview of Boardwalk Power Portfolio

[redacted]

Figure 3-3 Boardwalk Power Portfolio Map

3.1.2 Design Standard

The projects in the Boardwalk Power Portfolio are based on a common technical design which can be repeated for subsequent offshore transmission links. This design standard:

- Reduces costs
- Minimizes risks
- Improves performance by enabling compatibility between different projects

The key technical design parameters of the projects have been standardized to achieve cost savings resulting from modularity and compatibility with other offshore links to enable the development of an offshore grid, as further described in Section 3.1.3.

The design standard approach allows Anbaric to build on lessons learned and minimize uncertainties and risk. The award of multiple projects, based on a design standard approach within the Boardwalk Power Portfolio, enables the optimization of fabrication leading to efficiency gains during project management and in operation, resulting in substantial cost savings for the State of New Jersey ratepayers.

This modular, flexible, and future-ready transmission system is a key tool to unlock the benefits of an interconnected offshore grid for the State of New Jersey ratepayers. The modularity of the design standard is achieved by identifying a high-level system design envelope, such as transmission link technology and voltage rating, while maintaining enough flexibility to vary certain design parameters for project specific needs. The design standard can be re-used for subsequent proposed projects by adapting the project specific parameters such as cable length and water depth. By repeating the design, engineering, and development approaches, and by installing multiple interlinks in one installation campaign, costs can be shared between projects, leading to a multi-project cost-savings. Using a design standard also automatically ensures that different links are technically compatible and can, within limits, be interlinked into an operational offshore grid. Offshore, the interlink cable circuits will be installed within the same shared cable corridors, to the extent possible, with the goal of minimizing impacts on the environment, local communities, shipping, and permitting constraints.

3.1.3 Technology

The Boardwalk Power Portfolio utilizes state-of-the-art high-voltage direct-current (HVDC) technology to ensure cost-effective, reliable, and efficient long-distance transmission of power with the lowest possible impact on the environment, fisheries, and local communities.

Anbaric advocates the use of one common voltage level to ensure basic compatibility between different offshore HVDC links and enable the interconnection into a multi-terminal offshore transmission system. Anbaric has chosen a transmission voltage of ±400 kV DC to ensure sufficient transmission capacity to meet the needs of any of the identified Wind Energy Areas (WEAs) and lease areas off the coast of New Jersey while respecting the maximum loss of infeed. The choice of transmission voltage is sufficiently high to enable transmission capacities for current and future export of New Jersey offshore wind procurements with single circuits, thereby minimizing the required number of offshore cable circuits. The voltage level is sufficiently low to avoid unnecessary investment in overcapacity or the risk of stranded assets. Transmission capacities ranging between 1,148 MW and 1,510 MW can be accommodated using the same OSP design and general arrangement.

Modular multi-level voltage source converter (MMC-VSC) technology will be used both onshore and offshore to enable the connection of AC offshore wind turbine generators, minimize the footprint and visual impact of the onshore converter station, and achieve high transmission efficiencies. This type of converter technology has excellent control capabilities, making it the most suitable choice for multi-terminal HVDC transmission systems. The onshore and offshore converters will be configured as a symmetrical monopole. This converter configuration is widely used and enables the use of standard AC equipment while minimizing the impact of DC faults on the AC grid. To avoid the need for additional costly AC collector platforms, the offshore wind farm 66 kV AC array cables will be directly connected to the offshore converter platform.

Technical aspects associated with production, construction, transportation and installation, commissioning, and operation and maintenance of this Project are discussed within the Option 3.1 Technical Bid document.

3.1.4 Multi-Terminal Readiness

Anbaric sees the current New Jersey offshore transmission solicitation as a steppingstone towards realizing the vision of a future coordinated interconnected offshore HVDC grid. Future additions to the HVDC links built in the current solicitation can realize high power backbone capacity to enable the exchange of power between New Jersey and POIs in more remote and diverse energy markets in different states, different RTO/ISO zones, and even different countries.

The adoption of a design standard fosters the stepwise evolution into an interconnected offshore grid. It ensures common technology and system ratings and thus enables expandability and compatibility between adjacent projects. This enables different Option 2 HVDC export links to be connected offshore by means of an Option 3 offshore HVDC interlink. In the SAA solicitation, this type of interlink unlocks three concrete benefits:

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

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[redacted]

[redacted].

A more detailed explanation of different forms of HVDC system fault clearing is given in Attachment 1 Analysis Report. It is recognized that the technical maturity of HVDC circuit breakers as a component has been proven at full-scale in projects such as PROMOTioN[14].

Building on the latest available experiences and knowledge in the field of HVDC circuit breakers, the projects will be designed to be compatible with the future addition of interlinks with HVDC circuit breakers to realize the third benefit. This connection would effectively create an offshore HVDC backbone grid. This type of benefit will materialize in offshore grid expansions beyond the current offshore transmission solicitation. HVDC circuit breakers are believed to play a pivotal role in the realization of such regional grids, and the proposed projects are designed to be compatible and futureproof.

3.2 Boardwalk Power Option 3.1

In response to the "Option 3" problem statement of the PJM and NJBPU offshore transmission solicitation, [redacted], but Anbaric can accelerate this timeline forward to meet the requirements of the outcomes of any coming New Jersey offshore wind solicitations. This Proposal is the first of the seven (7) proposals which Anbaric has prepared in response to the

[14] https://www.promotion-offshore.net/

problem statement for “Option 3". Figure 3-4 presents the Boardwalk Power Option 3.1 route map in red.

Table 3-2 Boardwalk Power Option 3.1 Component Inputs

[redacted]

[redacted]

Figure 3-4 Overview of Boardwalk Power Option 3.1

3.2.1 Primary Technical Features

The Project's technical features are based on the design standard, technology, and multi-terminal readiness presented in Section 3.1.2, Section 3.1.3 and Section 3.1.4. A high-level technical overview of the Project is shown in Figure 3-5 and consists of the following key elements:

[redacted]

Figure 3-5 Technical Overview of Boardwalk Power Option 3.1

The Project is designed to optimally improve the availability of the offshore transmission system. The Project uses state-of-the-art offshore transmission technology to realize [redacted] offshore transmission capacity offshore wind generation capacity reliably and cost-effectively to via an adjacent export link with minimal environmental impact. The transmission link rating is designed to match the anticipated offshore wind solicitation sizes as well as transmission capacities of other Anbaric "Option 2"' solutions with which it should be combined to realize the cost-saving synergies and performance improvements.

3.2.2 Timeframe for Development

The Project duration is highly dependent on time of award, anticipated commercial operation date (COD) of the OWF to be connected, and vendor selection. A generic and conservative schedule is provided in Section 8 but is subject to adjustment during final design. The COD is determined by the New Jersey offshore wind solicitation schedule and the available offshore WEAs and lease areas.

3.2.3 Role in Cost-Effective Development of 7,500 MW of Offshore Wind

The Project provides a cost-effective contribution to reach New Jersey's goal of 7,500 MW by 2033 by enhancing the performance and hence the return on investment of "Option 2" based offshore transmission links. The Project does so base on proven technology to [redacted] Furthermore, the Project provides the ability to enable backbone transmission functionality, thereby creating an offshore transmission grid.

3.2.4 Project Optionality, Flexibility, and Modularity

Anbaric's Boardwalk Power Portfolio is aimed at providing PJM and the NJBPU with all the necessary options and flexibility to realize offshore transmission systems to accommodate the planned and future increases of offshore wind generation. The modular design based on a design standard can be cost-effectively replicated for projects with a range of capacities matching the New Jersey offshore wind solicitations and WEA capacities. As a result, the transmission investment schedule can be matched with the offshore wind procurements, minimizing investment in under- or overcapacity and reducing the risk of stranded assets.

3.2.4.1 Combinations of Solutions

The Anbaric Boardwalk Power Portfolio consists of stand-alone projects which can be combined to form an interconnected offshore transmission grid to cost-effectively and reliably address the transmission need created by the offshore wind deployment off the coast of New Jersey.

The "Option 2" and "Option 3" Anbaric projects have been designed to be combined, with already awarded transmission solutions by OWF developers as well as with other Anbaric projects, to realize the transmission capacity needed to meet the 7,5 GW offshore wind target by 2033.

For the purpose of the PJM SAA transmission solicitation, there are four categories of OWF export links which are summarized in Table 3-3. These categories can be differentiated based on:

- Whether OWFs have already been awarded in the New Jersey offshore wind solicitation or not
- Whether the OWFs will build their own export link or connect to the SAA grid.

The Project is compatible with any other project within the Anbaric Boardwalk Power Portfolio. The Project can also be connected to OSPs or "Option 2" links constructed by other developers, provided that the necessary technical parameters are aligned to ensure compatibility. Anbaric will be a willing partner in cooperating with other developers for this purpose.

Table 3-3 Types of OWF Export Link Projects in SAA Offshore Transmission Solicitation

	OWF project was awarded PPA in previous New Jersey offshore wind solicitation	OWF project to be awarded PPA in future New Jersey offshore wind solicitation
Included within Anbaric Boardwalk Portfolio	OWF already awarded and connects to Anbaric proposal for SAA grid	OWF awarded in future solicitation and will connect to Anbaric proposal for SAA grid
Not included within Boardwalk Power Portfolio	OWF already awarded and builds own transmission link	OWF awarded in future solicitation and builds own transmission link, or connect to SAA grid by non-Anbaric proposal

The New Jersey 7.5 GW offshore target includes the OWF projects Ocean Wind 1, Ocean Wind 2, and Atlantic Shores 1 which were awarded in the 1st and 2nd New Jersey offshore wind solicitations.

The Ocean Wind 1 project will build its own offshore transmission link. Anbaric has therefore not included any projects relating to Ocean Wind 1 in the Boardwalk Power Portfolio. The Ocean Wind 2 and Atlantic Shores 1 projects may connect with their own offshore transmission links or connect to the SAA offshore transmission grid. For this reason, Anbaric has included proposals to connect these OWFs in accordance with the proposed Design Standard. Finally, some OWF projects may be awarded in future offshore wind solicitations but build their own offshore transmission link or be connected to the SAA offshore transmission grid by means of a non-Anbaric proposal.

Anbaric “Option 2” projects can technically be implemented in any order. In reality, the sequence and timing of the realization of “Option 2” projects are likely to be coupled to the outcomes of the New Jersey offshore wind solicitations. The “Option 3” projects can be realized after the associated “Option 2” projects have been completed.

To illustrate how the Boardwalk Power Portfolio projects may be combined in a range of different outcomes in regard to the New Jersey offshore wind solicitations and the SAA offshore transmission solicitation, Anbaric has prepared a number of plausible offshore transmission network build-out and/or expansion “Pathways”. Pathways are a grouping of Anbaric and non-Anbaric projects meant to illustrate a complete 7,500 MW offshore transmission grid. Anbaric has hypothesized seven (7) Pathways that achieve this goal; however, Option 3.1 is included in only two (2) Pathways, Pathway 1 and Pathway 2, which are presented below. Refer to Attachment 1 Analysis Report for a full description of Pathway 1 through Pathway 7.

The Pathways, presented in Table 3-4 and Table 3-5 and Figure 3-6 and Figure 3-7 use the same color coding to indicate which offshore transmission links in the Pathway are included in the Boardwalk Power Portfolio, and which ones are not. In Figure 3-6 and Figure 3-7, the transmission links which are included in the Boardwalk Power Portfolio are shown as dark blue lines, and the ones which are not as grey.

In the following Pathways, it is assumed that OWF projects located close to the shore have a higher likelihood of being competitively selected, even if the ‘transmission-first’ approach is chosen. This is due to increased offshore logistic costs and possibly deeper water depths associated with OWFs further from shore. Anbaric used this offshore wind deployment sequence in combination with the latest New Jersey offshore wind solicitation schedule to determine illustrative CODs.

The Pathways show complete end-states of the envisaged offshore transmission grid by 2033 upon completion of the 7.5 GW capacity target, for different offshore wind deployment scenarios.

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Table 3-4 Projects Included within Development Pathway 1

[redacted]

[redacted]

Figure 3-6 – Illustration of Development Pathway 1

Table 3-5 Projects Included within Development Pathway 2

[redacted]

[redacted]

Figure 3-7 – Illustration of Development Pathway 2

The need for different Pathways arises owing to the imperative to meet the results of different offshore wind generation procurements, the differing POI locations, the capacity to be transmitted, and the offshore wind farm location. As a result, different pathways result in:

- Different total transmission capacities – as documented in Table 3-4 and Table 3-5.
- Different onshore power injection distributions and sequences – as documented in Table 3-4 and Table 3-5.
- Different achievable benefits – as documented in Section 4
- Different environmental impacts – as documented in Section 7.1, Section 7.2, and Section 7.3
- Different permitting requirements – as documented in Section 7.6
- Different total transmission costs – as documented in Section 5
    - Different transmission projects
    - Different achievable multi-project cost-savings
- Different transmission investment ramp-ups/schedules – as documented in Section 5
- Different risk profiles – as documented in Section 6

Ultimately, different outcomes of offshore wind solicitations and the associated alternative transmission pathways result in different benefits for the New Jersey ratepayer. At the same time, it is desirable to provide a level competitive playing field for OWFs regardless of their location and COD. To achieve both competitive offshore wind auctions, while ensuring an optimal transmission Pathway for the NJ rate payer, the BPU must first decide whether to include the results of the second offshore wind procurement in the transmission system that it selects. Anbaric has presented Pathways that enable the BPU to make this decision. In the event that the BPU decides to allow those projects to rely on their own generator lead lines to connect to the grid, Anbaric has presented Pathways to make this decision and maximize the benefits of a transmission system for the remaining available lease areas to reach the 7,500 MW goal and take the first steps to building a true offshore grid and secure the resulting benefits. New Jersey is in the enviable position of having wind energy areas off its coast with a potential wind generation capacity well above the State's current 7,500 MW goal – and those areas are located in close proximity to one another. This represents a unique and important opportunity for the State to consider what goals its next transmission procurement should embrace, i.e., what is the appropriate MW size for that procurement, what offshore grid features should be defined, what characteristics of that true offshore grid should include, and how that grid fits into its procurement plans for offshore wind, fortifying the on-shore grid, and transitioning to a low-carbon economy. Anbaric looks forward to responding to that procurement.

3.2.4.2 Future Increases in Offshore Wind Generation Above Current Plans

Future New Jersey offshore wind procurement above the current target of 7.5 GW will most likely be realized in the WEAs in the Hudson South Call Area, and the Garden State lease area. Anbaric's analysis has shown that the projected OWF projects in these areas have capacities between 1.3 – 1.5 GW. The design standard, and the Option 3 projects proposed by Anbaric based on the ±400 kV

VSC-HVDC symmetrical monopole, and the proposed offshore interlink routes ideally fit the projected capacities and locations of the remaining offshore WEA Hudson South B, C, D and F. As such, Anbaric's standard design is scalable and readily applicable to other offshore wind solicitations beyond New Jersey's 7.5 GW target by adjusting the project specific parameters (e.g., OSP location, water depth and cable length). The more OSPs that are connected by means of Option 3 type links, the higher the performance of the resulting offshore grid. As such, Anbaric's proposals for Option 3 projects are the steppingstones to a true offshore transmission grid enabling the cost-effective and reliable integration of offshore wind beyond the current 7.5 GW target.

3.2.5 Interdependency of Options

The Boardwalk Power Option 3.1 anticipates the completion of projects addressing "[redacted]. Option 3.1 is naturally compatible with any of the Boardwalk Power Portfolio Option 2 projects (except 2.9) serving these WEAs, but can also be connected to OSPs constructed by other developers provided that technical parameters necessary for compatibility are aligned.

The Boardwalk Power Option 3.1 does not specifically depend on projects addressing "Option 1a" but anticipates that onshore grid upgrades to meet system reliability needs are completed before the Option 2 projects that Boardwalk Power Option 3.1 depends on.

The Boardwalk Power Option 3 projects are not stand-alone and can only be implemented in combination with other Option 2 project proposals by Anbaric or other entities. Examples of how the Boardwalk Power Option 3.1 Project can be utilized to address the New Jersey offshore wind solicitations within two (2) development Pathways are listed in Section 3.2.4.

Depending on the combination of the awarded Boardwalk Power Portfolio projects and associated build-out schedule, cost reductions of up to [redacted] for identified Pathways (e.g., three transmission links [from Option 2] and three platform interlinks [from option 3]) can be achieved. An explanation of synergies factoring into multi-project selection and associated cost-savings is detailed in Section 5.1.1.

By combining two or more Boardwalk Power Option 2 projects with a compatible Boardwalk Power project for Option 3, redundant transmission capacity can be realized, and the availability of the resulting offshore transmission grid can be substantially improved. [redacted]. Refer to Attachment 1 Analysis Report for further information regarding these calculations. Viable combinations of different Boardwalk Power Option 2 and Option 3 project proposals are listed in Table 3-6. The combinations that can be made with Option 3.1 have been highlighted green.

Table 3-6 Interdependence Between Option 2 and Option 3 Project Proposals

[redacted]

The interoperability of multi-vendor commercial projects has not yet been proven with current HVDC technology. Moreover, control and protection systems are vendor-specific, and are not always readily compatible as there is no commonly agreed-upon HVDC grid code. As a result, to realize the benefits of an Option 3 project, both associated Option 2 projects must be procured from the same vendor. The most economical way to achieve this is to procure the Option 2 projects competitively in one combined tender to avoid such compatibility issues.

3.2.6 Overview of Project Benefits

Boardwalk Power Option 3.1 proposed by Anbaric [redacted] The proposed project advances New Jersey's goals towards achieving a robust, reliable, and resilient transmission grid by allowing an alternate path for the power to be routed between the offshore wind generation resources, thereby providing reliability benefits, market efficiency benefits, and public policy benefits. [redacted]

[redacted]

[redacted]

A more detailed description of the benefits of the proposed project is presented in the following Section of this document.

3.2.7 Overview of Major Risks and Strategies to Limit Risks

Uncertainties or risks that may cause delays in Project benefits, Project timeline, or increases to Project budget, include but are not limited to the list below. Strategies to limit the risks and their impacts to New Jersey customers are also included:

- **Bureau of Ocean Energy Management (BOEM) ROW/ROW**: Anbaric has not applied for the BOEM ROW/RUE Grant or Easement for this Project. To mitigate risks to schedule delays, Anbaric's fundamental Project permitting strategy is to initiate the federal regulatory permitting review processes early and continue to take a holistic and integrated approach to the combined agency and stakeholder review processes.
- **Stakeholder Engagement with the Project:** Anbaric has developed an effective stakeholder engagement plan aimed at fostering support for the economic, environmental, and social benefits of the Project.
- **Construction Delays:** Anbaric is mitigating these risks by employing proper techniques for each risk situation, for example:
  - Anbaric has conducted a preliminary GIS-based desktop study to ensure the cable route avoids obstructions, complex seabed soil types, and follows suitable bathymetry. The study also involved aligning with other offshore space users such as navigational channels, fisheries, and sand borrow areas.
  - Anbaric will conduct a benthic community assessment survey along the offshore cable route to check for the presence of rare species.
  - Anbaric will conduct geophysical and geotechnical studies along the Project offshore transmission route to inform the cable layout design, including identifying areas of potential sediment transport (i.e., sandwaves or megaripples) to avoid.
- **Construction delays due to federal regulations and restrictions**: Anbaric incorporates margins in the schedule to account for restrictions on vessel speed to reduce collision risk to the federally endangered North Atlantic right whale.
- **Project interruptions due to planned construction-related outages on existing PJM transmission facilities:** Anbaric has incorporated margins into the Project schedule and, upon selection, will enter into Interconnection Service Agreements (ISAs) and Interconnection Service Construction Agreements (ISCAs) with PJM and the respective Transmission Operators (TOs) to address schedules and contractual agreements for the interconnection process.
- **Supply Chain:** Anbaric has been working closely with cable OEMs, assessing technology readiness levels (TRLs) of their products, and allowing adequate time in the schedule for contracting cable supply and related components.

Uncertainties or risks that may reduce or delay the anticipated benefits to New Jersey customers as well as mitigation measures developed to offset the potential risks include but are not limited to:

- **Emission Estimates (SO2, NOx, Carbon)**: Anbaric employs careful modeling to assess the amount of renewable energy expected along with the corresponding emissions reductions in order to develop accurate estimates.
- **Schedule delays could postpone the benefit to NJ customers of reduced emissions (SO2, NOx, Carbon) due to the project**: As listed above, Anbaric employs multiple strategies including careful planning as well as adding margins to the schedule to account for unforeseen interruptions, in order to avoid schedule delays.
- **Incomplete implementation of a wind integration Pathway may reduce anticipated energy market, capacity market, and public policy benefits:** Anbaric has developed multiple Pathways to integrate 7,500+ MW of offshore wind onto the PJM grid, providing tremendous flexibility to maximize specified benefits to NJ customers.

Project-on-project risks that may exist between this project and other transmission or offshore wind projects, as well as potential opportunities presented, include but are not limited to:

- **Project on Project:** Anbaric defines project-on-project risk as the risk of decoupling transmission from offshore wind generation. By planning an offshore transmission grid for 7,500+ MW to which nearby projects can connect, Anbaric increases the likelihood of timely delivery of transmission that will be more cost-efficient for NJ ratepayers, and reduces overall environmental impact. [redacted]

Additional information on risks associated with the Project and their accompanying mitigation measures can be found in Section 6, Project Risks and Mitigation Strategy.

3.2.8 Overview of Project Costs, Cost Containment Provisions, and Cost Recovery Proposals

3.2.8.1 Overview of Project Capital Expenditure

The Project cost for Boardwalk Power Option 3.1 (in current year, 2021) is estimated at $80,950, 097 which covers the activities listed in Table 3-7.

Table 3-7 Summary of Project Capital Expenditures

Project Management	Design and Engineering	Procurement, manufacturing, and fabrication	Transport & installation	Construction and construction management

Commissioning and testing	**Permitting / routing / siting**	**ROW / Land acquisition**	**Overhead & miscellaneous costs**	**Contingency**

Further details of cost estimate assumptions and breakdown is provided in Section 5.

3.2.8.2 Overview of Cost Containment and Cost Recovery

Anbaric supports the BPU's objective of minimizing costs to ratepayers and aligning incentives between ratepayers and project sponsors. Anbaric has made this a priority in developing our proposal. Anbaric is demonstrating this commitment with a mix of cost containment measures and incentives: (a) a cap on construction costs; (b) a competitive and compelling ROE with a waiver of all available ROE adders; (c) a declining ROE for costs above our bid price; (d) an incentive to drive costs below our bid price through sharing cost savings between the ratepayers and the Designated Entity; (e) a cap on equity at 45% of the capital structure; and (f) a commitment to schedule guarantees. These measures are outlined further below and in section 6.10:

- **Phased and coordinated development.** Anbaric's plan to develop Option 3 projects after Option 2 projects are constructed ensure cost benefits will be captured. Building on lessons learned, while ensuring availability of a cable laying vessel, will ensure Option 3.1 installation is efficient.
- **Cap on Construction Costs.** Anbaric, the Designated Entity, agrees that it will not seek recovery through its Annual Transmission Revenue Requirement of any Construction Costs in excess of an amount equal to the Construction Cost Cap Amount, which for Anbaric's Boardwalk Power Option 3.1 is 130% of Indexed Bid Construction Costs based on the amounts set forth in Section 5.1.
- **Competitive Return on Equity.** The Designated Entity commits to file with FERC for an 8.5% ROE, subject only to the two adjustments described immediately below plus any adjustment due to Schedule Delays, and agrees to waive all customary FERC transmission incentives. The ROE shall apply to the initial investment of the Construction Costs for the life of the project, and Anbaric agrees not to seek a higher ROE pursuant to its rights under Section 205 of the Federal Power Act.
  - **Reduction in ROE for Costs Above Project Bid Estimates.** For Construction Costs that exceed the Indexed Bid Construction Costs up to the Construction Cost Cap Amount, the Designated Entity shall recover a reduced ROE of 5.75%. For Construction Costs that exceed the Construction Cost Cap Amount, the Designated Entity shall not recover any Construction Costs nor shall it earn any ROE on such amounts.
  - **ROE Incentive to Actual Project Costs Less Than Project Bid.** If the actual Construction Costs are less than the Indexed Bid Construction Costs, the Designated Entity shall be entitled to a 50 basis point adder to the project ROE for each 10%, or portion thereof, that Construction Costs are below the Indexed Bid Construction

Costs. For example, if Construction Costs are 5% below the Indexed Bid Construction Costs, the ROE will be adjusted from 8.5% to 8.75% (8.5% plus 0.50% x (5%/10%)).

- **Capped Equity Structure.** The Designated Entity commits to an actual equity content of no greater than 45%. The Designated Entity shall be granted relief from this commitment if the capital market conditions do not remain normal and the Designated Entity does not have the ability to finance the Project with the proposed capital structure.
- **Schedule Delays**: The Designated Entity commits to a reduction in the Project ROE if the Project does not achieve Commercial Operation by the Target Project In-Service Date, as such date may be extended for Extension Events. For each month of delay after 6 months, the Designated Entity will reduce the applied for ROE by 2.5 bp per month of delay. The reduction in ROE will apply for up to an 18-month delay resulting in a maximum reduction of up to 30bp in ROE.
- **Liquidated Damages**. Anbaric intends to negotiate damages payments with its construction contractors to compensate for delays in project delivery. In the event that the Project is delayed and Anbaric collects these payments it pledges to pass this value on to NJ ratepayers.

4 Project Benefits

4.1 Reliability Benefits

Reliability is a critical component of the operation and maintenance of the transmission system. Therefore, HVDC voltage source converter (HVDC-VSC) (modular multilevel with half-bridge submodule architecture) cables have been proposed to interconnect the OWFs to each other in addition to the connection to the onshore transmission grid. Ongoing research has shown many benefits associated with this type of HVDC cables.

- **Black-start:** With voltage source converters, the HVDC-VSC can initiate the black-start process, thereby allowing the connected OWF to be used as black-start generators (requires OWF with suitable control functionality).
- **Reduced probability of common mode outages:** Part of the design of the Boardwalk Power Option 3.1 solution is such that each of the HVDC links connecting the OWF to the specific POIs will have its own separate trench/ROW. This will help prevent the probability of common mode outages due to electrical or non-electrical causes.
- **Redundancy:** The interlink can provide an alternate route in the event of an outage on the main HVDC export links. In the absence of a switchable interlink, OSW capacity associated with the affected site will be islanded under gen-tie outage conditions. Hence, the interlinks provide increased transmission availability to the OWFs resulting in reduction of EENT and ultimately more access to low-cost clean energy for NJ ratepayers.
- **Must-run generation:** The ability of the Boardwalk Power Option 3.1 solution to provide alternative outlets for the OWF coupled with the ability of the HVDC-VSC to reduce losses will help minimize the amount of power needed from inefficient, uneconomical must-run generators.

- **Special operating procedures:** The listed benefits/capabilities of the HVDC-VSC technology may reduce the need to implement certain special operating procedures that would have been needed to achieve the reliability benefits to the transmission system.

Table 4-1 Measures to Reduce Likelihood of Cable Outages

Cable outage situations	Measure to Reduce the Likelihood of Failures
Failures due to internal reasons	Thorough QA/QC of the cable specification, design, qualification, production, transport, and installation will be implemented in accordance with applicable standards and industry best practice to ensure the highest possible quality cable and thereby reduce the probability of internal failures. Independent 3rd party technical specialists with a proven track-record in submarine HVDC cable systems will be included in the project team to guarantee the submarine cable and its integration into the system is a key focus.
	The operation of the cable will be monitored using integrated temperature measurement systems to ensure the cable conductor temperature does not exceed the maximum operating temperature to guarantee the cable's technical lifetime.
Failures due to external reasons	To reduce the probability of failures due to external causes such as installation equipment, anchor drags or fishing equipment, a robust cable burial risk assessment will be performed to assess a suitable cable burial depth on the basis of geophysical survey data, historic data of local vessel movement and anchor penetration characteristics. Only proven and qualified cable burial techniques will be applied.
	Since the cable will be buried along the entire cable route, it is naturally protected from the majority of climate events. The cable burial depth will be chosen to be sufficiently deep to ensure the cable will not become exposed during excessive seabed or coastal erosion as a result of extreme weather events.
	Periodic inspections to assess the cable burial depth will be carried out to detect cable exposure.
Reducing the downtime	A submarine cable repair service contract & spare parts management will be implemented to guarantee the rapid availability of suitable cable repair vessel, qualified technicians, and qualified spare parts in case a failure has occurred.
Reducing the impact of a failure	The interlink will reduce the impact of a failure by connecting into a multi-terminal configuration which enables the rerouting of offshore wind power via a redundant link during a cable outage.

4.2 Public Policy Benefits

[redacted]

The public policy benefits from this Option 3.1 include reduced transmission losses, savings to the New Jersey rate payer, decreased onshore congestion, reduced emissions of carbon and pollutants, increased competition among offshore wind generators, and the benefits that flow from developing an offshore grid.

The Option 3.1 interlink provides PJM with the operational flexibility to better manage power flows. If the interlink circuit is left open, the export links to shore will operate as radial connections from the offshore wind farms to the onshore POIs. If the interlinks are closed at one end, they improve the availability of the OWF at the other end in case its radial export link is out of service. The interlink circuit can also be closed at both ends, which gives PJM the flexibility to shift power flows toward one POI or the other, depending on the needs and economics of the onshore grid. To do this, in order to not exceed the maximum single loss of infeed criteria of the PJM grid, the combined output from the offshore wind farms must be limited to less than 1500 MW. However, as DC circuit breakers become technically and commercially available, the interlinked system will no longer face this limitation. Designing the system now with the interlinks will prepare the offshore grid for these technology advances, providing long term value to NJ's ratepayers.

[redacted]

The reduction in air emissions made possible by integrating wind energy into the grid and by the state's plan to transition to zero-emission passenger, and medium- and heavy-duty vehicles is expected to provide direct and indirect health benefits, saving millions of dollars in health costs related to air pollution. Importantly, the health benefits will apply more directly to overburdened communities and other New Jersey residents who are currently disproportionately burdened by air pollution.

Public policy benefits provided by the project include a reduction in carbon, SO_2, and NO_X emissions by virtue of increased availability obtained from the installation of the platform interlinks. The reductions in emissions are calculated based on the increased OSW energy delivered to the PJM grid due to the reduction in the EENT values. Boardwalk Power Option 3.1 reduces the total annual EENT by 123 GWh to 154 GWh, thus providing the following benefits:

- SO_2 emissions reduction estimated at 26 – 33 tons/year
- NO_x emissions reduction estimated at 22 – 28 tons/year
- CO_2 emissions reduction estimated at 48,700 – 60,900 tons/year

Emissions reductions could be achieved by an increased amount of energy delivered to the PJM grid by virtue of reduced OSW curtailments or reduced losses in delivering the energy. These benefits, albeit substantial, are not accounted for in the calculations above. Attachment 1 Analysis Report provides a detailed explanation and summary of the emissions benefits for the Pathways consisting of the Boardwalk Power Option 3.1 Project.

The Boardwalk Power Option 3.1 project creates substantial pro-competition benefits. Planned transmission also allows for greater competition among offshore wind generation developers. The buildout of planned transmission allows:

New entrants and early entrants into the U.S. offshore wind generation market to compete on an even playing field by reducing the locational advantages of wind energy areas close to the coastline, by reducing first mover advantages in the offshore generation sector by eliminating the most complex component of offshore wind generation development – the grid interconnection process – via an open access, independent transmission system, and by stimulating competition among offshore wind generators on price and efficiency in their core business, i.e., generation of wind.

Finally, over time, the buildout of offshore transmissions systems with Option 3.1 and other similar or related measures will enable offshore wind generation to compete with other grid resources – e.g., natural gas combined cycle plants – on the basis of energy market economics because, like fossil resources, the generator will not need to supply its own transmission system.

The interlink between OSPs, the core of a coming offshore grid, removes the locational advantages of wind energy areas in proximity to the coast. With a transmission system provided by PJM and the BPU, generators will be evaluated exclusively on the basis of the performance of their generation resources and not on the happenstance of their location.

The transmission system and its components, the interlinks, also reduce the first mover advantages in the offshore generation sector by removing the most complex, difficult-for-newcomers-to-master part of the offshore wind development process, that is the selection of POIs and the steps of connecting to the grid. Offshore wind generators will thus focus on selection of the wind energy lease area and maximizing its output.

These changes are financially significant. In a New England study, The Brattle Group estimated that this transmission competition enabled by a planned transmission system would save 20% - 30%[15].

Moreover, planned transmission increases competition between onshore fossil and offshore wind resources. Studies have shown that cost savings within solicitations that are possible, and real-world examples show the potential for consumer savings of subsidy-free procurement of offshore wind. Recent studies have shown over 50% less cabling[16] with the use of planned transmission vs. radial lines, and the avoidance of billions in onshore upgrades. Recent experience in New England, i.e., the ISO-NE Cluster Study now underway examining injections into Cape Cod has demonstrated that where radial lines are used, the best, least expensive points of interconnection and the ideal routes in the ocean and along the coastline are selected by the earliest OSW projects, resulting in underutilization of scarce assets and substantial congestion as OSW generators seek to connect to the closest location because its costs are the lowest. The queue process only has a limited ability to plan for subsequent interconnection requests until it's clear that a proposed project will in fact be built. ISO-NE has found that the area sought after for OSW interconnections is electrically "full" and over $1 billion in enabling upgrades are needed to move forward on the next offshore wind project [17]. The result is significant upgrades that make the next wind project much more expensive than it could have been and creates the risk of communities opposing or rejecting additional projects due to

[15] https://newengland.anbaric.com/wp-content/uploads/2020/07/Brattle_Group_Offshore_Tranmission_in_New-England_5.13.20-FULL-REPORT.pdf.
[16] http://ny.anbaric.com/wp-content/uploads/2020/08/2020-08-05-New-York-Offshore-Transmission-Final-2.pdf
[17] https://newengland.anbaric.com/wp-content/uploads/2020/07/Brattle_Group_Offshore_Tranmission_in_New-England_5.13.20-FULL-REPORT.pdf

prolonged construction. More threatening is the possibility of early projects simply securing all feasible routes or substations, without utilizing them at full capacity. New York tells a similar story. A maximum of four cable routes are available through the Narrows into Brooklyn, given the required cable separation distances. With HVDC technology, each of these could have transmitted between 1,600 to 2,000 MW or more[1]; but awards have been made for projects utilizing just 400 MW sized circuits. These awards underutilize cable routes at a bottleneck location, and therefore threaten the continued expansion of offshore wind.

This recognition of the need to move to a planned transmission system is seen in Europe. In the United Kingdom, where the country's extensive coastline represents the best-case for laissez faire development of radial transmission, the regulator, Ofgem has moved to a planned transmission network system. The grid operator, National Grid ESO, which functions like PJM in many of the grid operation functions, released a study in 2021[18] showing over 70% fewer assets would be needed from a planned system and resulted in greater reliability and a savings to consumers of over £ 6 billion ($8.3 billion). Importantly, and to the New York Narrow's example mentioned earlier, the National Grid ESO study also found that these savings and asset reduction (and therefore environmental, permitting, and environmental justice) benefits were reduced by 50% if a planned grid was delayed from 2025 to 2030. Every incremental radial project is a missed opportunity to optimize cable size, the onshore grid and do so with significant benefits. The data are clear that the future sought by New Jersey is one enabled in a far superior manner by planned transmission and those same data highlight that the benefits are most pronounced when planned transmission is adopted as soon as possible.

Finally, the public policy benefits of Boardwalk Power Option 3.1 include the benefits of a true offshore grid: reduced curtailments and increased availability of offshore wind, increased flexibility and reliability of the onshore grid, and the accelerated development of the offshore wind industry.

4.3 Market Efficiency Benefits

[redacted]

[redacted]

[18] https://www.nationalgrideso.com/future-energy/projects/offshore-coordination-project

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

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

4.4 Additional New Jersey Benefits

Transmission is arguably the most time consuming and difficult element of offshore wind development, often requiring five to eight or more years to finish due to siting, permitting, and necessary grid upgrades. Planning the transmission system up front ("transmission-first") significantly reduces the risk of the buildout of offshore wind later. The risk mitigation benefits of Anbaric's [redacted] include:

- **Lower cost.** By holistically considering NJ's 2033 offshore wind goal of 7,500 MW and planning a transmission system with all upgrades necessary to deliver this power to the ratepayers, Anbaric's proposed Projects will be more cost-effective for NJ ratepayers than a piecemealed OSW solution.
- **Improved constructability.** Planned transmission and use of HVDC technology results in the need for far fewer cables to be installed. This leads to less ocean trenching, and fewer connections, which minimizes construction and enables a holistic and flexible transmission network that simplifies transmission interconnection for all associated OSW projects.
- **Economic Impact:** Anbaric recognizes the tremendous economic impact potential that exists for the State through the growth and permanence of the Offshore Wind industry. While the transmission component of offshore wind carries with it different impact in terms of job creation and manufacturing needs than the generation aspect of the industry, there is still significant potential for local investment, local presence, and the engagement of local labor. See Attachment 30 Anbaric Community Impact Strategy for more information.

As a small company, Anbaric has the flexibility to build a team of local talent for the projects Anbaric are involved with. Anbaric have a demonstrated track record of doing so through our Hudson and Neptune projects. Through our development work over the past 8 years in New Jersey, Anbaric have engaged local law firms, engineering firms, architects and other NJ based talent. If successful in our bids through the PJM SAA process, Anbaric will expand upon this through engagement with other New Jersey based companies, rather than importing from other states or abroad. In addition, Anbaric plans to open an Anbaric project headquarters in the state if successful.

Anbaric also recognize the need to give back to the community, as well as prepare New Jersey youth for the opportunities that will be presented by the clean energy economy. As such, Anbaric will pledge to invest $5 million over 4 years into numerous state, regional, and local STEM education and workforce development initiatives that will reach communities throughout the State and impact a tremendous number of New Jerseyans as detailed in the impact strategy prepared for Anbaric by CN Communications.

- **Job Creation:** [redacted]

  [redacted]

  [redacted]

  [redacted]

- **Future friendly.** Inspired by the spirit of the current SAA transmission solicitation, Anbaric has designed a future friendly transmission solution that can flexibly and modularly meet the transmission needs above New Jerseys current offshore wind target and beyond New Jerseys state borders in the years to come. The solution has been designed to maximize transmission capacities at least possible cost, within the constraints of the New Jersey onshore grid. This enables higher than currently planned offshore wind farm capacities, and expansion to the 11 GW of offshore wind New Jersey needs[20], at the lowest cost and environmental impact. The

[20] Rocky Mountain Institute Report, New Jersey Integrated Energy Plan, 1 November 2019

offshore substations have been designed with future expansion in mind, enabling the substations to improve the offshore grid's performance and enhance its functionality, or act as steppingstones for future developments of offshore wind farms. Most importantly, Anbaric's solution strongly advocates standardization of the technical characteristics of offshore HVDC infrastructure, to ensure compatibility between different offshore transmission systems and simplify the connections of future offshore grid expansions.

- **Reduced environmental impact.** Comprehensive transmission system planning minimizes disturbance of an area by ensuring that installed infrastructure is sized at the outset to manage all phases of the eventual buildout. This mitigates the risk of returning to disturb an area repeatedly.
- **More efficient permitting.** Approaching federal permitting authorities with a single, comprehensive construction schedule mitigates risks associated with multiple individual construction schedules and increases the likelihood of timely review. For Boardwalk Power Option 3.1, Anbaric will continue to engage with fishing interests and other maritime users to minimize points of contention and ease the permitting process of a constructable platform interlink.
- **Project-on-project benefits.** Separating procurement of transmission from generation increases the likelihood of timely delivery of transmission. A 'transmission-first' approach facilitates transmission interconnection for all associated OSW projects.

The option value of an offshore wind transmission project or system consists of the value that is not realized at present, but can be obtained in the future, depending on changing circumstances. The option value of Anbaric's offshore grid transmission system includes:

- **Standardized, modular design.** To enable any offshore platform and converter station (of a particular voltage and manufacture) to connect to another project of the same voltage and manufacturer link with another project. Studies are underway to define how projects using different manufacturers will be able to connect in the future; as yet there is no such project in operation.[21]
- **Technical adaptability.** The projects Anbaric now proposes will be able to incorporate HVDC circuit breakers in the future to create a true offshore grid, that is an extension of the onshore grid to the offshore context, including, among other features, the virtually instantaneous and automatic re-routing of power in case of a contingency. Deployment of the HVDC circuit breaker technology will be examined when the technology has been tested, deemed ready for use in the offshore industry, and is commercially available.
- **Interlink Capability.** [redacted]
    - [redacted]

[21] See O. DESPOUYS et al., Assessment of interoperability in multi-vendor VSC-HVDC systems: interim results of the BEST PATHS DEMO #2, B4-134 CIGRE 2018.

have been stranded by the failure of a transmission line to the onshore grid via the [redacted]

[redacted]

- **Suitable Project Sizing.** The [redacted] projects allows the complete capacity of existing and future offshore wind areas to be captured, reducing or eliminating underutilized capacity in wind energy areas.

5 Proposal Costs, Cost Containment Provisions, and Cost Recovery

5.1 Project Capital Expenditure

Anbaric secured cost estimations from original equipment manufacturers (OEMs), proprietary database costs from its consultants, and publicly available information to estimate the Project Capital Expenditure (CapEx). The cost for [redacted] 400kV HVDC interlink connecting [redacted] based on the PJM competitive planner tool breakdown, is depicted in Table 5-1. Note, the permitting/routing/siting cost (as provided in Table 5-1) for the Option 3 projects would be absorbed by paired Boardwalk Power Option 2 project costs, if awarded together, as routing and permitting the transmission link and platform interlink will be processed together.

Table 5-1 Estimated Capital Expenditure Details for Option 3.1

Capital expenditure details for Option 3.1	Cost (USD) (2021)
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
Total Project CapEx	**$80,950,097**

5.1.1 Multi-Project Cost-Savings

If more than one project is awarded, there will be cost-saving synergies that Anbaric can capitalize on. For example, vendors have confirmed with Anbaric that if more than one project is awarded, there will be a commercial discount on Engineering, Procurement, Construction (EPC) contracts ranging between [redacted] Considering potential synergies that lead to cost-savings, Anbaric estimates that if a full Pathway is awarded (e.g., at least 3 transmission links [Option 2's] and 3 platform interlinks [Option 3's]), the overall cost-savings for the award of a full Pathway is up to [redacted] as compared to the sum of the individual costs of the projects. Factors contributing the [redacted] cost savings include:

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

5.2 Cost Containment Provisions

Anbaric recognizes the importance for any transmission system to provide the greatest net benefits to New Jersey's ratepayers, and commends the NJBPU for its decision to plan the infrastructure necessary to transition to a renewables-based economy, buoyed by offshore wind. The current interconnection process which considers each new resource incrementally and narrowly focusses on the system upgrades necessary only to accommodate each individual project in a serial manner is not an efficient or effective way to transform the state's generation mix from fossil fuels to renewable power. Europe is more than 20 years ahead of the US in its efforts to develop offshore wind resources, and countries like Germany, Belgium, and the Netherlands are far ahead in planning the grid specifically to accommodate these new resources.

While Europe has shown the effectiveness of transmission planning and early development in scaling this new industry, New Jersey is wisely introducing competition to the planning process. Competition will drive down costs, give the NJBPU an array of projects to select among to serve ratepayers' needs most cost-effectively, and will give the NJBPU a broad range of cost structures and mechanisms to protect ratepayers from cost overruns. Anbaric recognizes that the public will only support these investments in infrastructure if it is affordable.

Anbaric supports the BPU's objective of minimizing costs to ratepayers and aligning incentives between ratepayers and project sponsors. Anbaric has made this a priority in developing our proposal. Anbaric is demonstrating this commitment with a mix of cost containment measures and incentives: (a) a cap on construction costs; (b) a competitive and compelling ROE with a waiver of all available ROE adders; (c) a declining ROE for costs above our bid price; (d) an incentive to drive costs below our bid price through sharing cost savings between the ratepayers and the Designated Entity; (e) a cap on equity at 45% of the capital structure; and (f) a commitment to schedule guarantees. These measures are outlined further below and in section 6.10:

- **Phased and coordinated development.** Anbaric's plan to develop Option 3 projects after Option 2 projects are constructed ensure cost benefits will be captured. Building on lessons learned, while ensuring availability of a cable laying vessel, will ensure Option 3.1 installation is efficient.
- **Cap on Construction Costs.** Anbaric, the Designated Entity, agrees that it will not seek recovery through its Annual Transmission Revenue Requirement of any Construction Costs in excess of an amount equal to the Construction Cost Cap Amount, which for Anbaric's Boardwalk Power Option 3.1 is 130% of Indexed Bid Construction Costs based on the amounts set forth in Table 5.15.1.
- **Competitive Return on Equity.** The Designated Entity commits to file with FERC for an 8.5% ROE, subject only to the two adjustments described immediately below plus any adjustment due to Schedule Delays, and agrees to waive all customary FERC transmission incentives. The ROE shall apply to the initial investment of the Construction Costs for the life of the project, and Anbaric agrees not to seek a higher ROE pursuant to its rights under Section 205 of the Federal Power Act.
  - **Reduction in ROE for Costs Above Project Bid Estimates.** For Construction Costs that exceed the Indexed Bid Construction Costs up to the Construction Cost Cap Amount, the Designated Entity shall recover a reduced ROE of 5.75%. For Construction Costs that exceed the Construction Cost Cap Amount, the Designated Entity shall not recover any Construction Costs nor shall it earn any ROE on such amounts.
  - **ROE Incentive to Actual Project Costs Less Than Project Bid.** If the actual Construction Costs are less than the Indexed Bid Construction Costs, the Designated Entity shall be entitled to a 50 basis point adder to the project ROE for each 10%, or portion thereof, that Construction Costs are below the Indexed Bid Construction Costs. For example, if Construction Costs are 5% below the Indexed Bid Construction Costs, the ROE will be adjusted from 8.5% to 8.75% (8.5% plus 0.50% x (5%/10%)).
- **Capped Equity Structure.** The Designated Entity commits to an actual equity content of no greater than 45%. The Designated Entity shall be granted relief from this commitment if the capital market conditions do not remain normal and the Designated Entity does not have the ability to finance the Project with the proposed capital structure.
- **Schedule Delays:** The Designated Entity commits to a reduction in the Project ROE if the Project does not achieve Commercial Operation by the Target Project In-Service

Date, as such date may be extended for Extension Events. For each month of delay after 6 months, the Designated Entity will reduce the applied for ROE by 2.5 bp per month of delay. The reduction in ROE will apply for up to an 18-month delay resulting in a maximum reduction of up to 30bp in ROE.

- **Liquidated Damages.** Anbaric intends to negotiate damages payments with its construction contractors to compensate for delays in project delivery. In the event that the Project is delayed and Anbaric collects these payments it pledges to pass this value on to NJ ratepayers.

Please refer to Appendix A attached to this document, the proposed *Schedule E to the Designated Entity Agreement*, attached to this document, for a more fulsome description of the cost containment measures and proposed contractual language to be inserted in the Designated Entity Agreement (including definitions for the terms capitalized above). Section 6.10 also provides further discussion and proposed contractual language for Schedule Delays and Liquidated Damages.

5.3 Cost Recovery

The following Section presents cost recovery information in a question-and-answer format to provide the NJBPU and PJM with a clear description of all necessary information. All requested information is in ***bold italic*** font.

1. ***Standard Regulated Cost Recovery: If developers are requesting cost recovery via a standard revenue requirement, please submit projected project and financing cost information and any proposed cost-cap mechanisms via the PJM submission forms. Indicate below that standard regulated cost recovery will be requested.***

   Proposers should include the following information via the PJM Competitive Planner submission tool when submitting projected project and financing cost information, any proposed cost-cap mechanisms, and whether values are estimated or firm commitments.

   Please provide the following:

   A. O&M, G&A Costs

      a. Cost estimates for Operations, Maintenance, and G&A FERC US of A 560-570 series, 920 series.

[redacted]

- [redacted]

- [redacted]

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

b. O&M Escalation Rates

[redacted]

c. Clarification if O&M, G&A Expenses Are Covered in Cost Containment

O&M and G&A are not covered in our cost containment proposals.

B. Capital Structure

a. Debt-to-Equity Ratio

During construction, Anbaric will file with FERC for a deemed capital structure of no more than 45% equity. As discussed in Section 5.2 "Cost Containment" during operations Anbaric commits to a capital structure of no more than 45% equity.

b. Cost of Debt

[redacted]

C. Depreciation

a. Book Life by Asset Class

Anbaric has assumed a [redacted] for this submarine cable.

b. Tax Depreciation Method e.g., 5-year MACRS, Half-year Convention

[redacted]

c. Book and Tax Depreciation Schedule for CapEx and On-going CapEx

[redacted]

D. Taxes

a. Federal and State Income Tax Rates

Federal and NJ state income tax rates are assumed to be 21% and 9%, respectively.

b. Description of Blended Income Tax Rate Calculations, if any

The following formula is used to blend the federal and state tax rates: federal rate + (1- federal rate) * state rate, because of the deductibility of state income tax for purposes of determining federal taxable income.

c. Property Tax Rate

As this project will be entirely located in federal waters of the outer continental shelf, Anbaric assumes it will not be subject to property taxes.

d. Deferred Income Tax Schedule, If Appropriate

[redacted]

E. Discount Rate

[redacted]

F. Revenue Requirement

a. Estimated annual revenue requirement for each proposed solution from commercial operation through the book life of the plant.

Please see row 39 of the attached revenue requirement workbook.

b. Provide revenue requirement build-up workbook, including depreciation, cost of debt, return on equity, federal and state income tax, property tax, and other costs e.g., O&M, A&G, other income tax.

Please see Attachment 12 Option 3.1 Revenue Requirement Buildup Workbook.

G. Incentive Adders

a. Describe any incentive adders and what it applies to

As stated in Section 5.2 Anbaric will not seek any customary FERC transmission incentive adders and would only receive a higher ROE if actual Construction Costs are below the Indexed Bid Construction Costs.

H. Exceptions to Cost Cap

Please see Appendix A, “Non-Standard Terms and Conditions, Schedule E to the Designated Entity Agreement” for the terms and conditions of Anbaric’s proposed costs caps, including exceptions thereto.

5.4 Cost Estimate Classification and Accuracy

[redacted]

[redacted]

5.5 Estimation of Annual Transmission Losses

[redacted]

[redacted]

[redacted]

BOARDWALK POWER LINK

5.6 Physical and Economic Life of the Project

[redacted]

Maintaining assets for [redacted] will entail periodic maintenance and capital upgrades above and beyond general O&M activities.

In many HVDC projects, after [redacted] design lifetime has expired, extensions of lifetime can be realized through refurbishments based on the outcomes of an adequate assessment of remaining lifetime.

It should be noted that the offshore transmission infrastructure has a longer expected operational life than the typical offshore wind farm operational life of about [redacted] The benefit in separating transmission asset ownership from offshore wind farm ownership is that the transmission infrastructure can be used to connect the next windfarm after the first one has reached end-of-life, improving the utilization of the transmission equipment life and thus return on investment.

6 Project Risks and Mitigation Strategy

This Section addresses the potential risks of the Boardwalk Power Option 3.1 Project and Anbaric's plans to mitigate each risk. Anbaric maintains a project Risk Register where each risk or opportunity is logged and qualitatively assessed to establish the initial level of risk. A mitigation plan is developed according to results of the risk assessment. Post-mitigation risk levels are assessed to establish the consequent reduction in risk anticipated once mitigations are implemented. Actively managing all Project risks in this way optimizes schedule, cost, and/or other impacts (benefits) throughout Project development.

6.1 Site Control

Site control is not applicable to Boardwalk Power Option 3.1 as the Project is located entirely offshore. This section also addresses the status of permitting along the offshore cable route for the Project. The Boardwalk Power Option 3.1 offshore route is not yet permitted. Anbaric will use best management practices to apply for and secure permitting for the proposed offshore route.

6.2 BOEM Right of Way and Right of Use Easements

The Boardwalk Power Option 3.1 Project requires issuance of a Right-of-Way/Right of Use Easement (ROW/RUE) or Grant from the United States Bureau of Ocean Energy Management (BOEM) for the submarine transmission link. It is anticipated that the Project will require a BOEM Environmental Assessment (EA) review and the issuance of an expected NEPA Finding of No Significant Impact (FONSI). In addition, since the Project involves the placement of structures (cables) in the seabed of the OCS, the USACE would have regulatory review and permitting jurisdiction under Section 10 of the Rivers and Harbors Act. This will be confirmed through the BOEM ROW/RUE Grant review process.

To mitigate the risk of delays, increased costs, or cancellation, Anbaric has conducted preliminary siting and routing assessments to identify potential environmental constraints, use conflicts, and cultural constraints associated with the Project facilities, and will further refine and verify the location of the proposed facilities through additional site assessment and field surveys, including geophysical, geotechnical, and benthic surveys and marine archaeology assessments. In addition, Anbaric has been and will continue to follow best management practices to achieve the needed ROW/ROE.

With these mitigation measures in place, Anbaric has assessed the overall post-mitigation risk of not achieving ROW approval as low.

6.3 Stakeholder Engagement

Anbaric will continue to operate under the philosophy that early, collaborative, and clear stakeholder engagement is essential for the successful development of any project. Offshore development in any form is often met with opposition from those potentially being impacted. Recognizing this, Anbaric has worked for years in New Jersey, distinct from any particular project under development, to understand the State, communities within, and interested parties and stakeholders statewide.

Given Anbaric's years of experience as a developer in New Jersey, Anbaric has an ongoing stakeholder engagement strategy for the Project to identify and communicate with stakeholders. Anbaric has consulted with the fishing industry, organized labor, environmental groups, state legislators, chambers of commerce, trade associations, regional science organizations, mariners and numerous other groups. These engagements will continue throughout the lifetime of the Project. A summary list of stakeholders Anbaric has already identified and communicated with is presented in Attachment 5 Stakeholder Engagement. By continuous and early stakeholder engagement, the Anbaric team has an opportunity to alleviate opposition risk which could result in a reduction of potential delays, lawsuits, or additional studies.

6.4 Construction Techniques

Concerning the specific geologic constraints or preexisting infrastructure, Anbaric will identify and document any special construction techniques necessary to mitigate risky conditions or circumstances where construction will occur along the transmission link route. These geologic constraints or preexisting infrastructure include, but are not limited to areas containing benthic substrate, existing cables, pipeline or other infrastructure, seafloor spans with sandwaves or megaripples, zones of contaminated sediment, or onshore waterbody crossings. Potential construction techniques to avoid geologic constraints or preexisting infrastructure can include long horizontal directional drilling (HDD) spans and dredging. Anbaric's approach to mitigating each specific risk is summarized in the following paragraphs.

6.4.1 Benthic Substrate

The submarine transmission link is expected to be buried beneath benthic substrate at an average depth between 4 ft (1.2 m) and 14 ft (4.3 m) below the authorized channel depth whenever the transmission link crosses a navigational shipping channel. Final burial depth is to be determined upon United States Army Corps of Engineers (USACE) consultation. The final burial depths may be increased (or decreased) based on the outcomes of a cable burial depth assessment. Regarding the burial methodology for the circuits, different burial methods can be used depending on the seabed characteristics. The most common method, and the method that will be used for the majority of the route, is direct burial of the circuits during the creation of the trenches. Trenching can be performed by a mechanical jetting plow and the burial can be performed using a water jetting system, which fluidizes the seabed using a combination of high-flow low-pressure and low-flow high-pressure water jets to allow the cable to sink to the target depth using its weight. In the case of the deeper burial depth of 14 ft (4.3 m), more specialized plows with vertical injectors or a jetting system with longer burial sleds will be used.

To mitigate risk of encountering hard benthic substrate that may prevent this equipment from creating the necessary trench, geophysical and geotechnical surveys will be conducted along the marine transmission link route after the bid is awarded to delineate and characterize benthic substrate within the corridor. No hard substrate types were identified in desktop routing analysis along the offshore route, refer to Attachment 3 Constraints Map. If benthic substrate types that prevent the installation of the transmission link (i.e., hardbottom, rocky seabed) are identified along the transmission link route, the transmission link will likely need to be rerouted. If the transmission link cannot be re-routed, appropriate equipment will be utilized.

Anbaric will also complete a benthic community assessment survey along the offshore transmission link route, if deemed necessary, to mitigate risk of encountering sensitive species or habitats.

6.4.2 Horizontal Directional Drilling

Horizontal Directional Drilling is not expected to be utilized for any Boardwalk Power Option 3.1 construction; thus, no risks related to project delays or cost overruns exist.

6.4.3 Existing infrastructure

Where the Boardwalk Power Option 3.1 platform interlink could cross existing infrastructure such as existing cables, pipelines, or other infrastructure, there is associated risk that any offshore construction would face, and Anbaric has identified mitigation steps below.

To mitigate risk, Anbaric follows best management practices and when the bid is awarded will commission a high-resolution Geophysical (HRG) survey of the Boardwalk Power Option 3.1 transmission interlink route prior to cable laying to identify and document all existing cables, pipelines, and other offshore infrastructure, as well as geophysical conditions on the seabed. A follow-up geotechnical sampling program will also be carried out, along the same route segment, to support the Project, employing vibracore sampling and sediment testing (physical, chemical, and thermal conductivity) at select locations along the proposed route. With this information, wherever possible, Anbaric will design the transmission link layout to avoid crossings. Where crossings are unavoidable, Anbaric will cooperate with relevant agencies and infrastructure owners to develop a crossing agreement detailing measures that will be adopted to avoid damage to both existing cables, pipelines, or infrastructure, and new cables.

At each utility crossing, rock armor, concrete mattresses, or a protective sleeve will be installed to ensure minimum separation at the crossing point, protect the existing utility during construction, and protect the transmission link post-construction. The protection design for each crossing will be developed in accordance with crossing agreements and site conditions. Final protection designs for each submarine utility crossing will be provided. Operations and activities may be visually monitored by remotely operated vehicles (ROV) to confirm correct placement and configuration of the supports in accordance with the accepted design. The final route has been designed with minimizing interference with existing infrastructure.

6.4.4 Sandwaves and/or Megaripples

Seabed mobility, or sediment transport, which can develop transient sandwaves or megaripples, or result in erosion and scour, poses the risk of exposing or shifting buried cables associated with the Project. With any offshore cable project, cable exposure or changes in volume of protective sediment above buried cables can result in damage to cables from fishing gear, fishing activities, or vessels anchoring. The presence of sandwaves may also hinder initial cable burial and limit the achievable burial depth, and Anbaric details the below mitigation activities to address such risks.

To mitigate the risk posed by seabed mobility, Anbaric will commission a ground model describing the geological conditions (geological history and tectonic setting, ground topography/bathymetry, lithology and morphology, sediment mobility and other properties) as well as seismicity. This desktop study will provide recommendations for geophysical and geotechnical surveys that will be carried out, which in turn provide the necessary data for a detailed cable system design. The risk of cable exposure as a result of mobile surface sediments can be further mitigated by establishing a Reference Seabed Level (RSBL), which determines the non-mobile level below which the seabed will not fall within the lifetime of the transmission link, and Maximum Seabed Level (MSBL) the highest possible seabed level during the lifetime of the OWFs. Additional mitigations may include, but are not limited to, routing away from significant bathymetric features, excavating or dredging significant mobile features, and/or adapting the burial depth.

6.4.5 Contaminated Sediment

During construction it is possible that contaminated sediments may be encountered. Mitigating for disturbance of contaminated sediment caused by the cable burial operation will reduce impacts to the surrounding environment by avoiding contamination and subsequent cleanup activities, reducing overall cost. In the event that contaminated sediment is encountered, Anbaric is committed to devoting the necessary funds to mitigate for any potential impacts and does not expect that potential impacts would result in Project delays.

To minimize this risk, Anbaric has conducted a desktop analysis to identify pre-existing contaminated sediment areas and routed the transmission link around these areas. Areas with a high potential for contaminated sediment will be avoided, where practicable. In addition, a sediment/soil survey may be conducted to sample sediment along the transmission route where construction will occur to identify any areas that may include zones of contaminated sediment. The transmission link route may be adjusted to avoid any areas with identified contaminants, as warranted. Anbaric will identify specific measures and use best management practices to reduce risk associated with contaminated sediments, as required.

6.4.6 Dredging

Dredging is not expected to be utilized for Option 3.1; thus, no risks related to project delays or cost overruns exist.

6.4.7 Waterbody Crossings

Onshore waterbody crossings are not applicable to Boardwalk Power Option 3.1 as the Project is located entirely offshore.

6.5 Construction Related Outages

As a result of planned construction-related outages on existing PJM transmission facilities, the Project has factored in margins in the Project Schedule to account for such scenarios.

To mitigate this risk further, Anbaric will coordinate with PJM in identifying the relevant planned outages as listed on the PJM - Project Status & Cost Allocation website[22], where a table provides project status and cost allocation information for baseline, network and supplemental projects in PJM's Regional Transmission Expansion Plan (RTEP)[23], and uses this information to incorporate expected duration of planned outages that could impact construction of the Project into the Project schedule, with margin. Additionally, upon selection Anbaric will initiate the interconnection process and upon completion, will enter into ISAs and ISCAs with PJM and the respective TO's to address schedules and contractual agreements for the interconnection process.

6.6 Time of Year Restrictions

There may be temporal restrictions on construction activities during sensitive periods for protected species. For example, it is possible that time of year restrictions for certain activities (e.g., trenching) may be required to reduce impacts to vulnerable life stages and spawning periods of fish, crustaceans, and molluscs that could be present in the area.

To reduce collision risk to the federally endangered North Atlantic right whale (*Eubalaena glacialis*), the National Oceanic and Atmospheric Association (NOAA) requires all vessels 65 feet (19.8 meters) or longer to travel 10 knots or less in designated North Atlantic right whale Seasonal Management Areas (SMAs) in the Mid-Atlantic between 1 November to 30 April. [redacted].

To mitigate this risk, Anbaric will identify known or potential time of year restrictions on construction activity, particularly related to listed species and incorporate the expected delays, with margin, into the Project schedule. It is expected that consultation with state and federal agencies and local

[22] https://www.pjm.com/planning/project-construction
[23] https://learn.pjm.com/three-priorities/planning-for-the-future/rtep.aspx

stakeholders will be conducted to identify specific time of year restrictions with respect to the expected construction schedule along various segments of the transmission link route.

6.7 Wetlands

There are no anticipated impacts to wetland resources as Boardwalk Option 3.1 proposed work is associated with installation of offshore submerged cables.

6.8 Supply Chain and Material Procurement

As a result of potential supply chain constraints or material procurement risks, there is a threat that Project components such as transmission cables, installation vessels, and/or staging areas and ports may not be available for delivery, shipping, storage, and installation according to Anbaric's schedule, resulting in project delays, procurement cost increases, and/or required project design revisions. In particular, the ability to deliver HVDC cable – GIS connection assemblies is limited to a handful of vendors, which is often linked to the converter station vendor selection. Vendor selection is a factor in supply chain management.

[redacted].

To mitigate the risk of constrained vessel availability (especially of cable laying vessels), Anbaric plans to book special-purpose vessels early to ensure timely installation to avoid construction delays.

6.9 Project on Project Risks

Some in the offshore wind industry have identified project-on-project risk, specifically the risk of procuring the transmission systems for offshore wind separately from the wind power generation projects, as having the potential to significantly increase the risk of delay of one or the other.

Here, in the context of adding interlinks between two or more OSPs, project on project risk is exceedingly low. The design of the interlinks will be coordinated with the design of the OSPs themselves – there is no other way – and the interlinks will be installed at the appropriate time during the installation and construction of the OSPs and the topside systems. The necessary siting and permitting will be coordinated with the necessary siting and permitting for the OSPs and the interlinks and OSPs will be developed as complementary parts of a unitary system.

6.10 Project Guarantees

Anbaric recognizes the importance of delivering the Project on time and on budget. Anbaric is confident that the proposed construction schedules outlined herein are deliverable based on the extensive development work and investment made to date in the Project. As such the Designated Entity is prepared to make multiple commitments in support of the schedule and cost objectives outlined by PJM and NJBPU. The cost containment incentives and guarantees are described in detail in Section 5.2 and summarized below in section 6.10.1.

Anbaric is also proposing a schedule guarantee whereby Anbaric will reduce the Project ROE to be applied for with FERC by up to 30bps due to schedule delays. These proposed delay penalties would be in addition to any cost overrun penalties described in Section 5.2 should a cost overrun also materialize in a delay scenario. The proposed language to be included in the Designated Entity Agreement is as follows:

a) Schedule Delays: The Designated Entity commits to a reduction in the Project ROE if the Project does not achieve Commercial Operation by the Target Project In-Service Date, as such date may be extended for Extension Events. The reduction in Project ROE will be in accordance with the following table ("Schedule Guarantee"):

Schedule Guarantee	
Months of Delay	Total Reduction in ROE
0 to 6	0.0 basis points
6 to 18	2.5 basis points/month
18 months	30.0 basis points

The Schedule Guarantee is subject to a maximum reduction in the ROE of thirty (30) basis points. The Target Project In-Service Date is subject to extension if the Designated Entity's ability to perform the Scope of Work is delayed due to an Extension Event

"Commercial Operation" means the Project (i) has been completed in accordance with the Scope of Work in Schedules B this Agreement, (ii) meets the criteria outlined in Schedule D of this Agreement and (iii) is under Transmission Provider operational dispatch.

"Extension Events" means (i) any delays resulting from the enactment, adoption, promulgation, issuance, modification, or repeal of any statue, rule, regulation, order or other applicable law or changes in the enforcement, interpretation or application of any statue, rule, regulation, order or other applicable existing law, (ii) any delays associated with any PJM, New Jersey BPU, or siting authority directed additions to or modifications of the Scope of Work, (iii) any delays as a result of a Force Majeure[24], (v) any delays in permitting or

[24] According to the Designated Entity Agreement Section 10.0, "an event of force majeure shall mean any cause beyond the control of the affected Party, including but not restricted to, acts of God, flood, drought,

resulting from injunctive action by a court, (iv) any delays resulting from breach, default, interference, or failure to cooperate by (A) Transmission Provider of its obligations under this Designated Entity Agreement or (B) any Transmission Owner in connection with any interconnection agreements and (v) any delays as a result of a request by Transmission Provider to delay or suspend any activities associated with the Project or delays in the Project due to a delay in the Transmission Provider completing its scope of work.

"Scope of Work" means the approved scope of work for the Project.

"Target Project In-Service Date" means [________].

Additionally, Anbaric intends to negotiate liquidated damage (LD) provisions with its primary contractors for the Project as part of finalizing construction contracts. The LD provisions are expected to include schedule guarantees that will compensate the Project for delays in Project delivery. In the event that the Project is delayed, and the Designated Entity collects these damages, it pledges to pass this value on to NJ ratepayers which will further mitigate risk and cost to the ratepayer.

b) Liquidated Damages: The Designated Entity commits to use commercially reasonable efforts to negotiate delay liquidated damage provisions ("Schedule LDs") with the primary contractor(s) for the Project. To the extent the Project is delayed and the Designated Entity collects Schedule LDs from its contractor(s), the Designated Entity commits to pass through the value of the Schedule LDs received by the Designated Entity.

Please refer Appendix A attached to this document, the proposed Schedule E to the Designated Entity Agreement, for the proposed contractual language to be inserted in the Designated Entity Agreement (including definitions for the terms capitalized above).

6.10.1 Contract Provisions to Address Cost Risk

In Section 5.2, Anbaric described its cost mitigation and cost cap proposals, and now refers the reader to Section 5.2 for a complete description of the Company's approach. Anbaric described the following measures to address cost risk and provide a construction cost guarantee:

- **Cap on Construction Costs.** For Anbaric's Boardwalk Power Option 3.1 is 130% of Indexed Bid Construction Costs based on the values set forth in Section Table 5-1.
- **Competitive Return on Equity.** The Designated Entity commits to file with FERC for an 8.5% ROE, subject only to two adjustments other than the Schedule Delays adjustment: i) a Reduction in ROE for costs greater than the Indexed Bid Construction Costs; and ii)

earthquake, storm, fire, lightening, epidemic, war, riot, civil disturbance or disobedience, labor dispute, labor or material shortage, sabotage, acts of public enemy, explosions, orders, regulations or restrictions imposed by governmental, military, or lawfully established civilian authorities, which in any foregoing cases, by exercise of due diligence, it has been unable to overcome. An event of force majeure does not include: (i) a failure of performance that is due to an affected Party's own negligence or intentional wrongdoing; (ii) any removable or remedial causes (other than settlement of a strike or labor dispute) which an affected Party fails to remove or remedy within a reasonable time; or (iii) economic hardship of an affected Party."

an ROE Incentive if actual Construction Costs are less than Indexed Bid Construction Costs.

- **Capped Equity Structure.** The Designated Entity commits to a capital structure based on equity of no greater than 45%.

6.11 Additional Risks

Offshore transmission cables face the same risks as any other transmission cable project, with the added complexity of working offshore and addressing additional stakeholder concerns. Offshore transmission cable projects typically encounter the following risks:

- Identifying a route that can be permitted, constructed, and obtain community, governmental, and stakeholder support along its full length
- Designing the project with the technology appropriate to its purpose and defining a cost affordable to ratepayers
- Securing financing
- Permitting in federal waters
- Overcoming objections, including potential litigation, from stakeholders to the project, the route, or any impacts

Addressing each of these risks can decrease costs, increase benefits, and/or keep the project on schedule and ultimately benefit the NJ ratepayer. The SAA process undertaken by the NJ BPU and PJM is precisely the path to mitigating these risks and ensuring a cost-efficient outcome for the ratepayers.

Many of the transmission cable risks listed above can be mitigated by a planned 'transmission-first' approach to an offshore wind build out. Planning the transmission system up front de-risks the buildout of offshore wind later.

Comprehensive system planning minimizes disturbance of an area by ensuring installed infrastructure is sized at the outset to manage all phases of the eventual buildout. This approach can save hundreds of millions of dollars in construction costs.

Similarly, approaching federal permitting authorities with a single, comprehensive construction schedule mitigates risks associated with multiple individual construction schedules.

The Option 3.1 Project mitigates risk by providing an offshore interlink that creates redundant transmission capacity when one offshore wind export link is out of service, thereby improving the offshore transmission system availability. Large HVDC circuits are utilized, [redacted] fits in a single trench versus three trenches for three AC cable circuits, resulting in one versus three trenches for [redacted]. This approach allows for significant transmission capability and flexibility in the system.

Additional risks Anbaric has identified include potential restrictions on construction due to right whale activity. To mitigate this risk, Anbaric will follow best management practices by reviewing environmental studies pertinent to the Project area, identifying species most likely to be affected and the associated construction limitations, and building float into the construction schedule to accommodate the restrictions.

6.12 Documentation of Risk Mitigation

The following is a list of studies and surveys prepared to mitigate risks identified above. Similar studies and reports are included for all bid options submitted and are included in Attachment 6 Studies Completed to Mitigate Identified Risks.

- [redacted]

7 Environmental Impacts and Permitting

7.1 Environmental Protection Plan

Anbaric is a steward for the environment and has conducted extensive environmental due diligence studies, identified impacts to the environment, both terrestrial and aquatic species, and cultural resources that may be impacted by the Project. Anbaric has accounted for and identified potential impacts and developed avoidance, minimization, and mitigation measures to protect these sensitive resources to the greatest extent practicable. For detailed information on resources identified, mitigation measures, and recommended approaches to Project design and construction, refer to Attachment 15 Environmental Protection Plan.

Offshore impacts include direct disturbance to the seafloor associated with the installation and burial of the HVDC transmission link. Impacts to sensitive marine resources (e.g., protected flora and fauna, high quality benthic habitat, archaeological resources) are expected to be largely avoided through informed siting of the transmission link corridor. In areas where avoidance is not possible, the Environmental Protection Plan (EPP) outlines various minimization and mitigation measures based on industry best practices. Sound impacts, impacts to water quality, and impacts associated with Project-related vessel traffic will also be minimized and mitigated using a number of best management practices (e.g., adherence to time of year restrictions for marine mammals), which are outlined in the EPP. The EPP also discusses measures to reduce impacts to offshore activities that will be ongoing during Project construction such as commercial shipping and recreational and commercial fishing. Impacts during operations are expected to be minimal in comparison to construction and associated with routine maintenance of infrastructure.

7.2 Environmental Benefits

Anbaric's plan to utilize HVDC technology as opposed to HVAC technology will result in a substantial reduction in impacts. The power capacity of an AC cable is limited compared to HVDC cables, and the AC power capacity reduces as the transmission distance increases. In the case of the New Jersey offshore wind farm capacities, at least three AC cable circuits would be needed, each with their own trench, to transmit energy from one offshore wind farm.

Therefore, the Project's HVDC submarine transmission link installation will result in significantly less or reduced direct temporary and permanent seabed area impacts and associated environmental effects to fisheries, benthic resources or other aquatic resources compared to an equivalent offshore HVAC radial transmission system currently proposed by OSW developers.

As part of its post-construction environmental monitoring plant, Anbaric expects to make direct observations and collect data over three years in the area of the offshore platform interlink to assess biofouling, biodiversity and abundance of marine fisheries and seabed creatures related to more diverse marine habitat conditions. It is expected that these environmental monitoring investigations and reporting will be incorporated by BOEM and state and federal agencies as part of their National Environmental Policy Act (NEPA) and Agency permitting reviews. For more detailed information, refer to Attachment 16 Environmental Benefits.

7.3 Fisheries Protection Plan

A Fisheries Protection Plan (FPP) has been developed for the Project to ensure the appropriate management of potential impacts to commercial and recreational fisheries during Project activities. For more detailed information, refer to Attachment 17 Fisheries Protection Plan. The FPP includes a characterization of commercially and recreationally significant marine communities and fishing vessel activity in the coastal and offshore sections of the Project area to identify potential impacts to these marine communities and the local fishing industry.

Potential impacts to the fishing industry from the Project are analyzed in the FPP by Project phase. During construction and decommissioning, impacts may occur because of increased underwater sounds, increased vessel activity, seafloor disturbance, benthic habitat alteration, direct mortality or injury to fish species, sediment deposition, increased lighting, temporary displacement of fish species and fishing vessels from prime fishing grounds, and accidental spills/contamination. During operations, impacts may occur due to the effects of increased electromagnetic fields (EMFs) from Project transmission link and increased vessel activity during maintenance activities. The potential level of impact through each phase of the Project was assessed from pre-construction through Project close-out.

The FPP includes a comprehensive list of proposed avoidance, minimization, and mitigation measures to reduce the potential impacts identified. These measures are based on the most up-to-date industry guidelines and best practices, including but not limited to those developed by BOEM, NOAA, and the Mid-Atlantic Fishery Management Council. Examples of measures included in the FPP are implanting a fisheries gear loss plan, using ramp-up procedures to reduce impacts from pile driving, and commitments of ongoing collaboration with third-party researchers to collect fisheries data following Project construction and installation.

The FPP will also include a plan to implement informal and formal communications and collaborations with federal and state resources, regulatory agencies, local fisheries groups, and other environmental stakeholders during all phases of Project development to ensure reasonable accommodations are provided to commercial and recreational fishing for safe access to fishing grounds in and near the Project area and to incorporate stakeholder input into the proposed avoidance, minimization, and mitigation measures.

7.4 Stakeholder Identification

Anbaric is a small, majority employee-owned company which designs, develops, and builds projects in the public interest. From Anbaric's two-plus decades of experience focusing on serving the public interest with renewable energy projects, Anbaric identifies stakeholders at the earliest stages of development and continues engagement throughout the development process. Anbaric recognizes early stakeholder engagement as the only way to create successful projects. This process ensures projects have community and stakeholder understanding and support from inception. Anbaric's engagement philosophy seeks stakeholder input early on to invite feedback to create better routes, fewer environmental effects, greater community acceptance, and fewer risks to the development process. Rather than only a project specific approach, Anbaric has worked with stakeholders to develop a sustainable approach to offshore wind transmission. Anbaric is committed to a process that sees stakeholder engagement as a never-ending process, from concept inception, completion of construction, and ongoing operation through the life of a project.

For example, Anbaric implemented an early and proactive engagement approach prior to the SAA solicitation by working with regulators to permit the Boardwalk Power Link. This was made possible through direct outreach efforts with key groups, including appropriate government regulatory agencies, municipal government officials, state legislators, chambers of commerce, trade associations, local community leaders, fishing organizations, environmental groups, regional science organizations, mariners, property owners, residents, and business owners. Anbaric initiated this early engagement to understand stakeholder and agency concerns, in particular the scientific, socio-economic, and environmental issues. Anbaric has reviewed the best available science and appropriate best management practices and has identified several possible solutions to these concerns. See Attachment 15 Environmental Protection Plan for additional information. Discussions with the communities and stakeholders are ongoing and will continue through the development and construction process. Anbaric intends to fully engage all relevant communities and stakeholder groups to address their concerns and minimize impacts to the environment and the general public. These engagements will, where appropriate, continue throughout the lifetime of the Project. See Attachment 5 Stakeholder Engagement for more information.

If awarded a project through this solicitation, Anbaric will look to establish a working group with BOEM and other relevant departments/agencies. In addition to ongoing direct meetings with stakeholders, Anbaric intends to establish an ongoing virtual open house for our projects. This platform will allow for information to be shared with the public, and also for Anbaric to receive feedback. We intend to have a public Q&A component so that we are being fully transparent with all interested parties as the project evolves and progresses.

7.5 Environmental Justice

The assessment of potential effects on overburdened community and minority populations is required under Executive Order (EO) No. 12898 (1994). EO 12898 requires federal agencies to adequately identify and address disproportionately high health and/or environmental effects of federal actions on overburdened communities. A thorough assessment of potential impacts, including the identification of avoidance, minimization and mitigation measures will be completed once the bid solicitation is awarded.

Offshore construction activities would have negligible direct effects on the closest communities due to their distance from the shore and the nature of the work. This is not expected to be different for overburdened communities compared with the overall population. Furthermore, the Project will likely increase employment and economic opportunities; these opportunities are expected to be similarly benefit the general population and overburdened communities. See Attachment 15 Environmental Protection Plan for additional information.

7.6 Permitting Plan

The submarine [redacted] entirely located in federal waters on the Outer Continental Shelf (OCS). The Project will require a Bureau of Ocean Energy Management (BOEM) Right of Way/Right of Use Grant or Easement (BOEM ROW/RUE). It is anticipated that the Project will require a BOEM Environmental Assessment (EA) review and the issuance of an expected NEPA Finding of No Significant Impact (FONSI). Anbaric will consult with BOEM to coordinate the initiation of the NEPA Review and the process for the issuance of the ROW/RUE for the Project.

In addition, since the Project involves the placement of structures (cables) in the seabed of the OCS, the United States Army Corps of Engineers (USACE) has indicated they would have regulatory review and permitting jurisdiction under Section 10 of the Rivers and Harbors Act. This will be confirmed through the BOEM ROW Grant review process.

As the Project is located entirely in federal waters, no state or local permit approvals are expected to be required. Anbaric has conducted extensive review of all federal, state, and local regulations, and ordinances to accurately account for regulatory implications of the Project. This detailed review, determinations of applicable permits and processes to be conducted with the governing agencies, as well as consultations and permit authorizations required, pending, or received by Anbaric to date are provided in Attachment 18 Permitting Plan.

8 Project Schedule

8.1 Scheduling Background

Activities listed on the Project Schedule include the following main tasks:

- BOEM ROW/RUE
- Design and engineering
- Manufacturing and procurement
- Construction
- Commissioning and testing

Anbaric based the Project Schedule on current market information and RFI responses from various suppliers as well as experience from subject matter experts in project design, environmental permitting, and project management. The timeline presented in the Project Schedule is based on a sample Commercial Operation Date (COD) of [redacted] to show an example of a project timeline. Actual dates would change upon award once the solicitation schedule is finalized by NJBPU and PJM. This date is subject to change as project solicitations are assigned by NJBPU and PJM. Working backwards from this COD, Anbaric has developed the Project Schedule to ensure all necessary activities are completed in a timely fashion.

8.2 Assumptions

8.2.1 Permitting and Risk Assessment

Anbaric has used industry experience to estimate permitting durations for federal permits offshore. These timelines depend heavily on the type of deliverables required by regulatory agencies, duration of the agency review process, and duration of Anbaric's modification and revision window. The Project Schedule has accounted for agencies and Anbaric review process while noting some permitting work can be completed concurrently.

The Project will require a Bureau of Ocean Energy Management (BOEM) Right of Way/Right of Use Grant or Easement (BOEM ROW/RUE) for the submarine transmission link. It is anticipated that the Project will require a BOEM Environmental Assessment (EA) review and the issuance of an expected NEPA Finding of No Significant Impact (FONSI). Furthermore, consultation with appropriate agencies, such as the United States Army Corps of Engineers (USACE), will also take place and has been accounted for in the Project Schedule. Because of the amount of permitting that must be done offshore, [redacted].

Some permitting can be completed in parallel with the design and engineering of the Project but permitting activities must be finalized before construction can begin. Permitting activities are modeled on the schedule to begin approximately [redacted] before detailed engineering design begins. This allows design and procurement activities to be finalized concurrently with permitting activities.

8.2.2 Design, Procurement, Construction, and Commissioning

[redacted]

[redacted]

8.3 Boardwalk Power Option 3.1

Boardwalk Power Option 3.1 activities and their associated durations are shown in Figure 8-1 below. A more detailed schedule is included in Attachment 11 Option 3.1 Project Schedule. The Boardwalk Power Option 3.1 duration is typical of projects seen in this industry.

[redacted]

Figure 8-1 Boardwalk Power Option 3.1 High Level Project Schedule

9 Project Constructability

This Section illustrates how Anbaric has identified and addressed the Project's constructability and highlights how Anbaric is positioned to further develop and complete the Project upon award. Anbaric has based the constructability of these solutions on current HVDC technology and has gathered information from vendors within the industry to provide technology descriptions, schedule of implementation, procurement timelines, and risk in relation to supply chain and cost estimation.

The following bullets explain the status on each topic for Boardwalk Power Link Option 3.1:

- **Cost**: Anbaric obtained CAPEX and OPEX estimates from suppliers and verified with internal cost databases and developed a cost benefit analysis. See Attachment 2 Cost Benefit Analysis. Also, see Section 5, for detailed project cost explanation.
- **Offshore route:** The offshore route has been determined using a GIS based desktop study to ensure it avoids obstructions and difficult seabed soil types and follows suitable bathymetry. Anbaric also considered risks involved in aligning with other offshore space users such as navigational channels, fisheries and sand borrow areas. More details can be found in Attachment 1, Analysis Report.
- **Permitting**: Anbaric has also coordinated with USACE and United States Coast Guard (USCG) to validate feasibility of offshore route. Anbaric has also consulted with USCG for securing the offshore operations with regard to potential traffic interference.
- **Engineering**: Single line diagrams have been created for the interlink and the tie-in to the offshore substation platforms. For these drawings, refer to Attachment 19, Option 3.1 Detailed SLD of Platform Interlink Cable.
- **Technology**: The Project uses commercially available, fully qualified, and proven technology. For more information, refer to Section 3.1.3.
- **Schedule**: Anbaric created a detailed Project Schedule based on previous project management and scheduling experience and supplier input. See discussion in Section 8 for more information. This timeline is feasible from a solicitation schedule point of view and plans for significant schedule float for most critical milestones, such as transport, installation, and commissioning.
- **Procurement and supply chain**: Anbaric's procurement strategy focuses on minimizing risks. Information was requested from suppliers with a track record in offshore platform construction and HVDC systems.
- **Risk mitigation**: Awarding multiple projects based on the standard design approach from the Boardwalk Power Portfolio will reduce cost and construction time, mitigating cost risk on the Project.

Appendix A

Schedule E to the Designated Entity Agreement Between Anbaric and PJM

Non-Standard Terms and Conditions, Schedule E to the Designated Entity Agreement

The Designated Entity commits to the following terms and conditions relevant to the Project:

a) **Cost Caps**. The Designated Entity agrees that it will not seek recovery through its Annual Transmission Revenue Requirement of any Construction Costs in excess of an amount equal to the Construction Cost Cap Amount.

b) **Return on Equity.** The Designated Entity shall be entitled to recover the FERC-approved return on equity ("ROE") on the Construction Costs, but, subject to clause (d) below, shall forego all existing or future return on equity incentives approved by FERC. *[Note to Draft: The Designated Entity commits to file for an 8.5% ROE with FERC. Because Anbaric is waiving all incentive basis point adders, the 8.5% ROE is not a base ROE but the full ROE. The ROE will be further reduced for cost overruns and schedule delays, and will be increased for cost savings, as set out in this attachment. The term of the ROE shall be for initial investment of the Construction Costs for the life of the project, and Anbaric agrees not to seek a higher ROE pursuant to its rights under Section 205 of the Federal Power Act.]*

c) **Reduction in ROE for Costs Above Project Bid Estimates.** The Designated Entity shall recover a reduced ROE of 5.75% on the Construction Costs that exceed the Indexed Bid Construction Costs, up to the Construction Cost Cap Amount.

d) **ROE Incentive to Actual Project Costs Less Than Project Bid.** If the actual Construction Costs are less than the Indexed Bid Construction Costs, the Designated Entity shall be entitled to a 50 basis point adder to the project ROE for each 10%, or portion thereof, that Construction Costs are below the Indexed Bid Construction Costs. For example, if Construction Costs are 5% below the Indexed Bid Construction Costs, the ROE will be adjusted from 8.5% to 8.75% (8.5% plus 0.50%x (5%/10%)).

e) **Capped Equity Structure**. The Designated Entity commits to an actual equity content of no greater than 45%. The Designated Entity shall be granted relief from this commitment if the capital market conditions do not remain normal and the Designated Entity does not have the ability to finance the Project with the proposed capital structure.

f) **Schedule Delays:** The Designated Entity commits to a reduction in the Project ROE if the Project does not achieve Commercial Operation by the Target Project In-Service Date, as such date may be extended for Extension Events. The reduction in Project ROE will be in accordance with the following table ("Schedule Guarantee"):

Schedule Guarantee	
Months of Delay	**Total Reduction in ROE**
0 to 6	0.0 basis points
6 to 18	2.5 basis points/month
18 months	30 basis points

The Schedule Guarantee is subject to a maximum reduction in the ROE of thirty (30) basis points. The Target Project In-Service Date is subject to extension if the Designated Entity's ability to perform the Scope of Work is delayed due to an Extension Event

c) **Liquidated Damages**: The Designated Entity commits to use commercially reasonable efforts to negotiate delay liquidated damage provisions ("Schedule LDs") with the primary contractor(s) for the Project. To the extent the Project is delayed and the Designated Entity collects Schedule LDs from its contractor(s), the Designated Entity commits to pass through the value of the Schedule LDs received by the Designated Entity.

As used herein, the following terms have the following meanings:[25]

1. "Annual Transmission Revenue Requirement" means the rate determined by the FERC following a filing by the Designated Entity under Section 205 of the Federal Power Act and FERC's rules and regulations.
2. "Bid Construction Costs" means Construction Costs as proposed by the Designated Entity forming the basis for this proposal and totaling $80,026,722.
3. "Commercial Operation" means the Project (i) has been completed in accordance with the Scope of Work in Schedules B this Agreement, (ii) meets the criteria outlined in Schedule D of this Agreement and (iii) is under Transmission Provider operational dispatch.
4. "Construction Cost Cap Amount" means Indexed Bid Construction Costs multiplied by 1.30.
5. "Construction Costs" means any and all costs and expenses directly or indirectly incurred by the Designated Entity and its affiliates to develop, construct, complete, test, start-up and commission the Project and place the Project in service in accordance with Schedule C, including without limitation any costs and expenses incurred by the Designated Entity and its affiliates in connection with the following: (i) acquiring land and land rights for the Project, (ii) performing any environmental assessments in connection with the Project, (iii) designing and engineering the Project, (iv) procuring any equipment, supplies and other materials required to complete construction of the Project and place the Project in service, (vi) otherwise performing or completing any and all development and construction-related activities required in connection with the Project, including but not limited to all permitting, licensing, site preparation and clearing, equipment assembly, installation and erection, testing and

[25] Capitalized terms used but not defined herein have the meaning set forth in the Pro Forma Designated Entity Agreement attached to PJM's tariff.

commissioning activities, whether performed directly by the Designated Entity or by one or more third parties retained by the Designated Entity (without regard to whether such third parties are affiliated or non-affiliated), but excluding in all cases Excluded Costs.

6. "Cost Overrun" means the amount by which Construction Costs exceed the Indexed Bid Construction Costs.
7. "Excluded Costs" means (i) any taxes, duties, tariffs, customs, levies, foreign exchange rate impacts, and any financing costs, including any approved return on equity, Allowance for Funds Used During Construction, or similar allowance or financing cost or charge earned or accrued in connection with the Project during the period of development and construction of the Project (or thereafter), (ii) any costs resulting from the enactment, adoption, promulgation, issuance, modification, or repeal of any statue, rule, regulation, order or other applicable law or changes in the enforcement, interpretation or application of any statue, rule, regulation, order or other applicable existing law, (iii) any costs and expenses associated with any PJM, New Jersey BPU, or siting authority directed additions to or modifications of the Scope of Work (but only if and to the extent such costs and expenses are in excess of the costs and expenses that would have been incurred but for such addition to or modification of the Scope of Work), (iv) any costs and expenses incurred as a result of a Force Majeure (but only if and to the extent such costs and expenses are in excess of the costs and expenses that would have been incurred but for such Force Majeure), (v) any costs resulting from permitting delays or injunctive action by a court, (vi) cost increases due to fluctuations in commodity cost, (vii) any costs resulting from breach, default, interference, or failure to cooperate by (A) Transmission Provider of its obligations under this Designated Entity Agreement or (B) any Transmission Owner in connection with any interconnection agreements and (viii) any request by Transmission Provider to delay or suspend any activities associated with the Project.
8. "Extension Events" means (i) any delays resulting from the enactment, adoption, promulgation, issuance, modification, or repeal of any statue, rule, regulation, order or other applicable law or changes in the enforcement, interpretation or application of any statue, rule, regulation, order or other applicable existing law, (ii) any delays associated with any PJM, New Jersey BPU, or siting authority directed additions to or modifications of the Scope of Work, (iii) any delays as a result of a Force Majeure, (v) any delays in permitting or resulting from injunctive action by a court, (iv) any delays resulting from breach, default, interference, or failure to cooperate by (A) Transmission Provider of its obligations under this Designated Entity Agreement or (B) any Transmission Owner in connection with any interconnection agreements and (v) any delays as a result of a request by Transmission Provider to delay or suspend any activities associated with the Project or delays in the Project due to a delay in the Transmission Provider completing its scope of work.
9. "Indexed Bid Construction Costs" means Bid Construction Costs adjusted for the dollar year in which construction of the Project begins. Such dollar year adjustment to be based on changes in the Handy-Whitman Index "Cost Trends of Electric Utility Construction: North Atlantic Region", "Total Transmission Plant" from July 1, 2021 until the date full notice to proceed is given by the Designated Entity to its construction contractor(s).
10. "Scope of Work" means the approved scope of work for the Project.
11. "Target Project In-Service Date" means [________].