



**ATLANTIC POWER
TRANSMISSION LLC**

ATLANTIC POWER TRANSMISSION LLC

**Response to New Jersey Board of Public Utilities Request for
Additional Information issued on April 27, 2022:**

APT First 1200 MW (2021-NJOSW-210)

APT Second 1200MW (2021-NJOSW-172)

APT Third 1200 MW (2021-NJOSW-769)

Docket No. QO20100630

Date Submitted: May 20, 2022

TABLE OF CONTENTS

Executive Summary 3
Questions Addressed to Transmission Developers 5
Appendix A: Questions Addressed to New Jersey Division of Rate
Counsel..... 18
Appendix B: Questions Addressed to Offshore Wind Developers... 24



Executive Summary

Atlantic Power Transmission LLC (“APT”) and its sponsor, Blackstone Infrastructure Partners L.P. (“BIP” and together with Blackstone Inc., and its other affiliates, “Blackstone”) appreciates the opportunity to respond to the New Jersey Board of Public Utilities (“Board” or the “NJBPU”) April 27, 2022 Notice (as revised May 9, 2022) requesting additional information from Offshore Wind Developers, Transmission Developers, and the New Jersey Division of Rate Counsel (“Rate Counsel”). APT is responding to the questions directed to Transmission Developers and is also sharing its perspective on certain questions directed to Offshore Wind Developers and Rate Counsel. [REDACTED]

It is evident from the questions directed to stakeholders that the Board has an overwhelming commitment to selecting a project that will be constructed in a timely and cost effective manner. APT shares this objective. A state solicitation process that results in the selection of a solution that avoids protracted litigation, cost overruns, and significant public discord will benefit New Jersey ratepayers.

[REDACTED]

APT and Blackstone have brought that same mindset to New Jersey’s SAA solicitation process. Our proposals offer prudently balanced cost and supply chain considerations with a solid plan to minimize project risks to ensure that our projects are permitted and constructed on time, safely and with the support of local communities, non-governmental organizations, labor partners, regulatory agencies, elected officials, and ratepayers. [REDACTED]

[REDACTED]

[REDACTED] This further reflects our view that the transmission solicitation is a true partnership among APT, Blackstone, and the State of New Jersey, with the ultimate goal of seamless integration with the Offshore Wind Developers.

[REDACTED] As one of the world’s largest asset managers, with \$915 billion of assets under management, Blackstone has strong relationships [REDACTED]. Additionally, unlike other project proponents, Blackstone and APT were responsive to the Board’s request that rate proposals respect the need for intergenerational equity of cost recovery. APT’s pre-determined revenue requirement proposal not only



provides cost certainty [REDACTED]

[REDACTED]
The Alliance Partnership provides a clear advantage for APT

The Alliance Partners

provide other tangible benefits as well, including a history of successfully collaborating on energy infrastructure projects. For example, Hitachi Energy and Aibel have been designing, manufacturing, and installing offshore substations together for 18 years, further mitigating interface risks which otherwise could impact schedule.

Blackstone and APT’s transmission proposals provide the Board with the best opportunity to secure offshore wind transmission projects that can be timely constructed in a cost-effective manner for ratepayers. The resources and commitment of Blackstone, the large-scale energy project experience of the combined APT and Blackstone management team, the collective contributions of the Alliance Partners, the pre-determined revenue requirement rate structure, and the risk-mitigation measures embedded in our Proposals should provide the Board with great confidence that the APT proposals reflect the best opportunity to deliver timely benefits to ratepayers. To that end, APT and Blackstone have provided a comprehensive set of responses to the Board’s inquiries below that we hope reflects the depth of analysis and careful consideration of issues that informed APT’s proposals.

APT and Blackstone are fully committed to working with the Board to ensure the long-term success of both the SAA solicitation and New Jersey’s ambitious offshore wind generation initiatives.



Questions Addressed to Transmission Developers

Please find below APT’s detailed responses to the updated Request for Additional Information published April 27, 2022 and as revised on May 9, 2022. Any terms not defined herein are used as defined in the “New Jersey Board of Public Utilities Offshore Wind Transmission Proposal Data Collection Form” submissions (“APT BPU Supplement”) accompanying APT proposals 172 (“Second Proposal”), 210 (“First Proposal”), & 769 (“Third Proposal”; together with the First Proposal and the Second Proposal; APT’s “Proposals”).

1 | How should the Board ensure that projects are completed on schedule given upcoming OSW generation projects’ timelines? Please explain how changes in a future OSW generation project schedule may affect a selected SAA project, if at all.

APT recognizes that transmission projects must be completed on schedule to ensure the future success, growth, and sustainability of the burgeoning offshore wind industry in New Jersey. [REDACTED]

[REDACTED]

[REDACTED]

As detailed below, the proposals submitted by APT are unrivaled in these key categories and should provide the Board with confidence that APT’s projects will be delivered on schedule.

Of particular relevance, the APT team is supported by Blackstone, which has invested in and developed new large-scale energy infrastructure projects worth over [REDACTED]

[REDACTED] This

expertise and experience will help ensure the APT projects are completed on schedule.

[REDACTED]

[REDACTED]

APT’s singular focus has been on the development of project proposals that reflect the fullest commitment to the success of New Jersey’s nation-leading offshore wind generation and transmission goals. Supporting New Jersey is APT’s flagship mission and APT and Blackstone are committed to continuing to earn the Board’s trust as a reliable and resilient business partner.

To that end, APT has developed genuine partnerships with local communities and unions, partnered with global transmission industry leaders, and made significant commitments designed to accelerate New Jersey’s offshore



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Questions Addressed to Transmission Developers

wind industry. APT, along with its Alliance Partners, have committed to continuously strengthen a non-compromising Safety culture and training. All of this is supported by Blackstone, which provides APT with the resources necessary to deliver on its long-term commitments.

[REDACTED]

The Board should have every confidence that APT’s very experienced management team can deliver its transmission solutions predictably – with cost certainty and on schedule. [REDACTED]

[REDACTED] Leading the effort to timely complete the construction of APT’s projects are:

- CEO Andy Geissbuehler has more than twenty-five years of large scale energy project leadership experience, including building a fleet of turnkey power stations in Australia, Europe, Massachusetts, Texas and California, followed by leading a global power generation supply chain organization with a spend of \$7 billion annually. [REDACTED]

- Sean Klimczak, Global Head of Infrastructure at Blackstone, has been involved in the execution of numerous Blackstone investments, including Transmission Developers Inc. (developer of the Champlain Hudson Power Express); Meerwind (one of the largest operational German offshore wind farms); GridLiance (transmission utility holding company incubated from zero assets in 2014 to 700 miles of transmission lines and related substations across six states and three regional transmission organizations; sold to NextEra in 2020); [REDACTED].
 - Blackstone’s experience forming GridLiance, a portfolio company, [REDACTED] Blackstone partnered with a group of experienced transmission executives to establish GridLiance, a platform to acquire, develop, and operate regulated transmission assets in the US. Blackstone recruited senior executives with decades of experience in utility and transmission to GridLiance’s Board to oversee strong operations, including Terry Boston, former CEO of PJM, Michael Morris, former Chairman and CEO of AEP, and Justin Campbell, former VP of Edison Transmission. [REDACTED]

- Chairman Peter Giller has twenty years of engineering and construction experience with Westinghouse Electric and ABB, including ten years as head of ABB’s global power development business and a term as CEO of International Power. In his role as a Senior Advisor to Blackstone, Peter led the development, construction, and operation of Blackstone’s Meerwind Sud, a 288MW offshore wind farm in the German sector of the North Sea.

APT has worked with experienced transmission package managers to develop a comprehensive Project Execution



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Questions Addressed to Transmission Developers

Plan¹ (“PEP”) focused on delivering certainty [REDACTED]

[REDACTED] To support the PEP, APT has, among other things:

- Prioritized union labor, enabling unprecedented support through the project’s New Jersey Union Coalition;
- Championed strong Safety leadership, securing fullest commitment from all partners to strengthen the projects Safety culture;
- Secured three industry-leading EPC contractors as Alliance Partners (Hitachi Energy, Aibel and Nexans) with a history of successful collaboration on HVDC transmission projects; Secured production capacity to mitigate supply chain exposure and to proactively address anticipated scarcity of components;
- Obtained support from all host communities to minimizes public opposition. APT has received letters of support from the following municipalities: [REDACTED];
- Engaged in early-stage workforce development, including a commitment of \$50 million towards New Jersey workforce development;

[REDACTED]
[REDACTED]
[REDACTED]

[REDACTED]

[REDACTED]

APT’s proposals also apply HVDC technology, which significantly reduces the number of cables needed and addresses the public’s concerns about adverse health effects from transmission facilities. APT also has secured a 40-acre converter station site bordering the Deans substation parcel and its fully underground circuits will avoid beach crossings and shorefront structures. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] APT is a portfolio company of Blackstone Infrastructure Partners. Blackstone is one of the world’s largest asset

¹ Please see Attachment 16 of the APT BPU Supplement (pages 329-382).



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Questions Addressed to Transmission Developers

managers with \$915 billion of assets under management as of March 2022. Formed in 2017, with \$27 billion of assets under management as of March 2022 (including co-investment), BIP is among the largest infrastructure funds globally and has an open-ended, permanent structure that allows for the pursuit of high-quality infrastructure assets and the ability to act as a long-term partner and owner. Since 2017, BIP has invested in portfolio companies with an aggregate enterprise value of \$101 billion² across the utilities, power and renewables, transportation, and communications sectors. [REDACTED]

Since 2005, Blackstone has invested in and developed large-scale energy projects worth over \$20 billion. Blackstone has extensive experience developing complex, large-scale projects and managing the various timing, supply chain, and other considerations that arise. Representative large-scale projects backed and developed by Blackstone include:

[REDACTED]

Backed by the experienced Blackstone team, the APT team also has a successful track record of executing new, complex, large-scale US projects. Blackstone is committed to the energy transition underway in New Jersey and is well-placed to ensure APT’s access to capital, commercial, and construction expertise during and beyond construction.

To minimize the potential adverse impacts associated with changes to offshore wind generation project schedules, APT believes it is critical that the Offshore Wind Developer and the Transmission Developer maintain a positive, collaborative, and timely dialogue. [REDACTED]

[REDACTED]

² Represents aggregate total enterprise value of BIP portfolio companies at acquisition in which BIP owns at least 20% of the company’s common equity



[REDACTED]

2 | Please outline any anticipated changes in tax policy and any federal sources of money transmission developers might seek for a selected SAA project —or that New Jersey could seek.

Potential Federal Funding Sources for Offshore Wind Transmission and Transmission System Improvements

APT is committed to evaluating, together with the NJBPU, potential federal funding and other sources of federal support that could directly or indirectly support APT’s Proposals and benefit New Jersey ratepayers. There are a number of potential federal funding sources that may be available to: (1) help developers like APT fund offshore wind transmission projects; and (2) assist New Jersey’s public utilities in upgrading their transmission infrastructure to take advantage of offshore wind generation in the most reliable, efficient, and state-of-the art manner. [REDACTED]

APT has identified and is evaluating several specific sources of federal support, which are described below. [REDACTED]

[REDACTED]



[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]



[REDACTED]

3 | Other than an act of Congress amending the current Federal Investment Tax Credit (“ITC”), might there be an innovative way (such as in collaboration with OSW generation developers) for Option 1b, Option 2, or Option 3 projects that support OSW to qualify for the ITC?

[REDACTED]

[REDACTED]

[REDACTED]



[REDACTED]

[REDACTED]

[REDACTED]

We would further note that with the backing of Blackstone, one of the world's largest asset managers, APT has the financial strength to fund the proposed project through construction and beyond. APT is not reliant on a new Act of Congress, particular tax credit, or federal funding to make its submission a reality.

4 | How might transmission developers explore the availability of federal funding opportunities that may be available to support transmission projects? How would receipt of such funding be incorporated into bids or financing arrangements? How might the Board coordinate on applying for such opportunities?

Transmission Developers should proactively seek to explore the availability of federal funding opportunities that may support transmission projects [REDACTED]

[REDACTED]

[REDACTED]

APT's sponsor BIP is among the largest infrastructure funds globally. APT is not reliant on external funding for its proposed project, although we will explore all available options and work to keep the NJBPU apprised of any potentially beneficial programs.

[REDACTED]

Developers and the NJBPU should work collaboratively to explore availability of funding. [REDACTED]

[REDACTED]



5 | How might transmission developers explore the availability of federally-backed loans for loan guarantees that may be available to support transmission projects? How should developers and the Board coordinate on applying for such opportunities? How would receipt of such loans or loan guarantees be incorporated into bids or financing arrangements?

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

Developers (and their financial advisors) and the NJBPU should work collaboratively to explore availability of federal credit support. [REDACTED]

6 | How might a selected SAA project manage and mitigate material and equipment supply chain risks and any associated costs, particularly as they might related to HVDC?

With global offshore wind construction growing from about 6 GW yearly to about 25 GW yearly for the next 10 years, scarcity in the transmission supply chain must be managed at a very early stage to mitigate schedule and cost impacts.

APT has anticipated this challenge when implementing its unique Alliance Partner concept before entering the bidding process. [REDACTED]

[REDACTED]

[REDACTED] Also here, APT's Alliance Partnership is highly effective.

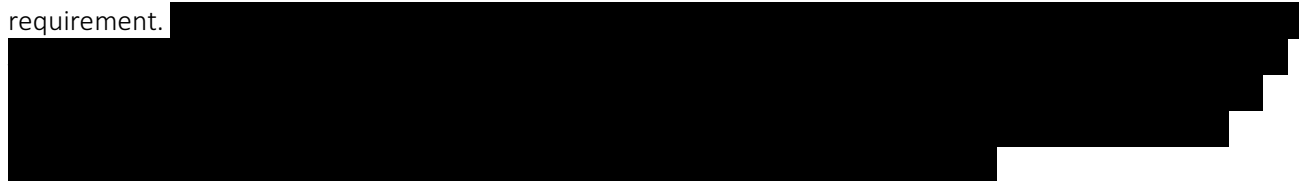




7 | How might a selected SAA project manage financial risk, including, but not limited to, market and interest rate dynamics, labor costs, raw material and supply chain costs, land procurement costs, and insurance?

Selected SAA projects should provide the strongest cost containment to transfer financial risk away from New Jersey ratepayers to the Transmission Developer.

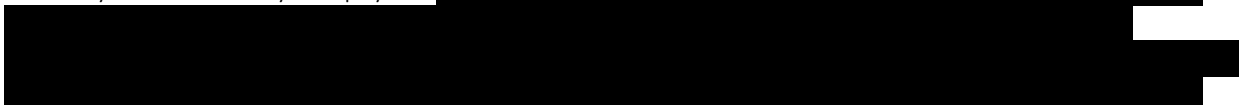
Of the bids submitted, we understand from publicly available information that APT’s proposals are the only proposals which provide comprehensive cost containment through a 40-year pre-determined revenue requirement.



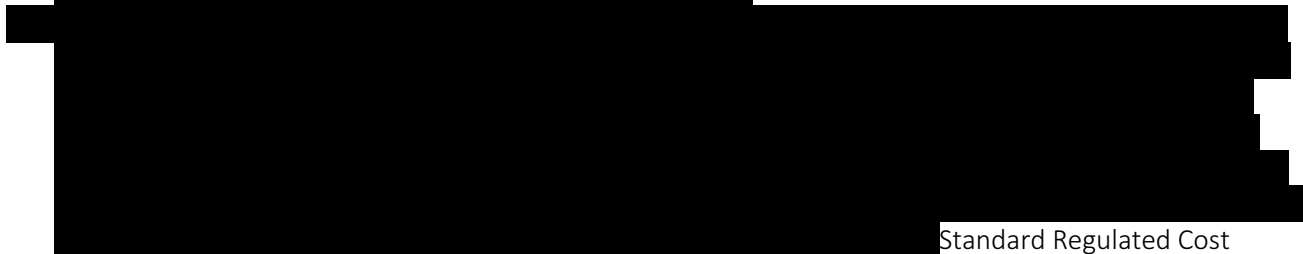
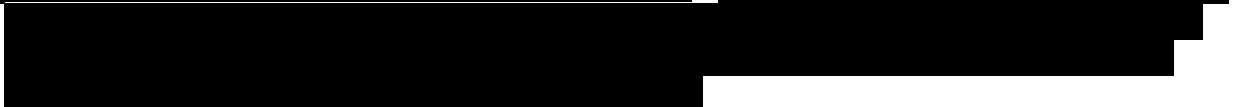
APT designed its Proposals using a Pre-determined Revenue Requirement, as expressly permitted by the NJBPU, to be responsive to the New Jersey’s stated objectives in “BPU Supplemental SAA Bid Data Collection 8.31.2021_clean” to achieve: 1) “cost containment options that limit New Jersey ratepayer exposure to cost overruns” and 2) “intergenerational equity of cost recovery”.

Based on APT’s review of publicly available information, APT has addressed these two objectives in a manner that limits the financial risks to the ratepayer better than any other developer or proposal:

Maximization of Cost Certainty – The Pre-determined Revenue Requirement approach maximizes cost certainty for New Jersey ratepayers.

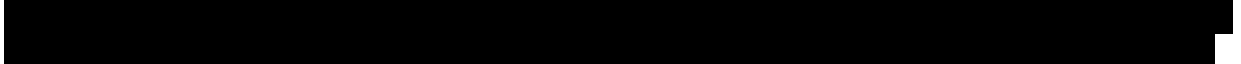


Maximization of Intergenerational Equity of Cost Recovery –



Standard Regulated Cost

Recovery Approach”, which creates excessive burdens on ratepayers



Standard Regulated Cost

Recovery Approach proposals often do not cap many costs



and even capped costs have outs that create material financial risk to ratepayers

[REDACTED]

Since the time of the second offshore wind power generation solicitation, the yield on the 10-year United States Treasury has increased by +145bps.

[REDACTED]

APT's Proposals are structured such that the cost to ratepayers is materially less expensive for every additional 1200MW circuit.

[REDACTED]

APT's Operational Approach

Underpinning APT's unique contractual structure within our proposals is our proactive approach to managing the financial risk profile of our project, including the risks mentioned in the question

[REDACTED]

- o APT recently announced a \$50 million commitment to workforce development in New Jersey in April 2022, which we believe reflects a continuation of our proactive efforts to-date to establish workforce development programs to address key gaps that exist
- o APT has prioritized and actively partnered with its New Jersey Union Coalition in support of its bids and will continue to further expand the existing partnership that APT and Blackstone have with labor. The project's broad-based New Jersey Union Coalition includes Eastern Atlantic States Regional Council of Carpenters; International Union of Operating Engineers Locals 825 & 25; Iron Workers Local 399; and International Brotherhood of Electrical Workers Local 456

[REDACTED]



- o APT and the New Jersey Union Coalition are working to establish New Jersey’s industry leadership by focusing on maximizing local manufacturing opportunities, including working with local companies and building components in-state.

[REDACTED]

APT has already moved to secure all of the real estate that it believes to be necessary for our proposals. We have secured a 40-acre site directly adjacent to the Deans substation, in the South Brunswick Township.

[REDACTED]

leading to strong letters of support from each municipality along our project route and the ability to conduct geotechnical diligence

- o APT has received letters of support from the following municipalities:

[REDACTED]

8 | If an Option 2 or Option 3 proposal is selected, please detail the potential reliability and economic benefits.

[REDACTED]

. For example, a weather event in the United Kingdom in 2019 demonstrated that the bulk power grid, at a time of stress, can interact with HVAC offshore wind tie lines to cause cascading electric generation outages. In this case, the result was the loss of power to over one million households and to electric rail lines at rush hour on a Friday afternoon in August. The cause - a simple lightning strike – resulted in multiple generators tripping offline, including 700 MWs of offshore wind. The offshore wind tripped because an insufficiently damped electrical resonance occurred in the sub-synchronous frequency range, between the HVAC-attached windfarm and the grid. This type of outage, resulting from a stability issue, would not have occurred if the offshore wind farm was connected to the bulk power system using HVDC.

HVDC transmission lines embedded in AC transmission networks are not susceptible to inadvertent power flows and will prevent the occurrence of insufficiently damped electrical resonance conditions between offshore



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Questions Addressed to Transmission Developers

windfarms and the onshore grid in connection with contingencies or major disturbances in the transmission system. Hence, construction of HVDC lines between remote generators and major load centers is an effective way to 'harden' the electric power grid and to prevent the collapse of the power grid due to cascading conditions.

[REDACTED]

[REDACTED]



Appendix A: Questions Addressed to New Jersey Division of Rate Counsel

2 | How should the Board evaluate Option 2 transmission solutions that have less impact on the public (i.e. avoid beach crossings), but inherently entail greater costs?

3 | How should the Board weigh Option 1b transmission solutions against each other that have less impact on the environment (i.e. wetlands), but may inherently entail greater costs?

7 | How should the Board weigh intangible or other economic benefits (parks, recreation opportunities, and economic development) against proposal costs?

The below reflects APT's views on questions 2, 3, & 7 posed to Rate Counsel.

[REDACTED]

This overriding objective was reflected in APT's proposal, which provides both rate certainty and intergenerational equity of cost recovery to current and future residents of New Jersey.

[REDACTED]

APT is confident that its proposal has appropriately balanced cost considerations with the need to minimize project risks to ensure that its project can be permitted and constructed on time [REDACTED]

[REDACTED] Specifically, APT's project avoids beach crossings, minimizes impacts to wetlands, and provides significant public and economic development benefits. This does not mean that APT's proposal is inherently more costly than projects that have not carefully taken environmental and public considerations into account.

At the end of the day, the State of New Jersey wants to select a transmission project that can be constructed in a timely manner. A state solicitation that results in the selection of a project that cannot be constructed, or can only be constructed after protracted litigation and significant public discord, would provide no benefit to New Jersey ratepayers. Stated differently, projects that cannot be built provide no value to ratepayers; in fact, these projects present significant costs to consumers in the form of foregone opportunities.

[REDACTED]

Blackstone and APT have brought the same mindset to New Jersey's SAA solicitation and are confident that APT's proposed projects can be timely constructed with the support of local communities, non-governmental organizations, labor,



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Appendix A: Questions Addressed to New Jersey Division of Rate Counsel

regulatory agencies, elected officials, and ratepayers.

[REDACTED]

As the NJBPU lays out on pages 7-8 of “2021 NJ_OSW_Proposal Window Overview_clean”, there are numerous criteria that must be evaluated when selecting the best Transmission Developer and project – it is no small task for the NJBPU to balance all of these criteria. Ultimately, to meet New Jersey’s goals, the chosen project must be constructable, [REDACTED]

[REDACTED]

APT’s Proposals have focused on achieving minimal public impact, minimal environmental impact, and maximizing other economic benefits to New Jersey all while providing the lowest cost solution [REDACTED] to New Jersey. [REDACTED]

- [REDACTED] APT’s project is designed with a sole focus on serving New Jersey and no other state. This approach minimizes risk of New Jersey state and local public opposition vs. projects that are designed to serve both New Jersey and New York.
- Industrial Shore Crossing & No Shorefront Community Impact – APT’s project does not impact any beachfront residential communities given its industrial landfall in South Amboy
- No Visible Shoreline or In-Land Structures – APT’s project is not above ground or visible anywhere [REDACTED]
- Use of Existing Rail Right of Way – [REDACTED]
- Minimal Use of Public Roads – Given that APT’s project route is focused on utilizing an existing rail right of way, our proposals will have very minimal impacts to public streets and parks. Given the long-term development and construction process, any route that uses public roads is likely to cause significant disruption to the daily lives of New Jersey residents.
- [REDACTED]



[REDACTED] Our converter stations will be located on land owned by APT, which is currently vacant.

[REDACTED] APT's project is designed to provide 3.6 GW of HVDC transmission with the environmental impact of a single 1.2 GW project via colocation. An additional benefit of colocation is that each 1.2GW phase can be constructed at a more efficient per unit cost [REDACTED]

[REDACTED] We have secured a 40-acre site that is adjacent to the Deans substation, which will allow us to scale up our project as desired by New Jersey in future years to achieve additional 1200 MW projects beyond our initial 3x1200 MW design. [REDACTED]

Use of HVDC Technology Reduces Crowding on Subsea Floors –

Fully Underground Design –

- [REDACTED] the City of South Amboy believes that APT's transmission project is a "great proposal for South Amboy and New Jersey".
 - "This development would transform the Pier, which is partially owned by the City and partially owned by a redevelopment company that was designated by the City, into an attractive landmark destination for residents and visitors alike, offering panoramic views of New York City and Raritan Bay" – Mayor Fred Henry, April 2022
- Proactive Workforce Development – Given the nascent nature of the offshore wind industry in the US, New Jersey has the opportunity to use its first-mover advantage to be the leader for offshore wind transmission for the entire country, which would result in significant economic growth beyond just the projects designed to serve New Jersey, given the eleven-figure investment required to meet existing state targets nationwide. To take advantage of this, New Jersey must be proactive in its workforce development initiatives, to address any skill or credential gaps.
 - APT recently announced a \$50 million commitment to workforce development in New Jersey. The commitment contributes towards creating a workforce hub for the burgeoning offshore wind industry in the Northeast region and the state, addressing one of the recommendations outlined by the New Jersey Offshore Wind Strategic Plan. APT remains committed to this smart, coordinated approach at this critical early stage in the development of the nation's offshore wind market
 - APT has prioritized and actively partnered with its New Jersey Union Coalition in support of its bids and will continue to further expand the existing partnership that APT and Blackstone have with labor. The project's broad-based New Jersey Union Coalition includes Eastern Atlantic States Regional Council of Carpenters; International Union of Operating Engineers Locals 825 & 25; Iron



- Workers Local 399; and International Brotherhood of Electrical Workers Local 456.
- APT has engaged New Jersey workforce development programs to help ensure New Jersey’s workers will be well prepared to lead the next phase of the development of the offshore wind industry. APT and its Alliance Partners – industry leaders with established offshore wind transmission experience – are committed to using our collective expertise and resources in offshore wind development to map out new, high-impact technical and professional employment opportunities for New Jersey citizens. As part of this workforce development initiative and investment, APT is actively collaborating with local enterprises with a focus on Diversity, Equity & Inclusion, statewide leadership, and Middlesex academic institutions, including Middlesex College and Middlesex County Vocational and Technical Schools.
- William Sproule, Executive Secretary-Treasurer of the Eastern Atlantic States Regional Council of Carpenters recently remarked publicly, “We wholeheartedly support the APT project with Blackstone. Their initiatives, strategic planning, and the discussions that we’ve been having even before construction starts is going to be extremely beneficial to New Jersey residents and help create more jobs in the construction industry as well as give us the ability to recruit new members into our union, into our apprenticeship, and provide them with career training and life-sustaining jobs with good pay and benefits”.
- Local Production Opportunities – APT and the New Jersey Union Coalition are working to establish New Jersey’s industry leadership by focusing on maximizing local manufacturing opportunities, including working with local companies and building components in-state. APT is in the process of developing sites to assemble 6,000-ton substation foundations and additional sites to install sensitive electrical equipment into substations

4 | How should the Board evaluate the cost differences of HVAC versus HVDC transmission solutions?

[REDACTED] HVDC has the ability to reach further from the point of generation to the point of interconnection allowing for the delivery of power closer to load reducing, congestion and minimizing required grid upgrades [REDACTED]. HVDC provides substantially lower electrical losses than AC, reducing life-cycle costs. HVDC has the capacity to scale to achieve the goals of the state without overcrowding the seafloor in congested areas such as Raritan Bay. HVDC provides ancillary electrical benefits such as reactive power support. Terrestrial HVDC can be run underground over distance to minimize aesthetic impact and siting challenges. Furthermore, HVDC technology addresses the public’s concerns about adverse health effects from transmission facilities.

5 | How should the Board evaluate the risk of failure and associated economic implications of HVAC versus HVDC transmission solutions?

[REDACTED] HVAC has higher route length per unit of transmission capacity (3 cables vs 1) and therefore three times the fault frequency [REDACTED]

6 | How should the Board evaluate the costs of the SAA versus the baseline scenario (radial export cables) and how should the Board consider non-price benefits?

While the Board could award transmission to any of the offshore wind generation projects (including in the Second Solicitation, awarded in June 2021) through radial export cables, SAA-procured transmission is



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Appendix A: Questions Addressed to New Jersey Division of Rate Counsel

significantly more efficient. SAA-procured transmission would allow New Jersey to support predetermined strategic levels of offshore wind generation levels at multiple specific POIs and in a coordinated fashion, rather than building the minimal amount of transmission required for each project, identified, and procured as part of one-off generation project interconnection requests at PJM. The NJBPU used the PJM interconnection queue process to determine the appropriate transmission to connect offshore wind in the first two solicitations. However, PJM's interconnection queue is currently undergoing needed reform because of the nearly 200 GWs of generation projects currently waiting to be studied. By using the SAA process to provide transmission for the follow-on solicitations, the BPU can pursue a holistic approach in which it procures the most cost-effective transmission to connect the exact amount of MWs of generation to meet New Jersey's offshore wind targets.

In the baseline scenario, each offshore wind project would connect separately to PJM with radial export cables. To do this, each project would theoretically have to be studied separately in PJM's interconnection queue. Building separate radial export cables for each project would be highly inefficient and unnecessarily impactful to the environment. It also would require each generation project to pick and commit to a specific POI early on as part of its interconnection study process, as required by PJM's tariff, without knowing the level of network upgrades (Option 1A in the SAA) required to interconnect or if it is the best or even a practical POI. There are significant downsides and risks to this method, as offshore wind generation projects could inadvertently choose a POI where significant upgrades are required, or where many projects are planning to interconnect. Without state coordination, such as with the SAA procurement, multiple generation projects could pick the same POI, resulting in confusion, undue costs, delays, and massive inefficiencies. Additionally, generation bidders would have to capture the uncertainties surrounding the timing and costs of interconnection as risk premiums and conditions as part of their bids. Alternatively, the NJ BPU would need to include a cost-sharing mechanism for the unknown required upgrades. All of these uncertainties and inefficiencies would ultimately flow to the ratepayers if the PJM interconnection queue were utilized to separately identify transmission upgrades and connection facilities for each project. These uncertainties and inefficiencies would be eliminated if the NJ BPU utilizes the SAA process to strategically procure the required transmission to connect offshore wind.

SAA projects should be considered by the NJBPU as a better investment of ratepayer money compared to the baseline case of radial export cables. SAA-procured transmission would result in greater flexibility and optionality in the future, as it would allow New Jersey to procure the most efficient basket of transmission resources to connect the desired amount of offshore wind resources in the locations with the lowest cost to interconnect and with the highest value for energy delivered.

8 | How should the Board consider the varying cost-cap proposals?

[REDACTED]. In "BPU Supplemental SAA Bid Data Collection 8.31.2021_clean", the NJBPU laid out several "equally-acceptable" cost recovery mechanisms, which included "Standard Regulated Cost Recovery" and "Pre-determined Revenue Requirements".

APT believes that the NJBPU's stated openness to various commercial approaches by developers was a call for innovation that could better serve the objectives of New Jersey ratepayers than the traditional regulated return on capital approach, which exposes ratepayers to escalating [REDACTED]

- Cost Containment – "Proposals with cost containment options that limit New Jersey ratepayer exposure

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Appendix A: Questions Addressed to New Jersey Division of Rate Counsel

to cost overruns are strongly preferred”

- Intergenerational Equity of Cost Recovery

APT’s proposal uses the “Pre-determined Revenue Requirement” approach, which maximizes cost certainty for ratepayers while [REDACTED] providing intergenerational equity of cost recovery [REDACTED]

[REDACTED] address

the NJBPU’s stated goal of intergenerational Equity of Cost Recovery. [REDACTED]

[REDACTED]

Since the time of the Second Solicitation, the yield on the 10-year United States Treasury has increased by +145bps. [REDACTED]

[REDACTED]



Appendix B: Questions Addressed to Offshore Wind Developers

1 | What are the most significant risks to completing your OSW generation project(s) on time and within budget if your project relies on one or more SAA transmission projects? How can those risks be best mitigated?

Enabling the OSW developer to fully concentrate on generation scope offers many benefits, such as economies of scale on transmission, permitting, supply chain and expedited access to interconnection. This optimized arrangement is built on the selection of a highly committed and capable SAA transmission provider, delivering project execution certainty, proven technical solution and solid financial sponsorship.

Please see responses to Transmission Developer Question #1 (for schedule & on-time completion) and Transmission Developer Question #7 (for cost and financial risks).

2 | For new Bureau of Ocean Energy Management (“BOEM”) leaseholders, are there concerns about obtaining a PJM queue position given that a Board decision on the SAA may constrain the potential points of interconnection (“POIs”) for future New Jersey OSW projects? Please describe the considerations related to utilizing SAA POIs and how OSW developers might switch from their queue positions (if already acquired) to the SAA-provided POI.

[REDACTED] SAA transmission collaboration, as it will allow the NJBPU to select the optimal number of MWs of offshore wind injection at various POIs in New Jersey. The NJBPU can do this in a holistic, efficient manner that allows the construction of network upgrades and on/offshore substations to support part, all, or more than Gov. Murphy’s current target amount of 7500 MWs of offshore wind generation. New leaseholders can then choose the POIs supported by SAA transmission as their PJM interconnection POI in their PJM queue request. This is expected to take away the significant uncertainty regarding the costs and timing of network upgrades and attachment facilities for new leaseholders’ projects entering PJM’s queue. Current queue position holders would be able to evaluate their options. If they hold positions prior to the two transition clusters in PJM’s proposed queue reform, they would most likely keep their position, depending on the upgrades required by PJM’s study process. They could also switch, depending on PJM’s final rules (as determined by FERC from PJM’s expected tariff reform package recently approved by its members) and the fact that SAA transmission would remove the cost and timing uncertainties of being involved in PJM’s queue transition clusters.

3 | If the Board were to select one or more Option 2 proposals under the SAA—onshore substations to offshore collector platforms (see, the November 18, 2020 Board Order under this same docket for more information on the Options1)—please provide additional details and considerations for connecting and coordinating OSW generation projects in terms of the costs, timing and operability of the OSW generation projects.

[REDACTED]

[REDACTED]

[REDACTED]

4 | If the Board were to select one or more Option 3 proposals under the SAA—offshore network connecting lease areas and substations to each other—please provide additional details and considerations for connecting and coordinating OSW generation projects in terms of the costs, timing and operability of the OSW generation projects.

[REDACTED]

[REDACTED]

[REDACTED]

5 | If an SAA Option 2 or Option 3 proposal is selected, is there any situation in which an OSW generation project would not be able to use the SAA Option 2 or Option 3 solution?

Generally speaking, there should be no compatibility issues between an Option 2 or 3 transmission solution and a generation project. Option 2 and 3 solutions are designed to receive collected generation at standard AC collection voltages produced by generators (i.e., 66 kV AC). Additionally, the offshore transmission platforms are designed to accommodate a sufficient number of collections circuits to fully utilize the transmission capacity and to provide adequate space for voltage step up and control. In that vein, APT’s proposal is designed to ensure seamless compatibility with generation projects and relies on proven HVDC system design, currently deployed in Europe.

[REDACTED]

6 | How should the Board consider the optimal locations for Option 2 substations? Should such determinations occur at the time of the Board’s SAA decision or following the Board’s OSW generation solicitations? If the location is determined after the generation solicitations, what type of coordination between generation and transmission developers would be required?

[REDACTED]



[REDACTED]

7 | Describe if and how the primary transmission line technology used for the Option 2 proposal, HVAC or HVDC, affects the development – timing, sizing, locational considerations and costs –of new OSW projects.

HVAC cables are limited in capacity and distance and suffer higher electrical losses than their HVDC counterparts. They cannot run as far, and more cables are needed to support a given amount of generation. Projects that use HVDC technology, like APT’s, use fewer cables and are consequently less environmentally disruptive. These benefits are realized at the point of landfall and throughout the terrestrial and subsea route. The fact that HVDC lines do not induce voltages or currents in surrounding objects, greatly minimizes the potential for public opposition and permitting challenges. Additionally, HVDC can run further to access advantageous POIs and offer greater capacity at lower electrical loss. Perhaps most consequently, as New Jersey thinks about building out its energy capabilities of the future, it should prioritize flexibility and scalability, which HVDC cables are best positioned for. Selecting a proposal based on proven and deployed HVDC technology minimizes schedule risk.

9 | Describe how risks of cable outages are managed with HVAC versus HVDC technology, particularly where using large single HVDC lines for any offshore segment.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]



10 | For an Option 2 or Option 3 scenario, please address whether an HVAC or HVDC would better integrate into a multi-state or multi-regional offshore wind transmission grid? Should coordination or future computability opportunities affect the Board's evaluation of proposals?

[REDACTED]

[REDACTED]

