Economic Analysis of the Atlantic Shores South Offshore Wind Project

by

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Executive Summary

The owners of Atlantic Shores, Shell and EDF, have rights to develop offshore wind projects in lease areas off the New Jersey coast. Its lease area OCS-A-0499 is known as Atlantic Shores South (AS South) and is composed of two projects, Atlantic Shores Offshore Wind One (AS1) and Atlantic Shores Offshore Wind Two (AS2). As part of its Second Offshore Wind Solicitation, in June 2021 the NJ Board of Public Utilities (BPU) approved the AS1 project as a qualified offshore wind facility and deemed it eligible to receive payments for Offshore Renewable Energy Credits (ORECs) for power. In announcing awards in its the Third Solicitation in January 2024, BPU indicated that a bid for the AS2 project had been rejected due to its OREC bid price being higher than the selected bids from Attentive Energy and Leading Light Wind.

On March 6, 2024 the BPU announced a proposed Fourth Solicitation seeking bids for an additional 1200-4000 MW of offshore wind capacity. In this solicitation, in addition to receiving bids for new projects, BPU has allowed companies who were awarded ORECs in the First or Second Solicitations to re-bid those projects and receive new awards which would supersede the existing OREC prices. Since new awards to AS1 or AS2 will undoubtedly result in higher ratepayer subsidies than those already approved, it is appropriate to estimate the ratepayer impact of any such awards and whether such an action by BPU would comply with the Offshore Wind Economic Development Act (OWEDA) which imposes mandates on the BPU meant to protect ratepayers. That is the purpose of this report.

Based on the expected OREC prices and terms of any new awards, the following are the major findings and conclusions which are detailed in the report:

Ratepayer Impacts

- If the AS South (AS1 and AS2) projects are awarded new OREC contracts, NJ ratepayers will be required to pay **triple** the market price for power from those facilities, from **$122-197/MWH** higher. This represents a much higher ratepayer subsidy than that associated with the existing AS1 OREC prices.
- The AS South ratepayer subsidy will total $32 billion over the life of the facility and the 2024 present value (PV) of these above market ratepayer costs is **$20 billion**.

Benefit-Cost Analysis

- The following is the benefit-cost summary for the AS South project:

	AS1	AS2	Combined
Benefits ($PV Billions)			
Energy, Capacity and REC Credits	5.11	4.50	9.61
Economic Benefits	3.40	3.00	6.40
Avoided Emissions (per IAWG)	0.01	0.01	0.02
Total Net Benefits	8.52	7.51	16.03
Costs ($PV Billions)			
OREC Payments	15.78	13.86	29.64
Impact on Tourism	6.00	6.00	12.00
Impact of Higher Electric Rates	28.00	26.00	54.00
Transmission Upgrade Costs	0.00	1.70	1.70
Lost RGGI Emissions Revenue	2.50	2.00	4.70
Total Costs	52.28	49.56	101.84
Net Benefits/ (Costs) ($PV Billions)	**(43.76)**	**(42.05)**	**(85.81)**
Benefit/Costs Ratio	**0.16**	**0.17**	**0.16**

- As indicated, the PV costs of the AS South project would exceed any potential benefits by **$86 billion** and the BCR is no more than 0.16 (i.e., **costs outweigh benefits by a factor of 6 to 1).**
- AS South OREC payment costs alone would exceed any benefits by more than $13 billion and on that basis alone, the BCR would be no more than 0.55. Thus, a BCR less than 1.0 cannot be achieved. Furthermore, **there is neither a net economic nor a net environmental benefit as required by OWEDA.**

Developer's Return on Investment

- The Atlantic Shores owners will realize a **19%** internal rate of return (IRR) on its investment which would increase to **23%** if they qualify for and are allowed to retain the additional 10% bonus Investment Tax Credit (ITC).
- The IRR is well in excess of that which is reasonable for its level of financial risk in the project or that allowed regulated utilities which is about 9%.

- A fair balance of financial risks and rewards between ratepayers and shareholders at OREC prices resulting from an AS South award cannot be achieved and thus would fail to comply with OWEDA.

Cumulative Impacts

- Together with projects approved in the Third Solicitation a new AS South award will burden ratepayers with above market subsidies ranging from $2 billion in 2032 to over $4 billion by 2045. The total subsidy over the operating period of these projects has a 2024$ PV of **$48 billion**.
- Electric bills will increase by **28%** for residential**, 35%** for commercial and **39%** for industrial customers.
- A new award to AS South alone would raise rates **13%** for residential, **16%** for commercial and **18%** for industrial ratepayers.

Conclusions

The AS1 project as currently approved imposes ratepayer subsidies and costs which have not been demonstrated to meet the cost-benefit requirements nor provide a fair balance of financial risk and rewards between ratepayers and the shareholders of the developer as required by OWEDA. It has also been conclusively shown that the projects awarded in the Third Solicitation also fail to meet the requirements of OWEDA.

This report demonstrates that allowing Atlantic Shores to re-bid the existing AS1 contract and to receive an additional award for AS2 will exacerbate these deficiencies and burden ratepayers with significantly higher above market power prices and subsidies. The cumulative impact of this, in combination with the other approved projects, will raise average rates by more than 33% for all classes of retail customers.

It is important to note that the costs involving the direct ratepayer subsidies and the effect of those higher electric rates on NJ economy in the form of lost jobs and lower wages, as well as lost tourism dollars, all fall disproportionately on lower income residents and communities who can least afford them. Accordingly, no contracts for ORECs could be awarded to Atlantic Shores under the BPU Fourth Solicitation without violating OWEDA and causing grave economic harm to the state.

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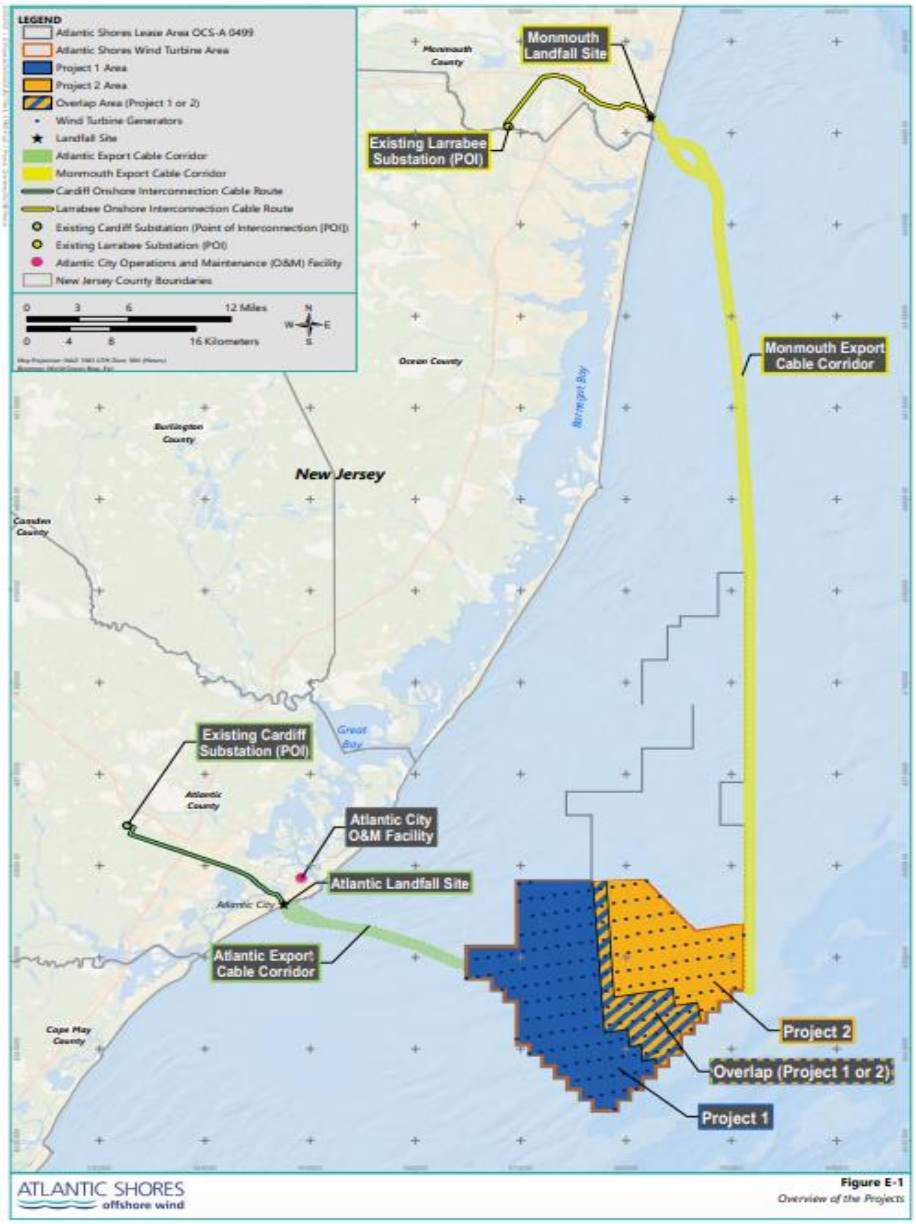
1.0 Introduction

As part of its Fourth Solicitation of offshore wind bids, the NJ Board of Public Utilities (BPU) has received bids for the Atlantic Shores One (AS1) and Atlantic Shores Two (AS2) offshore wind projects, together known as Atlantic Shores South (AS South). The projects are located in lease area OCS-A-0499 located 9 miles off Long Beach Island as shown below.

Figure 1-1 Atlantic Shores South Project



AS1 (1510 MW) has an existing contract for supply of Offshore Renewable Energy Credits (ORECs) while AS2 (1327 MW) unsuccessfully bid in the previous Third Solicitation.

In its Fourth Solicitation Guidance Document[1], BPU is seeking bids for 1200-4000 MW of offshore wind capacity. In addition to bids from new projects, BPU has included provisions allowing projects previously awarded ORECs in the First or Second Solicitations, which includes AS1, to re-bid those same projects and potentially receive even higher OREC prices than currently approved.

Since new awards to AS1 and AS2 have the potential to significantly increase ratepayer subsidies and developer returns on investments, it is the purpose of this report to examine the magnitude of such potential increases and to determine whether they would allow BPU to make those awards in compliance with the requirements of the Offshore Wind Economic Development Act (OWEDA) by which BPU is bound.

2.0 Methodology

In all of its solicitations, the BPU relies in large part on the evaluations by its consultant, Levitan & Associates, Inc. (LAI) of the proposed bids submitted by developers, including the AS1 award in the Second Solicitation[2]. In this study of the AS South projects, we have used the same input values reported and applied in the most recent LAI evaluation of the AS1 bid as well as bids in the Third Solicitation[3] wherever available and deemed reasonable. Where key factors and assumptions have been redacted or unstated, we have used publicly available sources for comparable projects.

However, there are several items where we disagree with the LAI methodology which significantly affect the results. These include:

- LAI has failed to analyze the ratepayer impact of BPU's new inflation adjustment factor which can automatically result in an increase of up to 15% in ratepayer burden and have a significant additional impact on ratepayer costs.
- In determining ratepayer costs, LAI has used an inappropriately high 7% discount factor. A 7% discount factor reflects the developer's weighted average cost of capital and is appropriate for calculating its Internal Rate

[1] NJ Offshore Wind Fourth Solicitation Guidance Document, BPU, March 6, 2024

[2] Evaluation Report New Jersey Offshore Wind Solicitation #2, May 25. 2021, Levitan and Associated Inc.

[3] Evaluation Report New Jersey Offshore Wind Solicitation #3, January 10, 2024, , Levitan and Associated Inc.

of Return (IRR) in support of investment decisions and financial risk to the owners. However, ratepayers are not investors in these projects but are consumers of the power output. Their view of the present value (PV) of future costs to them is much different and they view future dollars as having more value than investors. For ratepayers, standard economic theory would dictate use of a 3% consumption discount rate which is generally used to value future dollars from their perspective[4].

- Levitan's Benefit-Cost analysis methodology, upon which the BPU relies, is flawed in a number of important respects including:
  - Their calculation of environmental benefits is based on the global Social Cost of Carbon (SCC) used in monetizing avoiding hypothetical harm to future worldwide populations from greenhouse gas (GHG) emissions rather than confining consideration of such benefits to those accruing to the state as required by the NJ Offshore Wind Economic Development Act (OWEDA)[5].
  - The SCC factor most recently used by LAI to value CO2 emissions of $190/ton is based on a 2% discount factor which vastly overstates this value and is inconsistent with the 7% value used by them to estimate ratepayer costs. The $/ton value is highly sensitive to the discount rate since it is applied to hypothetical harm to worldwide populations over several centuries in the future. We have consistently applied a 3% discount rate to evaluation of both costs and benefits. A 3% discount rate reduces the SCC value to $51/ton and the purported global benefit by a factor of 3.8.
  - Levitan has failed to include any costs associated with harm to shore tourist economy, commercial fishing or the impact of higher electric rates on the state economy in terms of lost jobs and wages.
  - No consideration is given to the added costs of transmission upgrades which are a direct result and necessary cost of the projects.
  - Levitan has not included the lost revenue from reductions in Regional Greenhouse Gas Initiative (RGGI) allowances that will be a direct result of displacing in-state fossil generation.

In our analysis of potential new OREC awards to AS South we present ratepayer impacts based on more appropriate and inclusive assumptions regarding these matters.

[4] Discounting for Public Benefit-Cost Analysis, Resources for the Future, Qingran Li and William A Pizer, June 2021.
[5] OWEDA, N.J.S.A. 48:3-87.1 to -87.2, L. 2010, c. 57, eff. Aug. 19, 2010; amended by 2019 c. 440, §2,

3.0 Ratepayer Impacts

An independent analysis and review[6] of the BPU consultant's evaluation of the original AS1 proposal reveals that New Jersey ratepayers already would bear a substantial and inordinate burden of additional costs through the lifetime of the proposed generation facility. This additional cost is in the form of above market prices for power embedded in the guaranteed ORECs proposed by the bidder and approved by the BPU. In any new AS South award, it is expected that these prices will be significantly higher and in this section we estimate the ratepayer impacts likely to result from new OREC awards to AS1 and AS2.

The existing BPU order entitles AS1 to collect fees for ORECs produced at $86.62/MWH beginning in 2028 and increasing to $141.92/MWH in 2048. Transmission upgrade costs will add another $6-10/MWH to these guaranteed prices. The levelized cost of energy (LCOE) associated with these existing OREC prices is $106.16/MWH before transmission cost and $114.03/MWH with the added transmission cost.

While the new AS South bids are presently confidential, it may be assumed that they will exceed the OREC prices awarded by BPU to Attentive Energy and Leading Light Wind in January 2024. The LOCE of the Attentive Energy award, without any transmission costs, is $165/MWH. It is is a likely benchmark which an AS bid will again exceed, as it did in its unsuccessful Third Solicitation bid. We estimate that the AS South bid will be at least $180/MWH.

Furthermore, the proposed terms of the Fourth Solicitation allow approved OREC prices to be adjusted up or down by as much as 15% based on a defined inflation adjustment mechanism which is more liberal than in the Third Solicitation and was non-existent in the First and Second Solicitations.

The inflation adjustment is based on recognized official Federal inflation indices for labor, fabrication, steel and fuel prices and allow the base OREC price to be adjusted up or down depending on how much they deviate from the prices at the time of a bidder's best and final offer (BAFO) and a time three years prior to commercial operation. If the BPU approved inflation adjustment formula was calculated over the most recent available three years (2021-2023) the resulting inflation adjustment would be in excess of 26%. In the six months through May 2024, since the Third Solicitation BAFOs were submitted, the calculated index has increased by 2.5% and on that basis the inflation adjustment would add 5%/yr to the OREC price for AS1.Thus with the inflation

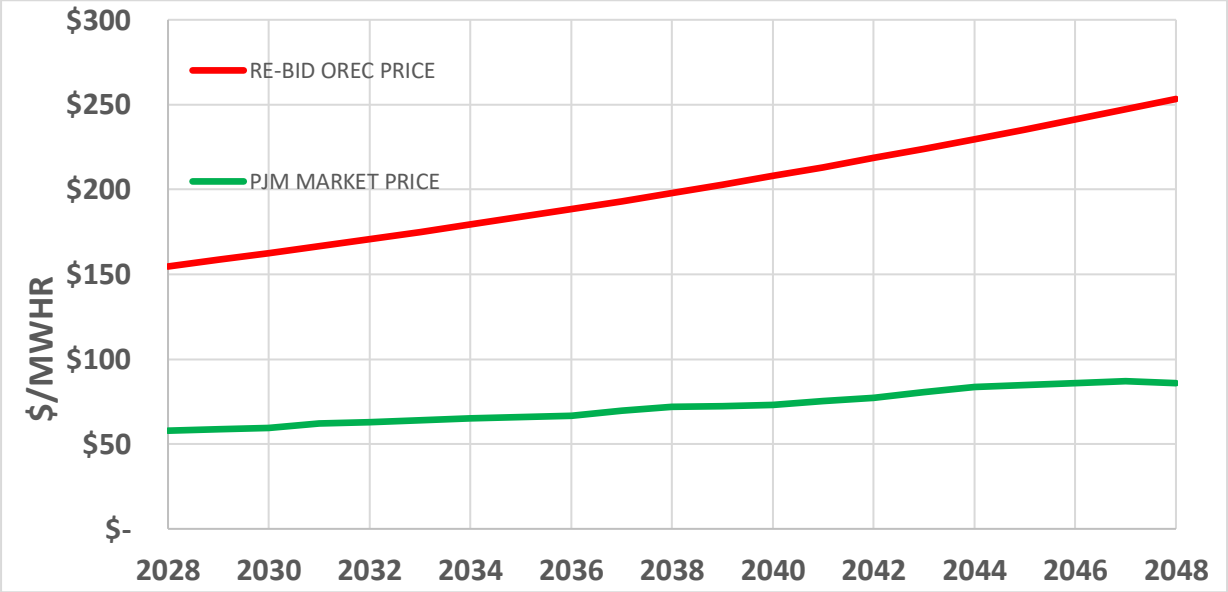
[6] Economic Analysis of the Atlantic Shores Offshore Wind Project, Whitestrand Consulting, August 2023.

adjustment the OREC pricing on an AS1 Re-Bid will most likely be as much as $190/MWH, and with the transmission cost adder, $198/MWH, or an increase of 67% over the corresponding existing OREC price of $114/MWH.

For AS2, the inflation adjustment will occur over at least two years, raising the $180/MWH by 10% to $198/MWH. If there are delays in the CO date, the inflation adjustment could reach 15% and OREC prices exceed $200/MWH. However, for purposes of this analysis we have assumed to adjusted OREC awards will be $198/MWH for both AS1 and AS2.

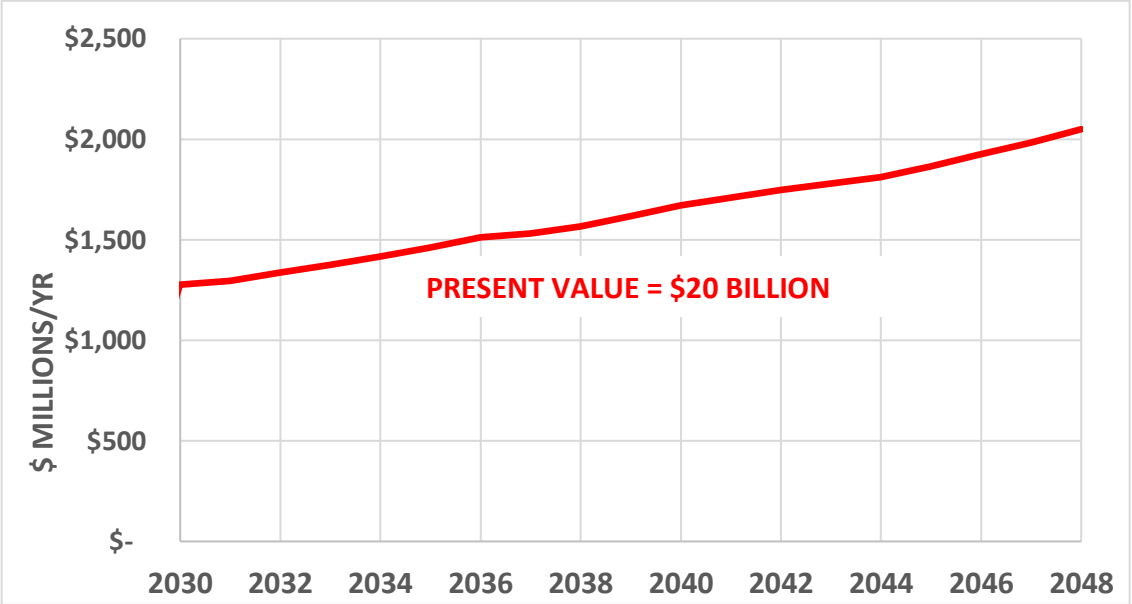
As an offset to the OREC price, the market revenue received from PJM for energy, capacity and Renewable Energy Credits (RECs) will be credited back to the ratepayers. Figure 3-1 below displays how the projected new OREC prices compare with the PJM market price of the offsets based on LAI projections in its evaluation of the Third Solicitation bids.

Figure 3-1. Projected AS South OREC Prices vs PJM Market Price



As can be seen from Figure 3-1 above, on an AS1 Re-Bid, ratepayers will be required to pay **triple the PJM market price, from $122-197/MWH over and above the market price** for power from the AS facility. This in essence represents a ratepayer subsidy for offshore wind generation. As shown in Figure 3-2 below, this added cost burden is substantial on an annualized and lifetime basis.

Figure 3-2. Added Ratepayer Cost for AS South Project



In a new AS South award the ratepayer subsidy almost triples that due to the current AS1 OREC price and would range from over $1.3 billion in the first full year of operation (2030) to over $2 billion million in 2048, totaling $32 billion over the life of the facility. **The 2024 present value (PV) of these above market ratepayer costs is $20 billion.** These values are calculated using an appropriate ratepayer discount factor of 3%.

4.0 Benefit-Cost Analysis

The NJ Offshore Wind Economic Development Act (OWEDA) requires that all proposed projects demonstrate positive economic and environmental net benefits to the state to be considered for an OREC award, but the act does not provide details on how to determine the benefit-cost ratio (BCR). LAI has calculated this ratio as:

$$BCR = \frac{\text{(Ratepayer Offsets + Economic Benefits+ Environmental Benefits)}}{\text{OREC Costs}}$$

The following is a discussion of the various elements involved in this calculation.

Economic Benefits and Costs

The AS1 project as approved claims to have positive Economic Benefits of $3.4 billion in terms of NJ GDP growth and jobs created in the state. These are detailed in the LAI report. Assuming the benefits are related to the size of the projects and number of jobs created, AS2 would add about $3 billion, so the total economic benefits from both projects would be $6.4 billion.

However, in LAI's analysis, no consideration is given to the significant negative economic impacts of the project on beach communities or commercial fishing. The negative impact on tourism and on our shore and fishing communities, is estimated to be in excess of $668 million/year[7]. Over 20 years this has a 2024 PV of $12 billion. This would totally offset any Economic Benefits claimed to contribute to the BCR.

In addition to the negative impact on the NJ tourism and fishing economy, raising electric rates will have a damaging effect on the overall state economy by reducing employment and wages, similar to the effect of raising taxes. A 2011 study by the Beacon Hill Institute[8] determined that raising electric rates by 2% as a result of offshore wind ratepayer subsidies would result in the loss of 2219 jobs and reduce average wages by $111 per year. This in turn would reduce total disposable income in the state by $330 million/yr. The Present Value in 2024 of this lost income over 20 years is $7 billion. As discussed in

[7] Potential Economic Losses of Reduced Tourism Attributable to Proposed Wind Turbines in Long Beach Island, NJ, Tourism Economics, March 2024.

[8] "The Cost and Economic Impact of New Jersey's Offshore Wind Initiative", Beacon Hill Institute at Suffolk University, June 2011

Section 6.1 below, AS OREC prices would raise average rates by 15%, this results in a PV cost of $54 billion.

As noted, the effect of raising electric rates has a similar impact on the state economy as an increase in taxes. The AS South project will raise residential average rates by $1.2 billion/yr which is about 0.15% of state GDP[9]. Studies[10] show that tax increases reduce GDP by a factor of 2.5 on a percentage basis. Thus, a rate increase of 0.15% of GDP will reduce state GDP by 0.38% or $3.8 billion/yr. The 2024 PV of such economic loss over 20 years is also $54 billion and so confirms the estimate based on the 2011 Beacon Hill Institute study.

This is in fact a conservative estimate since it does not reflect the effect of raising commercial or industrial rates on the GDP. Thus, the economic harm caused by raising retail electric rates is a very significant additional indirect economic cost of the project.

Transmitting wind power from offshore turbine locations across the state to the PJM grid will entail significant costs to install and upgrade transmission lines, substations, switchyards, HVAC/HVDC converter stations, and associated relays and other components. As shown on Figure 1-1 AS1 will connect to the grid via an HVAC cable making landfall at Atlantic City and proceeding inland to the Cardiff substation. As noted, the costs of this interconnection will add $8/MWH to OREC costs and has been reflected in the OREC pricing and rate impact analysis.

In the case of AS2, the project will utilize the Larabee Tri-Collector (LTC) solution in which 6400 MW from four offshore wind projects will make landfall at Sea Girt and proceed inland to the Larabee substation in Howell TWP. The costs of the LTC solution will be recovered through transmission fees, not through OREC prices. Thus, they are an added cost that must be considered in the benefit- cost analysis.

To date BPU has authorized $1.2 billion for upgrading of existing transmission links for the LTC solution but has not yet awarded contracts for the onshore cable vaults or other elements of the Larabee connection. In fact, bids submitted by Attentive and other bidders for the cable vaults were rejected as being too costly. So at this point the total cost of transmission upgrades are unknown but likely to be substantial.

[9] In 2023 NJ personal income tax collected was $55 billion and GDP was $810 billion.
[10] Tax increase

Bids submitted for the LTC solution transmission upgrades to allow 6400MW of offshore wind to utilize that transmission pathway averaged $1.3 billion/MW in 2021$[11]. If we allocate that cost index to the 1327 MW of the AS2 project, it represents an additional $1.7 billion of costs which must be included in the benefit-cost accounting, which we have done.

Environmental Benefits and Costs

With respect to the Environmental Benefits, LAI has applied the US EPA's Interagency Working Group (IAWG) social cost of carbon (SCC)[12] and Technical Support Document[13] to estimate the value of perceived benefits. The use of these reports in economic or regulatory decision-making is highly controversial and the subject of court challenges in several states. Indeed, the IAWG document provides for a wide range of values, depending on very subjective judgements of factors such as the rate at which potential social costs to future generations of present-day carbon emissions should be discounted to current dollars.

As a result, the value derived from the IAWG document as applied by the Federal Environmental Protection Agency (EPA) has varied from $2/Ton during the Trump administration to $190/Ton now being proposed by the current administration – a near hundred-fold increase, reflecting the reality that putting a monetary value on the social cost of carbon is a political rather than a scientific exercise.

The factor most recently used by LAI to value CO2 emissions of $190/ton is based on a 2% discount factor which vastly overstates this value and is inconsistent with the 7% value used by them to estimate ratepayer costs. The $/ton value is highly sensitive to the discount rate since it is applied to hypothetical harm to worldwide populations over several centuries in the future. In our benefit-cost calculations, we have consistently applied a 3% discount rate to evaluation of both costs and benefits. A 3% discount rate reduces that value to $51/ton and the purported global benefit by a factor of 3.8.

Furthermore, and most importantly, the OWEDA mandates that, in order to approve an offshore wind project for OREC award, the BPU must find that the

[11] NJ State Agreement Approach for Offshore Wind Transmission: Evaluation Report, Bratelle Group, October 26, 2023.

[12] "Report on the Social Cost of Greenhouse Gases: Estimates Incorporating Recent Scientific Advances" U.S. Environmental Protection Agency, November 2023.

[13] U.S. EPA, "Technical Support Document Estimating the Benefit per Ton of Reducing Directly-Emitted PM2.5, PM2.5 Precursors and Ozone Precursors from 21 Sectors," January 2023

cost-benefit analysis for the project "demonstrates positive economic and environmental net benefits to the State" (emphasis added). Therefore, any consideration of Environmental Benefits of the AS1 project of avoided carbon emissions must be confined to those affecting NJ residents, businesses, or institutions. The values proposed by the IAWG are intended to reflect global impacts of carbon emissions and are thus inappropriate and not suitable in any case for representing only state-wide impacts. If we scale these purported global benefits down to state-wide benefits only, by using any reasonable measure of relative impact on the state to the entire world (GDP, population, land area, shoreline miles, carbon emissions, etc.), the total averted state social cost of emissions reduced by AS1 is far less than 1% of the global benefit. We have conservatively assumed that 0.12%[14] of global values accrue to the state of NJ. The resulting insignificant value of $20 million is more than offset by lost revenue accruing to the state from auctions of RGGI allowances from the emissions displaced by AS which total $4.7 billion in 2024 PV.

Table 4-1 below is a comparison of the benefit-cost analysis for the combined AS South project and as allocated to its AS1 and AS2 components.

Table 4-1 Benefit-Cost Summary for AS South Project

	AS1	AS2	Combined
Benefits ($PV Billions)			
Energy, Capacity and REC Credits	5.11	4.50	9.61
Economic Benefits	3.40	3.00	6.40
Avoided Emissions (per IAWG)	0.01	0.01	0.02
Total Net Benefits	8.52	7.51	16.03
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Total Costs	52.28	49.56	101.84
Net Benefits/ (Costs) ($PV Billions)	**(43.76)**	**(42.05)**	**(85.81)**
Benefit/Costs Ratio	**0.16**	**0.17**	**0.16**

[14] The population of NJ is 9.3 million (or 0.12%) compared with over 7.9 billion worldwide..

As indicated, when economic costs are included and purported environmental benefits limited to the state**, the PV costs of the AS South project exceed any potential benefits by $86 billion** and **the BCR is no more than 0.16 (i.e., costs outweigh benefits by a factor of 6 to 1).**

Even without including the economic cost of the project, the AS South OREC payment costs alone exceed any benefits by more than $13 billion and the BCR would be no more than 0.55. Thus, a BCR less than 1.0 cannot be achieved. Furthermore, there is neither a net economic nor a net environmental benefit as required by OWEDA.

5.0 Project Developer Economics

A developer of a power generation project is entitled to realize a reasonable rate of return on its investment. However, the magnitude of the return is a function of the risk assumed by the developer. The greater the risk, the higher the expected return, and vice versa – the lower the risk, the lower a return expected or allowed.

The NJ legislature has recognized that the financial risk of offshore wind projects must be limited, in order to attract developers to bid on such projects. A key feature of this risk mitigation is the guarantee of revenue for power delivered through the establishment of OREC prices throughout the operating life of the facility. We have previously shown that the OREC prices approved by the BPU for the AS1 project are well in excess of market prices. Thus, they substantially reduce the risk to the developer. This price guarantee allows the developer to secure equity investors and project financing at a reduced cost of capital, lowering their up front and debt service costs throughout the life of the project.

In addition to this, the Federal government has provided financial incentives through tax credits which greatly enhance the potential for positive returns on investment for such projects. The Inflation Reduction Act (IRA) enacted in 2022 offers offshore wind projects an Investment Tax Credit (ITC) of 30% of the capital cost of the project to be collected when the facility becomes operational. In addition, a developer may qualify for additional ITC bonuses of 10% each for using domestically sourced materials and siting onshore facilities in economically disadvantaged communities.

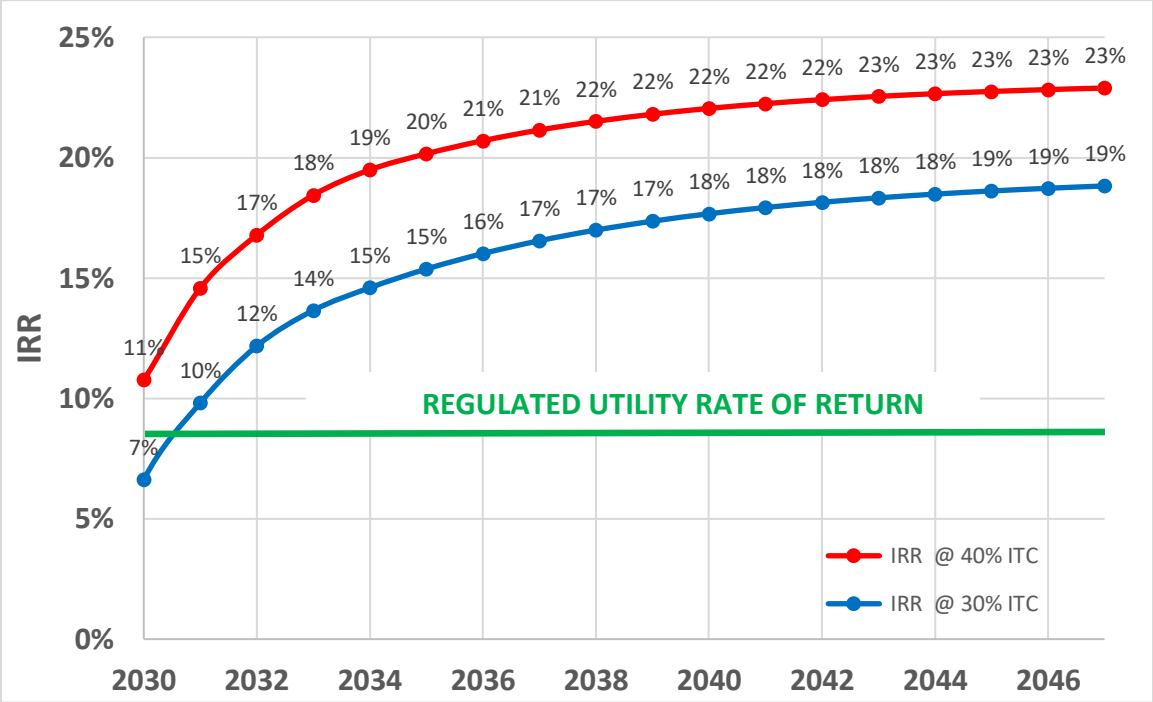
In its bid AS1 was required to submit detailed information on its projected costs of the project and its resulting Internal Rate of Return (IRR) which represents its return on investment. This information is necessary to determine whether the approved OREC prices are reasonable given the projected developer's costs and assumed financial risks.

However, these project financial details detailed have been redacted from the LAI evaluation for AS1 and are not available for the current Fourth Solicitation bids, so we are unable to review and comment on whether they are in fact reasonable and justify the large ratepayer subsidy built into the OREC pricing. We therefore have no alternative than to conduct an independent financial analysis, based on available information for similar projects.

Using expected current capital costs, financing terms, operating, maintenance and decommissioning costs and the revenue streams resulting from OREC

production and tax credits, we calculated the IRR based on the expected cash flow over the life of the project. The result of our analysis is presented in Figure 5-1 below for a potential AS South award.

Figure 5-1. Developer's AS South Project Internal Rate of Return



We have assumed, as does LAI in its bid evaluations, that available Federal tax credits have been included as on offset to capital costs of the project, and thus passed through to ratepayers as reflected in the proposed all-in OREC prices for the project. With the passage of the Inflation Reduction Act (IRA) in 2022, a 30% Federal ITC is in effect for offshore wind projects. As indicated in Figure 5-1 above, with a 30% ITC, the owners of **AS South will realize an increasing return, rapidly approaching 19%** by the end of its economic life and through decommissioning.

The IRA provides for an additional bonus ITC of 10%, for meeting domestic content requirements or having onshore facilities in an energy community. In March the IRS released new rules[15] for qualifying for the 10% energy community bonus credit. Now the developer merely has to locate data centers supporting construction or operation in a nearby port facility. This will make it relatively easy for AS South to receive the 10% bonus ITC. **If as expected AS South does in fact qualify for the 10% bonus ITC, their IRR will increase to 23%**. Under current NJ law such an increase in available tax credits must

[15] IRS Notice 2024-30, March 22, 2024.

also be passed through to ratepayers and not contribute to greater return to the developer.

The BPU limits returns to regulated utilities for similar projects to about 9%. In view of the OREC price guarantees and tax credits available, we believe that a return of 19-23% is unduly generous and that the developer is being too richly rewarded for the level of risk assumed at expense of ratepayers who are bearing billions in present value of added costs to support the developer's return on investment.

6.0 Cumulative Impacts

As discussed, each project approved by BPU for award of ORECs involves subsidized costs that incrementally increase ratepayer costs and bills for all classes of retail customers. While BPU provides an estimate of the ratepayer impact of each individual project, it has not acknowledged or made known the cumulative impact of the combined projects together with prior awards under earlier solicitations. In this section we examine the cumulative impact of all such projects awarded to date, and of a potential new OREC award for AS South.

In January 2024 the Third Solicitation awarded an additional 3742 MW to Attentive Energy (1342 MW) and Leading Light Wind (2400 MW)[16]. A new award to AS South would add another 2837 MW to the approved projects. The following sections present the combined impact of the total 6579 MW of offshore wind projects approved by BPU in terms of total and PV ratepayer subsidies and increases in retail electricity bills for residential, commercial and industrial customers over the period 2028-2047.

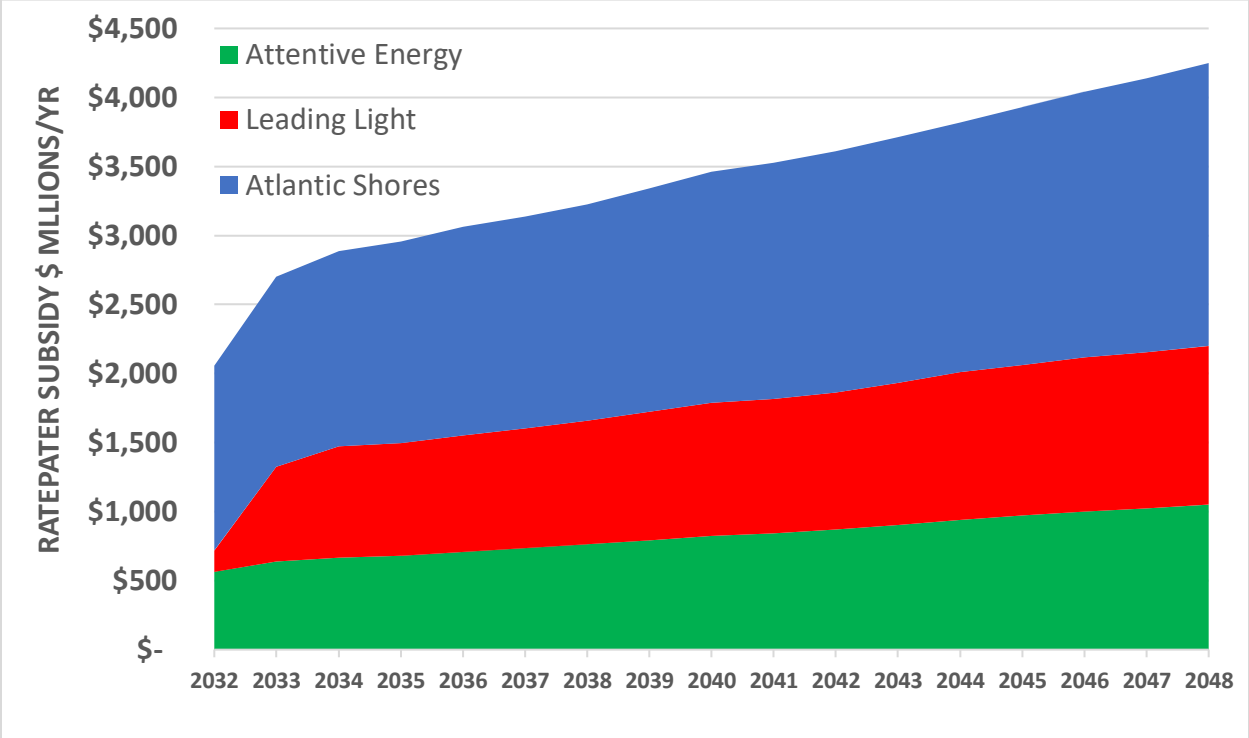
6.1 Ratepayer Subsidies

Based on our analysis of the BPU approved OREC prices for Attentive Energy and Leading Light Wind Projects[17] together with the corresponding results for AS South project, including inflation adders, Figure 6-1 shows the cumulative annual ratepayer subsidy.

[16] BPU Orders of January 24, 2024 Docket No. Q022080481

[17] Economic Analysis of Attentive Energy and Leading Light Offshore wind Projects, Whitestrand Consulting, April 2024.

Figure 6-1 Cumulative Annual Ratepayer OREC Subsidies



As indicated, the combined ratepayer cost embedded in the OREC prices for these three projects increases from $2 billion in 2032 to over $4 billion by 2048. The total subsidy over the operating period of these projects is over **$65 billion**, which has a 2024$ PV of **$48 billion**.

6.2 Customer Bill Impacts

The rate subsidies embodied in the above market OREC prices will progressively impact retail customers bills as the offshore wind projects begin operation in 2028. In its evaluation of bid proposals for the Second and Third BPU Solicitations, LAI has estimated the increase in average monthly customer bills for residential, commercial and industrial customer for the three approved projects.

Using the same methodology as LAI, but applying the higher subsidy costs we have discussed and provided in the previous sections, we have also estimated the monthly bill increase for each of the projects. Table 6-1 below presents the results of our analysis. We have displayed the increase in annual bills in $/yr and on a percentage increase basis.

Table 6-1 ECONOMIC IMPACT OF NJ WIND PROJECT OREC COSTS ON RETAIL CUSTOMER BILLS

	Attentive Energy	Leading Light Wind	AS South	Combined
Ratepayer Bill Impact ($/yr)				
Residential	$116	$131	$224	$472
Commercial	$994	$1,126	$1,923	$4,043
Industrial	$8,377	$1,923	$16,206	$34,068
Ratepayer Bill Impact (% Increase)				
Residential	7%	8%	**13%**	**28%**
Commercial	8%	10%	**16%**	**35%**
Industrial	10%	16%	**18%**	**39%**

As shown, the cumulative impact of these three projects result in significant increases in customer bills, averaging 32%. AS South alone will raise average bills by 15%. These values are above that permitted by NJ law[18] for other renewable energy generation sources which are limited to no more than a 7% increase in customer rates.

The combined impact of these three projects will raise electric bills by **28%** for residential**, 35%** for commercial and **39%** for industrial customers.

[18] NJSA 48:3 – 18.d(2)

7. 0 Conclusions

The AS1 project as currently approved imposes ratepayer subsidies and costs which have not been demonstrated to meet the cost-benefit requirements nor provide a fair balance of financial risk and rewards between ratepayers and the shareholders of the developer as required by OWEDA. It has also been conclusively shown that the projects awarded in the Third Solicitation also fail to meet the requirements of OWEDA.

This report demonstrates that allowing Atlantic Shores to re-bid the existing AS1 contract and to receive an additional award for AS2 will exacerbate these deficiencies and burden ratepayers with significantly higher above market power prices and subsidies. The cumulative impact of this, in combination with the other approved projects, will raise rates by more than 33% for all classes of retail customers.

It is important to note that the costs involving the direct ratepayer subsidies and the effect of those higher electric rates on NJ economy in the form of lost jobs and lower wages, as well as lost tourism dollars, all fall disproportionately on lower income residents and communities who can least afford them. Accordingly, no contracts for ORECs could be awarded to Atlantic Shores under the BPU Fourth Solicitation without violating OWEDA and causing grave economic harm to the state.

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The Author

Edward P. O'Donnell is a principal in Whitestrand Consulting LLC. He has spent 35 years in the nuclear power industry as an engineer, manager and executive with responsibilities for design and licensing of numerous plants in the US and abroad. He was also responsible for corporate planning and rate matters for a NJ nuclear utility and has testified in utility rate proceedings before the NJ BPU.

He was responsible for managing the successful sale of nuclear units in NJ and PA and as a consultant for advising clients on the sale and purchase of nuclear plants. In this role he forecasted future costs and performance of plants for re-financing as merchant power suppliers in a de-regulated electrical energy market and performed analyses of the economic viability of nuclear plants in comparison with alternative fossil and renewable energy facilities.

Mr. O'Donnell holds an M.S. in Nuclear Engineering from Columbia University and has been a licensed Professional Engineer in NJ. He is also a registered Enrolled Agent, authorized to represent individual and business entities before the IRS on tax matters.

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