

## **Offshore Wind Tax Credit Program - Net Economic Benefit Analysis Overview**

### **Introduction**

Governor Phil Murphy signed the New Jersey Economic Recovery Act of 2020 (ERA) into law on January 7, 2021. The ERA creates a package of tax incentive, financing, and grant programs that will address the ongoing economic impacts of the COVID-19 pandemic and build a stronger, fairer New Jersey economy. Included in the ERA are updated statutory requirements and provisions within the Offshore Wind Economic Development Tax Credit Program (OSW Tax Credit Program), which is designed to spur employment growth and offshore wind supply chain development as a result of capital investment in land-based offshore wind industry projects.

A key statutory requirement within the OSW Wind Tax Credit Program is that the Authority must ensure fiscal prudence by determining that the award of tax credits creates a net positive economic benefit to the State. For prior programs, the Authority relied upon a proprietary model that was developed by a third party but largely managed in-house. In the interest of greater transparency and consistency the Authority has determined the best approach for new programs for such analysis is solely upon an external third-party model that would not need to be updated or maintained by the NJEDA.

**To increase transparency and consistency, NJEDA staff determined that it would be important to utilize a third-party economic development model that is widely known, understood and utilized at the state, federal, and international levels. In addition, after evaluating several widely-known, national level models, staff determined that utilizing a tool that was more easily understood by a broader set of stakeholders would be beneficial. Based on a thorough analysis of available alternatives that would meet the Authority's requirements, staff previously proposed the use of the IMPLAN model to calculate the expected net economic benefit from projects awarded within the ERA programs, and the Board approved a specific approach within the Emerge program at the Authority's June 2021 Board Meeting.. This memo provides background (*provided previously with approved Emerge Rules where noted*) on the fundamental theory underpinning IMPLAN's model, the history of EDA's work with the net benefit test, a brief overview of IMPLAN and its features, and an overview of the application of IMPLAN to calculate the net benefit for the OSW Tax Credit Program. Overview & History of Input-Output Analysis– (*provided previously with Approved Emerge Rules*)**

IMPLAN's model is built on a macroeconomic analysis known as Input-Output analysis (I-O), which estimates the interdependence between economic sectors and industries. A product of I-O is an input-output table, which is a data matrix that shows the inputs from industries and sectors of the economy necessary to create the output of a given industry. As an example, Table 1 shows the intermediate input (inputs from other firms and industries) and within-firm factors of production (calculated as income going to labor, capital, and taxes) that go into producing an industry's output.

**Table 1 – I-O for US Manufacturing in 2019, millions of dollars**

	<b>Commodities/Industries</b>	<b>Manufacturing</b>
A	Agriculture, forestry, fishing, and hunting	\$322,670
B	Mining	\$371,488
C	Utilities	\$55,663
D	Construction	\$14,197
E	Manufacturing	\$2,458,644
F	Wholesale trade	\$25,085
G	Retail trade	...
H	Transportation and warehousing	\$54,383
I	Information	\$22,650
J	Finance, insurance, real estate, rental, and leasing	\$108,329
K	Professional and business services	\$373,668
L	Educational services, health care, and social assistance	\$146
M	Arts, entertainment, recreation, accommodation, & food services	\$12,127
N	Other services, except government	\$21,587
O	Government	\$4,698
<b>Sum, A-O Total Intermediate</b>		<b>\$3,913,382</b>
P	Compensation of employees	\$1,131,337
Q	Other taxes on production	\$60,414
R	Gross operating surplus	\$1,125,415
<b>Sum, P-R GDP</b>		<b>\$2,317,167</b>
<b>Total industry output (Intermediate + GDP)</b>		<b>\$6,230,548</b>

This data provides two important sources of information. One is, when an industry's output is "shocked," or increased/decreased by a specified amount, an analyst can estimate the impact of that shock on all other associated industries and sectors of the economy. Another important source of information is the understanding and ability to estimate the ripple effects of any one shock through all the associated industries and sectors of the economy. These estimated impacts are known as multipliers, and they estimate the total change in output across all industries and sectors expected when a specified industry's final demand is shocked.

Moreover, these multipliers can be broken down into three categories, typically referred to as direct, indirect, and induced impacts, which are explained as follows:<sup>1</sup>

- Direct effects -- occur directly from the focus industry's shock.
- Indirect effects – occur from impacts on other industries. They are akin to second-round impacts. For example, if we shock a pharmaceutical manufacturer, a second-round impact would be from an industry that produces an intermediate good for the pharmaceutical industry, such as a chemicals manufacturer. The economic impact of the shock on the chemicals manufacturer would be considered an indirect effect.
- Induced effects – occur through household spending from labor income generated by the shock. These effects are created by the spending of employees in the directly and indirectly impacted industries.

Expanding on the pharmaceutical industry shock explained above, using an economic impact model, we can estimate how this one focused shock impacts the economy through areas such as employment, consumer and industrial demand, and State tax revenues

<sup>1</sup> <https://blog.implan.com/understanding-implan-effects>; <https://www.investopedia.com/terms/i/input-output-analysis.asp>

**IMPLAN– (provided previously with Approved Emerge Rules)**

IMPLAN was created in the 1970s, when the National Forest Management Act required the United States Forest Service to prepare a plan for alternative land management strategies and potential resource outputs. IMPLAN, short for “impact analysis for planning,” estimated the economic impacts of those resource outputs on local communities.<sup>2</sup> IMPLAN’s data is based on federal data sources from the Bureau of Labor Statistics, Bureau of Economic Analysis, and the Census Bureau.<sup>3</sup> A distinguishing feature of IMPLAN is that it estimates tax revenue impacts from events. Taxes by level of government are sourced from the Census Bureau’s Annual Survey of State and Local Government Finances, state government tax collections, Census of Government Finance, and the Bureau of Economic Analysis’s National Income and Product Accounts.<sup>4</sup> The taxes are not estimated based on an analysis of what the specific company may pay, but is an estimate based on the general data. Therefore, the model does not incorporate such details about the company as individual salary or whether a company is already in the State.

IMPLAN’s methodology for tax estimates has been used by other states to evaluate their incentive programs as well as industries – examples include the following:

- Nevada Governor’s Office of Economic Development, which used IMPLAN to determine tax revenue estimates for the Tesla Gigafactory project in 2014<sup>5</sup>
- Oklahoma Incentive Evaluation Commission, which issued a report in 2016 on the effectiveness of several incentive programs and used IMPLAN to estimate the economic impacts of projects receiving tax credits<sup>6</sup>
- The Louisiana Economic Development Office & Legislative Fiscal Office has used IMPLAN to estimate the economic and fiscal impacts of entertainment-related industries in Louisiana<sup>7</sup>
- Maryland’s Department of Commerce has used IMPLAN to estimate the economic impacts of incentive programs in annual reporting<sup>8</sup>

IMPLAN is also currently used by the California Governor’s Office of Planning and Research, the California Research Bureau, and the Washington State Department of Transportation.

IMPLAN also counts federal agencies as clients, including the Bureau of Ocean Energy Management, NASA, US Department of Agriculture, US Department of Interior, and the US Geological Survey. IMPLAN’s model outputs have been published in peer-reviewed academic journals and professional publications and have been used by economists for decades.<sup>9</sup>

**IMPLAN & Net Benefit Test Application**

IMPLAN provides flexibility to model impacts at different levels of geographic region, including at the state, county, Metropolitan Statistical Area (MSA), ZIP code, and congressional district. Given the nascent nature

<sup>2</sup> <https://www.implan.com/history/>

<sup>3</sup> <https://implanhelp.zendesk.com/hc/en-us/articles/115009674448-IMPLAN-Data-Sources>

<sup>4</sup> <https://implanhelp.zendesk.com/hc/en-us/articles/115009674528-Generation-and-Interpretation-of-IMPLAN-s-Tax-Impact-Report>

<sup>5</sup> Economic Impact of Tesla on Washoe and Storey Counties, September 2014

<sup>6</sup> State of Oklahoma Incentive Evaluation Commission, Tax Incentive Evaluation Report, 2016

<sup>7</sup> BaxStarr Consulting Group LLC, Fiscal & Economic Impact Analysis of Louisiana’s Entertainment Incentives.

Prepared in conjunction with the Louisiana Economic Development Office of Entertainment Industry Development & the Legislative Fiscal office, April 2011

<sup>8</sup> Fiscal Year 2017, Consolidated Incentives Performance Report, As required by the Maryland Jobs Development Act Economic Development Article 2.5-109, February 2018, Maryland Department of Commerce

<sup>9</sup> <https://implanhelp.zendesk.com/hc/en-us/articles/360044985833-About-IMPLAN>

of the offshore wind industry and related supply chains in the State, in the interest of more robust data sets state level multipliers will be used.

IMPLAN has several types of economic shocks that users can model, including industry output, industry employment, commodity output, and employee compensation. For the purposes of the NJEDA's net benefit test, the Authority will be shocking **industry employment** and **industry employee compensation**, as that information will be submitted by applicants when applying for the OSW Tax Credit program and most closely align with outcomes to be directly incented by an award.

Critical to this aspect of the net benefit test is specifying an industry, as the Input-Output analysis performed within IMPLAN relies upon sets of industry level multipliers when modeling economic impacts of the company's expected business activities. These industry determinations are made using the North American Industry Classification System (NAICS), which is used by Federal statistical agencies in classifying business establishments for the purpose of collecting, analyzing, and publishing statistical data related to the U.S. business economy. Applicants will provide a NAICS code at application and Authority staff will evaluate this NAICS code for appropriateness based upon an understanding of the business and the project in question. Where appropriate, staff may use additional NAICS codes to what is supplied by the applicant, effectively modeling average effects across multiple industries in IMPLAN. In limited instances where the business functions at the project in question are dramatically different than those inherent to the supplied NAICS code, a NAICS code more appropriate to the business functions in question will be used.

Regarding employment, the analysis will include the number of new full-time jobs being directly incented by the award and the total payroll associated with these jobs. Staff will also make net benefit test adjustments for businesses growing jobs in a phased manner over the eligibility period as is reflected in the updated OSW Tax Credit Program requirements, by running the model for each year of the project separately to account for the growing number of jobs. The IMPLAN model will further adjust these figures to account for expected seasonal or additional part-time workers that would be associated with the project based upon its industry. If at certification, any one of the key input factors to the model (i.e., the actual payroll, the number of full-time jobs, or the capital investment of the project) has been reduced by more than ten percent below the respective level provided by the applicant at approval, the net benefit analysis will be performed again, and the award may be adjusted down accordingly.

For each applicant, two scenarios will be run: the **ongoing business activity** and **up-front construction** associated with the business activity. IMPLAN's model includes estimates of federal, state, county, and municipal taxes. **Only the model's estimate of state taxes will be used to estimate the benefit to New Jersey**, as the ERA requires the determination of the net benefit to the State. Additionally, the vast majority of the tax benefit to New Jersey occurs at the state level. **For the ongoing business activity, only direct and indirect state taxes will be used. For the construction work, direct, indirect, and induced state taxes will be used.**

In determining whether the company meets the net positive economic benefits test, the IMPLAN model will include the direct benefits to the State, including local taxes that may benefit the State. The model will also consider indirect benefits caused by the business's location in New Jersey but will not consider indirect benefits if a business is including any new full-time employees resulting from an equipment supply coordination agreement in the calculation of its new full-time employees.

The net economic benefit will be calculated for the eligibility period of the project. The OSW Tax Credit rules also allows for the net economic benefit to be calculated for up to 20 years based on the length of a business's commitment to maintain a project at a qualified wind energy facility, with the award of tax credits subject to recoupment provisions should they fall short of their commitment.

The Authority will perform this analysis in terms of net present value, i.e., the benefit in the future should be expressed in dollars today. Additionally, the discount will reflect the uncertainty of the company's

commitment after the commitment period expires. As such, the Authority will discount expected future revenues to the State accordingly. This, in practice, is a two-step process. First, given the IMPLAN model estimates a one-time (essentially, the 1<sup>st</sup> year) impact on government revenue, the Authority must estimate the growth of future annual revenues. The Authority does this by growing future revenues by an estimated rate of inflation. **The inflation rate will be set based on a five-year mean of the Personal Consumption Expenditures Price Index as provided by the Survey of Professional Forecasters adjusted annually; initially this is set at an annualized rate of two percent.** Second, the Authority must then discount these future revenues. **To calculate the discount rate, staff starts with an industry accepted net present value discount rate. To account for the significant risk and uncertainty associated with revenues in the furthest years out, the discount rate is increased by two percent.** Tax revenues resulting from construction expenditures and upfront costs do not need to be discounted as they would occur prior to the issuance of any tax credits awarded to a company.

**In certain instances, taxes at the local level or with inherently local implications, impact the State and thus such taxes would be factored into the economic benefit analysis.** The local taxes that could be considered are property taxes from new construction and local payroll taxes. As both of these local tax revenues offset State funds needed for municipal aid and/or appropriations to reduce property taxes, they may directly benefit the state thus making them appropriate to be considered in this analysis. To include such local property taxes, the business will need to provide a PILOT agreement, real estate appraisal, preliminary assessment from tax assessor, or any other relevant third-party document. Conversely, the State's Urban Enterprise Zone program affords projects located in certain geographies an exemption from a portion of the State sales tax associated with a construction project, as such where this is the case the analysis will be adjusted accordingly to best reflect actual sales tax revenues to the State from the related construction project.

**The OSW Tax Credit rules require projects to create positive economic benefit to the State equal to 110 percent of the approved tax credit allocation amount for the period equal to 75 percent of the useful life of the investment.**