ADVISORY OPINION
ON THE ECONOMIC DEVELOPMENT BENEFITS OF THE PROPOSED BLOCK ISLAND WIND FARM

Prepared for the

Rhode Island Economic Development Corporation

by

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Introduction and Executive Summary

This advisory opinion was prepared by Levitan & Associates, Inc. ("LAI"), at the request of the Rhode Island Economic Development Corporation (the "Corporation") to assist the Corporation in evaluating the direct and indirect economic benefits that the Block Island Wind Farm ("BIWF") would provide to Rhode Island ("RI"). The Corporation is required to address these economic development benefits under the provisions of RI General Law § 39-26.1-7, excerpted below:

> (c) The commission shall review the amended power purchase agreement and shall approve it if:
>
> (iii) The amended agreement is likely to provide economic development benefits, including: facilitating new and existing business expansion and the creation of renewable energy jobs; the further development of Quonset Business Park; and, increasing the training and preparedness of the Rhode Island workforce to support renewable energy projects.

BIWF would be the nation's first offshore wind project. As discussed in further detail below, we calculated economic development benefits attributable to the proposed BIWF project during the construction period and over the 20-year term of the Amended Power Purchase Agreement between the Narragansett Electric Company d/b/a/ National Grid ("Narragansett Electric") and Deepwater Wind Block Island, LLC ("Deepwater"), as filed with the Rhode Island Public Utilities Commission on June 20, 2010 (the "Amended PPA").

For our analysis, we relied on the IMPLAN model, a standardized regional input-output model that allowed us to quantify the "multiplier effects" associated with BIWF construction and operating activities. These activities, and the associated exchange of goods and services, create earnings for construction and other workers that in turn generate disposable income in RI and the surrounding communities.

Based on the results of our analysis, we conclude that the overall RI economic benefits attributable to BIWF are estimated to be $107 million in constant 2010 dollar terms and in $92 million in net present value ("NPV") terms as of January 1, 2013 using a 7.2% discount rate. These economic development benefits would be centered on the Quonset Business Park during the BIWF construction period and on Block Island during the Amended PPA term. We also estimated the economic benefits attributable to the RI Sound project, a significantly larger offshore wind project with correspondingly larger economic benefits, and generally address potential economic development benefits from other offshore wind projects in the future.

In addition to the benefits that we quantified, we also addressed several qualitative economic development benefits, including facilitating business expansion opportunities, creating RI jobs in the renewable energy industry, the further development of Quonset Business Park, and training the RI workforce to support renewable energy projects. Each of these qualitative benefits provides additional rationale for further RI-based investment in the renewable energy industry. As explained below, our analysis finds that BIWF and the Amended PPA agreement is likely to meet the requirements of RI General Law § 39-26.1-7 (c).

Methodology

IMPLAN is a proprietary economic modeling system with an accompanying database that covers 440 industries. The regional set of multipliers in IMPLAN provides an empirical basis to track the sequence of transactions that support the direct, indirect, and induced regional economic benefits. The direct effects are the changes in the industry used to describe the events being analyzed, *e.g.* new employees in construction, project management, and engineering. Indirect effects are the changes in inter-industry purchases as they respond to the new demands of the directly affected industries, *e.g.* food services, insurance, etc. Induced effects reflect changes in spending from households as income/population increases or decreases due to the changes in production, *e.g.* retail

stores, transportation, etc. The IMPLAN model is described in more detail in Attachment 1.

IMPLAN requires expenditure data that approximates the expected engineering, material, and office costs as well as labor requirements for proposed infrastructure projects to estimate the economic impact within the RI economy. IMPLAN captures all monetary transactions for expenditures and consumption to estimate the effects of a change in one or several economic activities on a regional economy. Under the IMPLAN framework, these economic activities are divided into three components: Labor Income, Total Value Added, and Output. Labor Income is developed using employment data for jobs in each industry. Total Value Added includes employee compensation, proprietary income, other property type income, and indirect business taxes. Output represents the dollar value of an industry's total production.[1] The Value Added results provide the best indications of benefits to the RI economy.

Economic Development Benefits of BIWF

Facilitating new and existing business expansion and the creation of renewable energy jobs

BIWF's direct benefits include Deepwater's hiring administrative staff in Providence, leasing space and hiring labor for fabrication and other activities at Quonset Business Park, having an operating staff on Block Island, and other in-state business activities. Indirect impacts include spending and tax payments by those individuals in the RI economy. Qualitative impacts include positioning RI to reap economic development benefits from the anticipated growth of the nascent offshore wind industry in the New York and southern New England region.

[1] As stated above, Total Value Added consists of the four subcomponents that characterize the local RI economic benefits. In contrast, Industry Output, also provided by IMPLAN, represents the value of an industry's total production which is comparable to gross domestic product impact and thus may include the ripple effects that benefit other states as well.

Deepwater provided LAI with the raw cost and employment data for BIWF needed to run IMPLAN, provided as Attachment 2. The cost data was broken down into four basic categories: engineering, fabrication and supply, installation, and owner costs of project management, insurance, development, and financing. BIWF's total cost of $205.4 million was divided between $42.4 million in RI and $163 million in other states. Relatively small amounts of engineering and fabrication costs, 10% and 8% respectively, would be in RI. Relatively high amounts of installation and owner costs, 50%, would be in RI. Cost data was not broken out by year. In addition to BIWF's capital cost estimate provided to us by Deepwater, we estimated that decommissioning will cost $14 million (2010 dollars) based on LAI's experience with decommissioning costs for other offshore wind facilities.

Deepwater's employment data included the estimated number of employees during BIWF's construction and operating periods, also divided between RI and other states. The employment data were broken into six categories: development/project management, engineering, fabrication and construction, material supply, other (financing, insurance, etc.), and operating staff. The data were presented on an annual basis starting from 2010 to 2012 and then for the operating period beginning in 2013, the first year of the Amended PPA.

In order to convert the raw data into the IMPLAN input format, we broke capital costs into annual budget components using professional and reasonable judgment. For example, we assumed that changes in employment would be gradual and consistent with a January 1, 2013 startup date. We also assumed that the timing of fabrication and construction costs would be consistent with annual employment values. Since IMPLAN uses codified industries, we exercised judgment in assigning BIWF's activities to specific IMPLAN industry codes.

The output data from IMPLAN provides total economic benefits and the composition of those benefits over the 2010 - 2012 development and construction period, over the 20-year term of the Amended PPA, and during decommissioning assumed to occur in 2033. Our analysis indicates that the overall local RI economic benefit attributable to BIWF is

estimated to be $107 million in constant 2010 dollar terms and in net present value ("NPV") terms as of January 1, 2013, broken down as follows:

Table 1. Contribution to RI GDP from BIWF to the RI Economy

	Constant Dollar Value	Net Present Value
Direct Effects	$55 million	$47 million
Indirect Effects	$19 million	$17 million
Induced Effects	$33 million	$28 million
Total	$107 million	$92 million

Our detailed IMPLAN results for BIWF are provided in Attachment 3 and are expressed in constant 2010 dollars. We used a 7.2% discount rate for the NPV consistent with the CRA Study and an inflation rate equal to 2.5% over the study horizon.[2] Our results conservatively assume that BIWF will not operate after the Amended PPA expires. The actual benefits may be higher if, for whatever reason, BIWF were to continue operating after the term of the Amended PPA.

Further Development of Quonset Business Park

Deepwater has pursued a number of business activities to support the BIWF and future offshore wind activities. First, Deepwater has entered into the "Joint Development Agreement between the State of Rhode Island and Deepwater Wind Rhode Island, LLC", dated January 2, 2009 ("JDA"). The JDA identifies a number of economic development activities that Deepwater intends to implement in RI and at the Quonset Business Park for both BIWF (referred to as Phase I) and the RI Sound offshore wind project (referred to as Phase II). In particular, Deepwater commits to locate its foundation manufacturing headquarters in RI, its regional development headquarters in RI, and related business activities in RI, lease land at the Quonset Business Park, and cause its vendors to negotiate in good faith for local labor for both projects. Some of these commitments have already been met.

[2] Charles River Associates, "The Impact of Block Island Wind Farm on Electricity Costs", Draft June 2010, p. 4, footnote 8.

Deepwater entered into a Development Agreement/Lease Option with the Quonset Development Corporation for three parcels of land totaling 117 acres at the Quonset Business Park for the storage, fabrication, and staging of offshore wind power. The three parcels of land have been designated Parcels A, B and C. It is anticipated that Parcel A will be used to weld and store pin piles. Parcel B will be used for storage of offshore wind turbine components including turbine blades, tower sections, rotor hubs, and reels of electric cable. Parcel C will be used as a fabrication yard for the wind turbine jacket structures. In the near term, Deepwater's planned facilities represent a significant investment and its commitment to the region could create over one hundred local jobs throughout the life of the BIWF project.

On February 17, 2010, Governor Donald L. Carcieri announced that the Quonset Development Corporation was awarded a $22.3 million Transportation Investment Generating Economic Recovery ("TIGER") grant from the US Department of Transportation. The grant will support wind energy manufacturing and logistical operations and will improve marine highway infrastructure at the Quonset Business Park and position it to be a major hub for renewable energy and offshore wind industries in New England. The TIGER grant will expedite infrastructure improvements to the Quonset pier to support Deepwater's plans to construct BIWF.

Increasing the Training and Preparedness of the Rhode Island Workforce

The first offshore wind project will provide training and preparedness opportunities for the local workforce. The skills and experiences acquired in the construction and operation of these facilities are likely to be in high demand as the industry grows in the United States. The Providence Plan, a non-profit organization working to improve the social and economic well-being of residents in Providence and RI, has received $3,720,000 to support the Building Futures Energy Training Partnership. The purpose of the project is to train and place entry-level and dislocated workers for careers in two green industries poised for growth: energy-efficient building construction and retrofit and renewable electric power.

Potential Economic Development Benefits of RI Sound Wind Project

According to RI General Law § 39-26.1-7, "the general assembly finds it is in the public interest for the state to facilitate the construction of a small-scale offshore wind demonstration project off the coast of Block Island, including an undersea transmission cable that interconnects Block Island to the mainland in order to: position the state to take advantage of the economic development benefits of the emerging offshore industry".

The Corporation believes that the BIWF project is likely to lead to other offshore wind projects and their associated economic development benefits. With this in mind, we also evaluated the potential economic development benefits attributable to another offshore wind project currently being developed by Deepwater, the 385 MW RI Sound Wind project, using IMPLAN. Our estimates shows that future offshore wind project in this size range will have proportionately more on-shore fabrication and assembly tasks, which will provide more economic development benefits for RI, compared to BIWF.

Deepwater estimates the total capital cost if the RI Sound project, currently in the planning stage, to be $2.0 - $2.5 billion, equivalent to $5,200/kW - $6,500/kW, compared to BIWF's cost of $7,100/kW. For IMPLAN modeling purposes, we used the mid-point value of $2.25 billion, equivalent to $5,840/kW, which appears reasonable assuming RI Sound will enjoy significant economies of scale due to it being so large. We expect that technology improvements, even in the near term, will likely lead to larger wind turbines and lower costs per unit of capacity. We conservatively assumed that the RI Sound project would not result in wind turbine manufacturers locating at Quonset Business Park or new vessel construction would take place in the region.

We expect that fabrication and supply costs will constitute a larger percentage of RI Sound's capital costs, and that owners' costs will represent a lower percentage of RI Sound's capital costs, compared to BIWF. We also assumed that a higher percentage of fabrication and supply costs, as well as installation costs, will occur in RI compared to

BIWF. Lastly we also assumed that there will be economies of scale in most other cost categories, particularly owners' costs. A summary of our cost breakdown is provided as Attachment 4.

We assumed RI Sound would be developed and constructed over the next six years. The planning and development phase will take approximately four years (2011-2014) and the construction phase will take two years (2015-2016) for a January 1, 2017 in-service date. For the purpose of consistency, we assumed RI Sound would operate for 20 years, from January 1, 2017 to December 31, 2036. As with BIWF, we conservatively assumed that RI Sound will be decommissioned at the end of the 20-year term.

The results of our economic development analysis indicate that the overall local RI economic benefit attributable to RI Sound is based on the total Value Added calculated using IMPLAN, estimated to be $886 million in constant 2010 dollar terms and $659 million in NPV terms as of January 1, 2013, broken down as follows. Detailed IMPLAN results in constant dollars for RI Sound Wind Farm are presented as Attachment 5. As with BIWF, we used a 7.2% discount rate for the NPV and an inflation rate equal to 2.5% over the study horizon

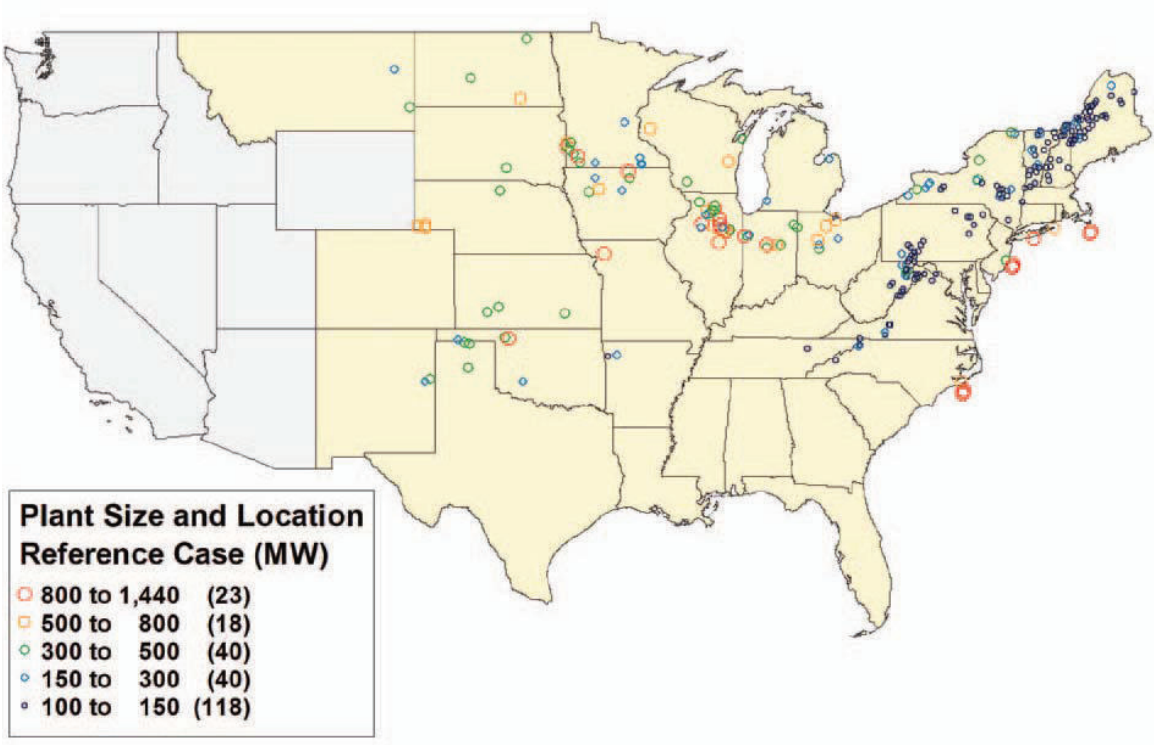
Table 2. Economic Value Added of RI Sound Wind to the RI Economy

Effect	Constant Dollar Value	Net Present Value
Direct Effects	$479 million	$348 million
Indirect Effects	$162 million	$120 million
Induced Effects	$252 million	$191 million
Total	$893 million	$659 million

Potential Long-Term Economic Development Benefits

In order to address the long term economic development potential from future offshore wind projects, we relied on the outlook contained in the "Eastern Wind Integration and Transmission Study" of January 2010 ("EWIT Study") prepared for the US DOE National Renewable Energy Lab by EnerNex Corporation. The EWIT Study is a comprehensive

and current estimate of future offshore wind development in the eastern US. The goal of the EWIT Study was to objectively study future wind penetration in the eastern US in order to plan for the expansion of the electrical transmission system. The EWIT Study developed a number of wind penetration scenarios to estimate where and how many wind projects would be developed. We relied on the reference case that was based on "…the current state of wind development plus some expected level of near-term development guided by interconnection queues and state renewable portfolio standards…"



According to the EWIT Study, an estimated 3,000 MW of offshore wind could be developed off the RI and Southeastern MA coasts for the ISO-NE market, plus another 3,000 MW off Long Island for the NYISO market, by 2024 under reference case conditions.[3] As illustrated in the map above, these are some of the most promising locations identified in the EWIT Study. The total number of wind units depends on the

[3] Another 13,242 MW of onshore wind was projected in ISO-NE and NYISO in the reference case. The reference case scenario had total wind generation meeting about 6% of the total 2024 projected load requirements for the eastern US. In three of the other four scenarios, wind generation would be significantly higher.

size of the wind turbines. While current offshore wind turbines are typically 3.6 MW - 5 MW, they are expected to become larger over the coming years. Assuming an offshore wind turbine size of 5 MW -10 MW, the EWIT Study reference case would be equivalent to 600 - 1200 turbines. According to the Corporation, discussions with industry participants indicate that this level of offshore wind development would be sufficient incentive for a wind turbine manufacturer to locate turbine or blade manufacturing facilities at Quonset Business Park.

Energy Independence

According to R.I. Gen. Law 39-26.1-7: "to position the state to take advantage of the economic development benefits of the emerging offshore wind industry; promote the development of renewable energy sources the increase the nation's energy independence from foreign sources of fossil fuels; reduce the adverse environmental and health impacts of traditional fossil fuel energy sources."

We was also asked to address if Deepwater will further our nation's ability to achieve energy independence.[4] We understand the goal of energy independence as being able to reduce or eliminate our nation's reliance on foreign energy supplies. Thus Deepwater, like any new domestic energy source, would help achieve that goal. As the nation's first offshore wind project, Deepwater could serve to encourage additional domestic offshore projects. According to the US Department of Energy, every MW of offshore wind displaces 5,500 barrels of oil every year, equivalent to about 26 million cubic feet of gas per year. Since natural gas is the predominant fuel in marginal power plants, BIWF could save close to 750 million cubic feet of gas in New England every year.

[4] The federal Energy Independence and Security Act, signed it into law on December 19, 2007, is an energy policy law designed to increase energy independence and security, by improving energy efficiency and the availability of renewable energy. The key provisions of the law are: (i) Corporate Average Fuel Economy (CAFÉ) that sets a target of 35 miles per gallon for the combined fleet of cars and light trucks by model year 2020, (ii) Renewable Fuels Standard that starts at 9.0 billion gallons in 2008 and rises to 36 billion gallons by 2022, (iii) Energy Efficiency Equipment Standards for lighting and for residential and commercial appliance equipment, and (iv) Repeal of Oil and Gas Tax Incentives to offset the estimated cost to implement the CAFE provision.

We also point out that an Ocean Special Area Management Plan ("Ocean SAMP") is being developed for RI's coastal waters through the Rhode Island Coastal Resources Management Council, with a primary goal of siting offshore wind projects. The Ocean SAMP will serve as a federally recognized coastal management and regulatory tool intended to provide a balanced approach to the development and protection of RI's ocean-based resources. The plan has been designed to conform to the Bureau of Ocean Energy Management and Army Corps of Engineers guidance on siting of offshore renewable energy facilities.

Conclusions

- The overall RI economic benefits attributable to BIWF are estimated to be $107 million in constant 2010 dollar terms and in $92 million in NPV terms as of January 1, 2013. Based on reasonable judgments, the overall RI economic development benefit attributed to the much larger RI Sound Project is $893 million in constant 2010 dollars and $659 million in NPV terms.

- BIWF has already helped RI attract training and development funding and will facilitate new and existing business expansion opportunities as well as the creation of renewable energy jobs. Deepwater's investments in RI would help position the state to reap substantial economic development benefits from the anticipated growth of the nascent offshore wind industry in the Northeast United States.

- Quonset Business Park is well positioned to serve as the nexus for offshore wind project business activities. There is significant offshore wind potential in the New York and southern New England region and significant interest on the part of New England states for renewable resources to attract supply chain manufacturing and operations investment in RI.

Attachment 1

THE IMPLAN INPUT-OUTPUT SYSTEM

(Excerpts from “What is IMPLAN?”)

INTRODUCTION

Input-output accounting describes commodity flows from producers to intermediate and final consumers. The total industry purchases of commodities, services, employment compensation, value added, and imports are equal to the value of the commodities produced.

Purchases for final use (final demand) drive the model. Industries produce goods and services for final demand and purchase goods and services from other producers. These other producers, in turn, purchase goods and services. This buying of goods and services (indirect purchases) continues until leakages from the region (imports and value added) stop the cycle.

These indirect and induced effects (the effects of household spending) can be mathematically derived. The derivation is called the Leontief inverse. The resulting sets of multipliers describe the change of output for each and every regional industry caused by a one dollar change in final demand for any given industry. Creating regional input-output models require a tremendous amount of data. The costs of surveying industries within each region to derive a list of commodity purchases (production functions) are prohibitive.

IMPLAN was developed as a cost-effective means to develop regional input-output models. The IMPLAN accounts closely follow the accounting conventions used in the "Input-Output Study of the U.S. Economy" by the Bureau of Economic Analysis (1980) and the rectangular format recommended by the United Nations.

The IMPLAN sytem was designed to serve three functions: 1) data retrieval, 2) data reduction and model development, and 3) impact analysis. Comprehensive and detailed data coverage of the entire U.S. by county, and the ability to incorporate user-supplied data at each stage of the model building process, provides a high degree of flexibility both in terms of geographic coverage and model formulation.

The IMPLAN database, created by MIG, Inc., consists of two major parts: 1) a national-level technology matrix and 2) estimates of sectorial activity for final demand, final payments, industry output and employment for each county in the U.S. along with state and national totals. New databases are developed annually by MIG, Inc.

IMPLAN easily allows the user to do the following:
· Develop his/her own multiplier tables;
· Develop a complete set of SAM (Social Accounting Matrix) accounts;
· Change any component of the system, production functions, trade flows, or database;
· Generate type I, II, or any true SAM multiplier internalizing household, government, and/or investment activities
· Create custom impact analysis by entering final demand changes;
· Obtain any report in the system to examine the model’s assumptions and calculations.

There are two components to the IMPLAN system, the software and databases. The databases provide all information to create regional IMPLAN models. The software performs the calculations and provides an interface for the user to make final demand changes.

IMPLAN SOFTWARE

MIG developed the current version of IMPLAN Professional® version 2.0 in 1999. It is a Windows based software package that performs the calculations necessary to create the predictive model. The software reads the database, creates the complete set of social accounting matrices (SAM), the I/O accounts, and The IMPLAN Input/Output System derives the predictive multipliers. The software also enables the use to make changes to the data, the trade flows, or technology. It also enables the user to make final demand changes which results in the impact assessment.

FEATURES

The IMPLAN Professional® features include:
1) Windows file and printer management;
2) Economic database editor;
3) Complete Social Accounting Matrix structure;
4) A choice of trade-flow assumptions: Supply-Demand Pooling; Regional Purchase Coefficients; Location quotients;
5) Production function editor -i.e., the tools and opportunity necessary to modify the "absorption" and "byproducts" matrices;
6) Libraries for production functions and impact analysis expenditures;
7) Flexible model aggregation tools;
8) Report generator; Many preset reports for all stages of model building and analysis; Export feature to many of the major PC file formats;
9) Flexible assumptions for induced effects;
    Type SAM – true SAM multipliers which allow internalizing any number of institutions;
    Type II - Based on PCE and SAM based local income relationship;
    Type II - Based on user-specified disposable income rate;
    Type III (CPMM) - Traditional Forest Service employment based multipliers;
10) Menu structure for easy impact analysis;
11) Event-based impact databases;
12) Built-in and editable transaction margins;
13) Built-in and editable deflators;
14) Technical support by MIG, Inc.;
15) Data in Access Database format.

DATABASE

Each database has information for these components for all 508 industrial sectors in the IMPLAN model (see Appendix 1 for a complete list of the IMPLAN sectors).

Employment is total wage and salary and self employed jobs in a region. In the 1985 database, employment was measured as full-time equivalent jobs. This meant that total employment in a region would generally be below most published estimates since these are generally full-time and part-time. In the 1990 and subsequent databases, employment includes both full-time and part-time workers. Employment in the 1990 and subsequent databases are measured in total jobs.
There are four sub-components for Value Added. These are:
1. Employee Compensation;
2. Proprietary Income;
3. Other Property Type Income;
4. Indirect Business Taxes.

Employee compensation is wage and salary payments as well as benefits including health and life insurance, retirement payments, and any other non-cash compensation. This provides a measure of income to workers who are paid by employers.

Proprietary income consists of payments received by self-employed individuals as income. This would be recorded on Federal Tax Form 1040C. This includes income received by private business owners, doctors, lawyers, and so forth. Any income a person receives for payment of self-employed work is counted here.

Other property type income consists of payments from rents royalties and dividends. This includes payments to individuals in the form of rents received on property, royalties from contracts, and dividends paid by corporations. This also includes corporate profits earned by corporations.

Indirect business taxes consist primarily of excise and sales taxes paid by individuals to businesses. These taxes are collected during the normal operation of these businesses but do not include taxes on profit or income.

Goods and services purchased for their ultimate use by an end user are called **final demands**. For a region this would include exports as that is a final use for that product. In an input-output framework, final demands are allocated to producing industries with margins allocated to the service sectors (transportation, wholesale and retail trade, insurance) associated with providing that good to the final user. Thus final demands are in producer prices.

There are 13 sub-components for Final Demands. These are:
1. Personal Consumption Expenditures (PCE) - nine income levels;
2. Federal Government Military Purchases;
3. Federal Government Non-Military Purchases;
4. Federal Government Capital Formation Purchases
5. State and Local Government Non-Education Purchases;
6. State and Local Government Education Purchases;
7. State and Local Government Capital Formation Purchases
8. Inventory Purchases;
9. Capital Formation;
10. Foreign Exports;
11. State and Local Government Sales;
12. Federal Government Sales;
13. Inventory Sales.

All final demands in the original data are on a commodity basis. The distinction between industries and commodities is as follows from the 1972 I-O Definitions and Conventions Manual:

- An input-output industry is a grouping of establishments, as classified by SIC;
- An input-output commodity consists of the characteristic products of the corresponding I-O industry wherever made.

There are several industries that have no commodities. This is a result of departures from the strict SIC classification of industries. Also, some commodities have no associated industry. An example of this is non-comparable imports.

Personal consumption expenditures (PCE) consist of payments by individuals/households to industries for goods and services used for personal consumption. Individuals tend to buy little directly from industries other than retail trade. However, in an input-output table, purchases made by individuals for final consumption are shown as payments made directly to the industry producing the good. PCE is the largest component of final demand.

Federal Government purchases are divided between military, non-military uses and capital formation. Federal military purchases are those made to support the national defense. Goods range from food for troops to missile launchers. Non-military purchases are made to supply all other government functions. Payments made to other governmental units are transfers and are not included in Federal Government purchases.

State and local government purchases are divided between public education, non-education and capital formation. Public education purchases are for elementary, high school, and higher education. Noneducation purchases are for all other government activities. These include state government operations, operations including police protection and sanitation. Private sector education purchases are not counted here. Private education purchases show up in IMPLAN sectors 495 and 496.

Inventory purchases are made when industries do not sell all output created in one year. This is generally the case. Each year, a portion of output goes to inventory. Inventory sales occur when industries sell more than they produce and need to deplete inventory. Inventory purchases and sales generally involve goods producing industries (e.g. agriculture, mining, and manufacturing).

Capital formation are private expenditures made to obtain capital equipment. The dollar values in the IMPLAN database are expenditures made to an industrial sector producing the capital equipment. The

values are not expenditures by the industrial sector.

Foreign Exports are demands made to industries for goods for export beyond national borders. These represent goods and services demanded by foreign parties. Domestic exports are calculated during the IMPLAN model creation and are not part of the database.

The national **transactions matrix** is based on the most current National Bureau of Economic Analysis Benchmark Input-Output Model. It is resectored to IMPLAN industrial sectoring. We use our IMPLAN data for the current year to update the most recent National Benchmark study.

Attachment 2

	BIWF Capital Budget	Rhode Island %	Rhode Island Based Costs
ENGINEERING DESIGN			
01 Structural Engineering			
02 Topside Engineering - Electrical			
Engineering Subtotal	3,909,000	10%	390,900
FABRICATION AND SUPPLY			
03 Jacket Fabrication			
04 Pile Fabrication (72")			
05 Pile Template Fabrication			
06 Transition Piece Fabrication			
07 WTG Supply			
08 Electrical Supply			
09 Offshore Transportation - Template and Piles			
10 Offshore Transportation - Jacket and TP			
11 Offshore Transportation - WTG			
Fabrication and Supply Subtotal	140,015,029	8%	11,201,202
OFFSHORE INSTALLATION			
12 Offshore Installation - Template and Piles			
13 Offshore Installation - Jacket and Grouting			
14 Offshore Installation - Cable			
15 Offshore Installation - Utility System			
16 Offshore Installation - WTG			
17 Offshore Hookup			
Offshore Installation Subtotal	29,096,940	50%	14,548,470
PROJECT MANAGEMENT AND INSPECTION	9,719,339	75%	7,289,504
INSURANCE DURING CONSTRUCTION	3,930,959		
DEVELOPMENT	10,000,000	90%	9,000,000
FINANCING COSTS	8,732,245		
TOTAL COSTS	**$ 205,403,512**		**$ 42,430,077**

EMPLOYMENT				
	Rhode Island			
	2010	2011	2012	2013+
RI Office/Development/Project Management/Consultants	12	16	20	20
Engineering	4	4	4	
Fabrication and Construction	14	34	80	
Supply (WTGs, Cable, Etc)	2	2	10	
Other (Financing,Insurance, etc)	2	2	2	
O&M Staff	0	0	6	6

	Other States		
	2010	2011	2012
Development/Project Management/Consultants	3	3	3
Other US offices/Proj Mgnt/Consultancy	8	10	10
Engineering	20	10	5
Fabrication and Construction	40	100	140
Supply (WTGs, Cable, Etc)	4	4	10
Other (Financing,Insurance, etc)	2	2	2

Attachment 3 – Detailed IMPLAN Results for BIWF

Block Island Wind Project - Economic Impacts in Rhode Island 2010 to 2033 (2010 Constant $ 000)					
Project Phase	**Effect**	**Employment**	**Labor Income**	**Total Value Added**	**Output**
Development Phase (3 years)	Direct Effect	356	21,447	25,708	47,852
	Indirect Effect	139	7,462	11,112	19,909
	Induced Effect	208	8,941	15,941	26,630
	Total Effect	704	37,850	52,762	94,391
Operation Phase (20 years)	Direct Effect	520	24,896	27,371	23,526
	Indirect Effect	71	3,363	5,250	8,951
	Induced Effect	203	8,729	15,558	25,988
	Total Effect	794	36,987	48,178	58,465
Decommission Phase	Direct Effect	23	1,192	1,928	7,697
	Indirect Effect	27	1,477	2,253	3,668
	Induced Effect	19	824	1,468	2,453
	Total Effect	70	3,493	5,650	13,817
Totals	Direct Effect	899	47,535	55,007	79,074
	Indirect Effect	238	12,302	18,615	32,528
	Induced Effect	431	18,493	32,967	55,071
	Total Effect	1,568	78,330	106,589	166,674

Attachment 4 – Cost Data for RIWF Used to Run IMPLAN

(In $000)	**Project Costs**	**RI Costs**	**RI %**
Engineering Design	$33,750	$3,375	10%
Fabrication and Supply	$1,647,000	$197,640	12%
Offshore Installation	$270,000	$162,000	60%
Project Management and Inspection	$78,750	$59,063	75%
Development	$90,000	$81,000	90%
Insurance During Construction	$33,750	$0	100%
Financing Costs	$96,750	$0	100%
Total Costs	$2,250,000	$503,078	

Attachment 5 – Detailed IMPLAN Results for RI Sound Wind Farm

Rhode Island Sound 385 MW Wind Project - Economic Impacts in Rhode Island 2011 to 2037 (2010 Constant $ 000)					
Project Phase	**Effect**	**Employment**	**Labor Income**	**Total Value Added**	**Output**
Development Phase (6 years)	Direct Effect	2,071	196,666	222,044	445,322
	Indirect Effect	1,156	60,589	89,986	160,512
	Induced Effect	1,856	79,601	141,952	237,132
	Total Effect	5,082	336,856	453,982	842,966
Operation Phase (20 years)	Direct Effect	1,338	139,070	234,519	472,381
	Indirect Effect	607	30,402	46,077	74,297
	Induced Effect	1,224	52,465	93,576	156,321
	Total Effect	3,168	221,937	374,172	702,999
Decommission Phase	Direct Effect	328	13,325	22,624	91,376
	Indirect Effect	314	16,901	25,836	42,040
	Induced Effect	217	9,331	16,628	27,776
	Total Effect	859	39,556	65,087	161,192
Totals	Direct Effect	3,736	349,061	479,187	1,009,079
	Indirect Effect	2,076	107,892	161,898	276,849
	Induced Effect	3,296	141,396	252,156	421,229
	Total Effect	9,109	598,349	893,242	1,707,157