BEFORE THE
STATE OF NEW YORK
BOARD ON ELECTRIC GENERATION
SITING AND THE ENVIRONMENT

In the Matter of

Eight Point Wind, LLC

Case 16-F-0062

January 22, 2019

Prepared [REDACTED] Exhibits of:

Daniel S. Gadomski
Utility Analyst I
Office of Market and Regulatory Economics

State of New York
Department of Public Service
Three Empire State Plaza
Albany, New York 12223-1350

List of Exhibits

Exhibit DSG-1

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Date of Request: October 19, 2018

Case 16-F-0062
Application of Eight Point Wind LLC for a Certificate of Environmental Compatibility and Public Need Pursuant to Article 10 to Construct a Wind Energy Project.

INTERROGATORY/DOCUMENT REQUEST

Request No.:	DPS-21
Directed To:	Eight Point Wind
From:	Daniel Gadomski

Information Requested:

Subject: Exhibit 27: Socioeconomic Effects

1. Provide a copy of the Job and Economic Development Impact (JEDI) model used in the development of this application. Provide all model input data and model outputs associated with the JEDI model runs described in the application. Provide all materials and information in a usable electronic format with all formulae intact.
2. Provide the anticipated on-site labor employment levels for the construction and ongoing operational phases for the project based on actual budgeted estimates for the Project. Indicate the extent to which such estimates are based on contractor quotes and/or consultations.

3. Provide all documents containing estimates of Incremental Economic Benefits that the Applicant submitted to NYSERDA related to the Eight Point Wind Facility in response to any NYSERDA solicitation.

Response:

1. Two JEDI models were used for the development of the application: JEDI-Transmission Line (release TL12.23.16) and JEDI-Wind (release W12.23.16). Two Excel files were used to develop inputs for the models. "Combined Prop Tax and PILOT for JEDI models.xls" provides the calculations for the *property tax* input in the models. "Expected jobs data.xls" provides the calculations for the *labor* inputs in the models.

Name of Person(s)
Preparing Response: Diane Reilly Date: 10/26/2018

The JEDI models generate some outputs in terms of Fiscal Year 2014 or 2015. These outputs were inflated to current dollars for inclusion in the application. The conversion of the outputs were done using the Excel files "Fiscal Year inflation adjustment for JEDI Transmission model results 10 8 2017.xls" and "Fiscal Year inflation adjustment for JEDI Wind model results 10 8 2017.xls."

2. On-site labor employment levels, in terms of full-time equivalent (FTE) jobs, for the construction phase of the project are shown in the table below. These estimates are based on contractor consultations.

	Type of Job	Number of FTE Jobs Created
Transmission Line	General	78
Generation Facility	Foundations	58
	Erection	76
	Electrical	36
	Substation	23
	Management	8
	Engineering and Related Services	10
Subtotal, Generation Facility		***211***
Total FTE Jobs		***289***

Annual Quarter of Construction Activity	Construction Labor Quarterly Jobs	Engineers and Other Professional Services	Total
Quarter 1	**93**	**18**	**111**
Quarter 2	**226**	**18**	**244**
Quarter 3	**226**	**18**	**244**
Quarter 4	**226**	**18**	**244**
Peak Employment	**226**	**18**	**244**

On-site labor employment levels for the operation and maintenance phase of the project are anticipated to be approximate 8 FTE jobs. Of these jobs, 2 FTE jobs are expected to be associated with the transmission line, with 6 FTE jobs associated with the generation facility. These labor estimates for the operation and maintenance phase of the project were generated by the JEDI wind and transmission models.

3. A response will be forthcoming.

Name of Person(s)
Preparing Response: Diane Reilly (TRC) **Date:** 10/26/2018

JEDI - WIND

Jobs and Economic Development Impact (JEDI) Model

Release Number: W12.23.16

The Jobs and Economic Development Impact (JEDI) Model was developed in 2002 to demonstrate the economic b based wind power plants in the United States. The primary goal in developing the initial state level model was to prov eneergy advocates, government officials, decision makers and other potential users, to easily identify the local econom operating wind power plants. The second goal was to facilitate broad access and usage of the model by making it adap put on a web site.

Consistent with these goals, a strong emphasis was placed on designing the model in a user-friendly format that cou levels of project specific information and user skill. This insures the greatest flexibility for inexperienced spreadsheet analysis, and more experienced and knowledgeable users who have a need for this specific type of analysis.

Persons wishing more information on how and/or where the model is being used or the role of the National Renewa wind and other renewable technologies should contact NREL support at:

National Renewable Energy Laboratory
15013 Denver West Parkway
Golden, Colorado, 80401
Tel.: 303.384.6939
Email: jedisupport@nrel.gov.

The model was developed by Marshall Goldberg of MRG & Associates, under contract with the National Renewab more information on the methodology or data in the model should contact him at:

MRG & Associates
17935 Starduster Dr.
Nevada City, California, 95959
Tel.: 530.432.9373
Email: MRGAssociates@earthlink.net

The JEDI model utilizes multipliers derived from IMPLAN data using the IMPLAN Version 3.0 Social Accounting Persons wishing more information on the IMPLAN data or the software should contact the IMPLAN Group.

IMPLAN Group, LLC
16740 Birkdale Commons Parkway Suite 206
Huntersville, North Carolina 28078
Tel: 651.439.4421
www.implan.com

JEDI - WIND

Jobs and Economic Development Impact (JEDI) Model

Frequently Asked Questions (FAQ)

How do I know if I have the most current version of the JEDI model?
The most current version of the JEDI model is available on the Department of Energy web site at www.windpoweringamerica.gov. Click on "Economic Development" on the left side of the page (in Program Areas). Once there, scroll down and click on "Jobs and Economic Development Impact (JEDI) Model." Scroll down and click on "Download the JEDI Model." (See also, getting on the JEDI mailing list, in FAQ.)

How can I determine which version of the JEDI model I have?
The version (release number) of the model you are currently using is listed in the "About JEDI" worksheet contained in this model.

Is there a mailing list I can get on to be notified by email when new versions of JEDI are released?
Yes, to get on the JEDI mailing list go to the Department of Energy web site at www.windpoweringamerica.gov. Click on "Economic Development" on the left side of the page (in Program Areas). Once there, scroll down and click on "Jobs and Economic Development Impact (JEDI) Model." Scroll down and click on "Updates." Enter your contact information, submit, and you will be placed on the JEDI mailing list.

When I open up the model I receive a security alert message stating "the macros in the file have been disabled," how do I change the security setting so I can run the model with the macros enabled?
The message you are receiving is related to the level of security you have chosen in your Excel™ set up. To change the setting for opening files, open Excel™, on the top toolbar, click on "tools," then "macros" then "security." Reset the security level to "medium," this will enable you to choose to enable or disable macros each time you open a file. Alternately, the model can be successfully run with the macros disabled.

Where can I get more information on input-output modeling and using the JEDI model?
To view and/or download JEDI related publications go to the Department of Energy's web site at www.windpoweringamerica.gov. Click on "Economic Development" on the left side of the page (under Program Areas). Additional information on these topics and access to publications is available by then clicking on "Jobs and Economic Impact (JEDI) Model. Once there, scroll down to "Publications" and click on any of the links. (See also, Is additional technical support available, in FAQ.)

How do I run a county or regional level analysis?
Running a county or regional level analysis is similar to running a state level analysis, although there are two key differences users must keep in mind. First, the model does not contain county or regional level multipliers, thus users must obtain these and add them into the model. (See FAQ on obtaining county or regional level multipliers and how to add in the data) Second, to run a county or regional level analysis users must enter the county or regional population in the Project Description area. The population provides a reference for the model to automatically insert 'local share" defaults for the analysis.

Where can I get county or regional level data to add-in to the model to run a county or region specific analysis?
County level multipliers and personal consumption expenditure patterns are available from a number of sources. Users familiar with IMPLAN or input-output modeling can purchase the raw county level data and derive the multipliers themselves, purchase them from someone familiar with input-output modeling, purchase them directly from IMPLAN (www.implan.com), or contact MRG & Associates (mrgassociates@earthlink.net), the model developer.

How do I add in county or regional level multipliers and the personal consumption expenditure data?
Adding-in county or regional level multipliers and personal consumtption expenditure data involves going to the "User Add-in Location" worksheet in this model and cutting and pasting the data into their respective locations. With the data installed it is also necessary to insert the county or region name, the year of the data, and the name of the state.

What does the "local share" refer to?
The "local share" refers to the percentage of each expenditure that is actually spent locally (i.e., in the state, county or region being analyzed). For example, if $1 million is going to be spent on construction materials and half ($500,000) of this total will be purchased from local suppliers, we say the "local share" is 50 percent.

What does the term "full-time equivalent for a period of one year" refer to in the jobs results?
The term refers to a job that is held (and wages paid) for a period of one year. This is based on 2,080 hours (52 weeks times 40 hours per week). For example, if the analysis indicates there are 100 construction jobs, there will be the equivalent of 100 workers, working full-time, for the entire year. If the construction period is two years, the job impacts (100 jobs) are spread over the two year construction period. In this example, there will be an average of 50 full-time jobs (100 jobs divided by 2 years) during each of the years. Similarly, if the construction period is less than one year, for example, 9 months (75 percent of a full year), then the number of persons actually employed and working full-time during that period will be greater since they will not be employed and working for an entire year. In this example, there will be an average of 133 full-time workers (100 jobs divided by .75 percent of the year) during the 9 month construction period.

I want to make my analysis as accurate as possible, where can I get information to adjust the default "local share" values (in the ProjectData worksheet) for my state or county?
Since the "local share" is directly related to the availability of local businesses and services and their ability to meet the construction and annual operating demands of the project, it is important to have an accurate picture of these local resources. This can be obtained in a number of ways: contacting experienced and knowlegeable persons in the area, contacting local business and contractor organizations and/or the local chamber of commerce, among others.

I want to make changes to the default labor construction and/or O&M costs, wage rates or employer payroll overhead but when I do I receive a pop up instructing me to only make changes if I change other wage and/or salary related cells. Why is this?
The model uses the total labor costs and the average wages per hour to calculate the number of construction workers and O&M workers. Therefore, if a User chooses to modify the default values, they override the default ratios programed into the model. Thus, if the User increases (or decreases) the total labor costs without changing the wage per hour, the results will show more workers. Similarly, if the average wage per hour is increased (or decreased), without a subsequent increase in the total labor costs, the results will show fewer workers.

I have used previous versions of the JEDI Wind model and my earlier results are significantly different from results with the newer version. Why is this?
There are a number of reasons why this may occur. First, with each new model release, updated "on-the-ground" information from project developers and survey research has been incorporated into the model. Similarly, changes in reporting format, such as revising direct impacts to include only "on-site" spending in the more recent versions, will change how some of the results appear. Newer versions may also include updated multipliers that directly affect the results. And finally, user modifications to default data and local shares, as well as running a state versus a county or regional analysis will yield significantly varied results.

When I change the construction ($ per kW) or O&M ($ per kW) cost in the Project Description area, the labor costs remain the same but the other project costs change. Why don't all the project costs change?
The model is designed to allocate labor costs based on default wage and overhead costs and employment (job) ratios, unless the costs are modified by the user. Therefore any changes in the total construction or O&M costs in the Project Description area do not impact labor costs. See also FAQ related to User changes to labor costs.

I am interested in viewing and possibly editting internal formulas within the model, how do I access them?
The JEDI model contains several intermediate worksheets that are an integral part of the model analysis. These worksheets are not designed to be changed by users. Several of these worksheets, including default data, calculations, and deflators may be viewed by merely clicking on the respective worksheet and scrolling to the right. Although these sheets may be viewed by users they are protected and can not be editted. The model contains two additional worksheets: multipliers and household expenditures. These worksheets are hidden to protect proprietary data derived from IMPLAN (Minnesota Implan Group).

Is additional technical support available?
Yes, technical support is available by contacting Suzanne Tegen, technical monitor at the National Renewable Energy Laboratory. She can be reached at 303-384-6939 or by email at Suzanne.Tegen@nrel.gov.

JEDI - WIND

Jobs and Economic Development Impact Model

This demonstration model is designed to estimate the statewide economic impacts associated with developing and operating land-based wind power generation facilities in the United States. The economic impacts identified include jobs, earnings, output and value added for the construction period and annually once the windfarm is up and running. A user defined "add-in" location (e.g., county or region) option is also available.

Steps to complete an economic impact analysis:

1. Enter project descriptive data
2. Choose to accept default project cost data (based on project descriptive data entered), or review and enter new project data.
3. If you choose to accept project default values (enter a "Y" in the designated cell) go directly to

Wind Farm Project Data

INSTRUCTIONS Begin by entering Project Location (from pull-down list) and other Descriptive Data.
After inserting required data press enter (or cursor to the next cell) to continue.
Once Descriptive Data is complete, choose "Y" or "N" on Line 24 to continue.
Choose "Y" to accept Project Cost and Local Share defaults or "N" to review/modify values.
To utilize new values in analysis you must choose an "N" in "Utilize Model Default Values (below)?" - Line 24
Additional information is available by pointing to the red triangles located in cell corners and in the *FAQ* tab.
Only those cells with a white background can be changed (accept new values).

Project Descriptive Data

Project Location	**NEW YORK**
Year of Construction	**2019**
Total Project Size - Nameplate Capacity (MW)	**102**
Number of Projects (included in Total Project Size)	**1**
Turbine Size (kW)	**3,300**
Number of Turbines	**31**
Installed Project Cost ($/kW)	**$1,690**
Operations and Maintenance Cost ($/kW)	**$24.00**
Money Value (Dollar Year)	**2017**

Utilize *Project Cost Data* default values in analysis? **N** **Modify Project Cost Data (change data below)**

Choose "Y" to accept default values below or "N" to over-ride default values and utilize new user defined values as entered below. ***See FAQ for related topics.***

If desired, default values (in cells below - based on *Project Descriptive Data* entered above) may be restored by pressing the 'Restore Default Values' button. ***Note: it is not necessary to restore defaults to incorporate default Project Cost Data in system analysis - simply choose "Y" in cell B24 above.***

Project Cost Data

Construction Costs	**Cost**	**Cost Per kW**	**Percent of Total Cost**	**Local Share**	
Equipment Costs					
Turbines (excluding blades and towers)	$76,095,413	$747	42.3%	0%	
Blades	$17,814,980	$175	9 9%	0%	
Towers	$19,723,728	$194	11.0%	0%	
Transportation	$13,615,734	$134	7 6%	0%	
Equipment Total	$127,249,855	$1,250	70.8%		
Balance of Plant					
Materials					
Construction (concrete, rebar, equip, roads and site prep)	$18,387,604	$181	10.2%	90%	
Transformer	$2,080,019	$20	1 2%	0%	
Electrical (drop cable, wire,)	$2,192,481	$22	1 2%	100%	
HV line extension	$4,004,931	$39	2 2%	70%	
Materials Subtotal	$26,665,035	$262	14.8%		
Labor	**Do not change 'Labor Costs' without changing Construction 'Wages per Hour' below.**				
Foundation	$ 3,534,083.92	$35	2 0%	50%	**See comment - point cursor to red triangle in cell corner.**
Erection	$ 5,288,489.71	$52	2 9%	50%	
Electrical	$ 3,342,029.43	$33	1 9%	50%	
Management/Supervision	$ 1,001,248.76	$10	0 6%	0%	
Misc.	$0	$0	0 0%	50%	
Labor Subtotal	$13,165,852	$129	7 3%		
Development/Other Costs					
HV Sub/Interconnection					
Materials	$1,263,710	$12	0.7%	90%	
Labor	$ 2,888,217.57	$28	1 6%	50%	
Engineering	$ 1,619,072.00	$16	0 9%	50%	
Legal Services	$937,178	$9	0 5%	100%	
Land Easements	$0	$0	0 0%	100%	
Site Certificate/Permitting	$438,496	$4	0 2%	100%	
Development/Other Subtotal	$7,146,673	$70	4 0%		
Balance of Plant Total	$46,977,561	$461	26.1%		
Subtotal (all cost without taxes)	$174,227,416	$1,711	96.9%		
Sales Tax (Material and Equipment Purchases)	$5,611,966	$55	3.1%	100%	
Total	$179,839,382	$1,767	100.0%		

Wind Farm Annual Operating and Maintenance Costs

	Cost	Cost Per kW	Percent of Total Cost	Local Share
Labor				
Personnel				
Field Salaries	$340,939	$3.35	13.6%	100%
Administrative	$53,760	$0.53	2 2%	100%
Management	$134,399	$1.32	5.4%	100%
Labor/Personnel Subtotal	$529,098	$5.20	21.2%	
Materials and Services				
Vehicles	$54,681	$0.54	2 2%	100%
Site Maint/Misc. Services	$21,326	$0.21	0 9%	100%
Fees, Permits, Licenses	$10,663	$0.10	0.4%	100%
Utilities	$42,651	$0.42	1.7%	100%
Insurance	$410,106	$4.03	16.4%	0%
Fuel (motor vehicle gasoline)	$21,326	$0.21	0 9%	100%
Consumables/Tools and Misc. Supplies	$138,616	$1.36	5 5%	100%
Replacement Parts/Equipment/ Spare Parts Inventory	$1,214,734	$11 93	48.6%	2%
Materials and Services Subtotal	$1,914,102	$18 80	76.6%	
Sales Tax (Materials & Equipment Purchases)	$56,321	$0.55	2 3%	100%
Other Taxes/Payments	$0	$0.00	0 0%	100%
Total O&M Cost	$2,499,521	$24 55	100.0%	

Other Parameters

Financial Parameters				**Local Share**
Debt Financing				
Percentage financed	80%			0%
Years financed (term)	10			
Interest rate	6%			
Equity Financing/Repayment				
Percentage equity	20%			
Individual Investors (percent of total equity)	0%			100%
Corporate Investors (percent of total equity)	100%			0%
Return on equity (annual interest rate)	12%			
Repayment term (years)	10			
Tax Parameters				
Local Property Tax Rate (avg millage rate - $/$1,000)	NA			
Assessed value (percent of construction cost)	NA			
Taxable Value	NA			
Taxes Per MW	$7,300			
Local Taxes	$743,140			100%
Local Sales Tax Rate	4.00%			100%
Land Lease Parameters				
Land Lease Cost (per turbine)	$9,900			
Number of Turbines	31			
Land Lease (total cost)	$306,900			
Lease Payment recipient (F = farmer/household, O = Other)	F			100%
Payroll Parameters				
Construction Labor	**Wage per hour**		**Employer Payroll Overhead**	
Foundation	$21.44		37.6%	
Erection	$24.28		37.6%	
Electrical	$32.17		37.6%	
Management/Supervision	$43.73		37.6%	
O&M Labor	**Wage per hour**		**Employer Payroll Overhead**	
Field Salaries (technicians, other)	$29.25		37.6%	
Administrative	$18.72		37.6%	
Management/Supervision	$46.80		37.6%	

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Project Cost Data - Default Values

Construction Costs	**Cost**	**Cost Per KW**	**Percent of Total Cost**	**Local Share**
Materials				
Equipment Costs				
Turbines (excluding blades and towers)	$76,095,413			0%
Blades	$17,814,980			0%
Towers	$19,723,728			0%
Transportation	$13,615,734			0%
Equipment Subtotal	$127,249,855			
Other Costs				
Materials				
Construction (concrete, rebar, equip, roads and site pre	$18,387,604			90%
Transformer	$2,080,019			0%
Electrical (drop cable, wire,)	$2,192,481			100%
HV line extension	$4,004,931			70%
Materials Subtotal	$26,665,035			
Labor				
Foundation	$1,500,322			95%
Erection	$1,699,328			75%
Electrical	$2,476,432			70%
Management/supervision	$1,285,025			0%
Misc.	$6,537,596			50%
Labor Subtotal	$13,498,703			
HV Sub/Interconnection				
Materials	$1,263,710			90%
Labor	$387,099			10%
Engineering	$1,719,593			0%
Legal Services	$937,178			100%
Land Easements	$0			100%
Site Certificate/Permitting	$438,496			100%
Other Subtotal	$4,746,076			
Balance of Plant Total	$44,909,814			
Subtotal (all cost without taxes)	$172,159,669			
Sales Tax (Material and Equipment Purchases)	$5,611,966			100%
Total	$177,771,635			

Wind Farm Annual Operating and Maintenance Costs

	Cost	Local Share
Labor		
Personnel		
Field Salaries	$340,939	100%
Administrative	$53,760	100%
Management	$134,399	100%
Personnel Subtotal	$529,098	
Materials and Services		
Vehicles	$54,681	100%
Misc. Services	$21,326	80%
Fees, Permits, Licenses	$10,663	100%
Utilities	$42,651	100%
Insurance	$410,106	0%
Fuel (motor vehicle gasoline)	$21,326	100%
Tools and Misc. Supplies	$138,616	100%
Spare Parts Inventory	$1,214,734	2%
Materials and Services Subtotal	$1,914,102	
Sales Tax (Materials & Equipment Purchases)	$56,321	100%
Other Taxes/Payments	$0	100%
Total	$2,499,521	

Other Parameters

Financial Parameters		**Local Share**
Debt Financing		
Percentage financed	80%	0%
Years financed (term)	10	
Interest rate	6%	
Equity Financing/Repayment		
Percentage equity	20%	
Individual Investors (percent of total equity)	0%	100%
Corporate Investors (percent of total equity)	100%	0%
Return on equity (annual interest rate)	12%	
Repayment term (years)	10	
Tax Parameters		
Local PropertyTax Rate (avg mill rate - $/$1,000)	NA	
Assessed value (percent of construction cost)	NA	
Taxable Value	NA	
Taxes Per MW	NA	
Local Taxes	$0	100%
Sales Tax Rate	4.00%	100%
Land Lease Parameters		
Land Lease Cost (per turbine)	$9,900	
Number of Turbines	0	
Land Lease (total cost)	$0	
Lease Payment recipient (F = farmer/household, O = Otl	F	100%
Payroll Parameters		
Construction Labor	**Wage per hour**	**Employer Payroll Overhead**
Foundation	$21.44	37.6%
Erection	$24.28	37.6%
Electrical	$32.17	37.6%
Management/Supervision	$43.73	37.6%
	Wage per hour	**Employer Payroll Overhead**
Field Salaries (technicians, other)	$29.25	37.6%
Administrative	$18.72	37.6%
Management	$46.80	37.6%

Wind Farm - Project Data Summary based on User modifications to default values

Project Location	NEW YORK	
Year of Construction	2019	
Total Project Size - Nameplate Capacity (MW)	102	
Number of Projects (included in total)	1	
Turbine Size (kW)	3300	
Number of Turbines	31	
Installed Project Cost ($/kW)	$1,767	$1,711 wi hout taxes
Annual O&M Cost ($/kW)	$24.55	$24.00 wi hout taxes
Money Value (Dollar Year)	2017	
Total Installed Project Cost	$179,839,382	
Local Spending	$38,005,702	
Total Annual Operational Expenses	$29,741,611	
Direct Operating and Maintenance Costs	$2,499,521	
Local Spending	$842,654	
O her Annual Costs	$27,242,090	
Local Spending	$1,106,361	
Debt and Equity Payments	$0	
Property Taxes	$743,140	
Land Lease	$306,900	

Local Economic Impacts - Summary Results

	Jobs	Earnings	Output	Value Added
During construction period				
Project Development and Onsite Labor Impacts				
Construction and Interconnection Labor	91	$7.4		
Construction Related Services	12	$0.8		
Total	103	$8.2	$9.3	$8.6
Turbine and Supply Chain Impacts	164	$11.6	$34.5	$17.6
Induced Impacts	72	$5.3	$13.3	$8.7
Total Impacts	**338**	**$25.1**	**$57.2**	**$34.8**
During operating years (annual)				
Onsite Labor Impacts	6	$0.5	$0.5	$0.5
Local Revenue and Supply Chain Impacts	5	$0.5	$2.1	$1.6
Induced Impacts	5	$0.4	$0.9	$0.6
Total Impacts	**16**	**$1.4**	**$3.6**	**$2.7**

Notes: Earnings and Output values are millions of dollars in year 2017 dollars. Construction and operating jobs are full-time equivalent for a period of one year (1 FTE = 2,080 hours). Wind farm workers includes field technicians, administration and management. Economic impacts "During operating years" represent impacts that occur from wind farm operations/expenditures. The analysis does not include impacts associated with spending of wind farm "profits" and assumes no tax abatement unless noted. Totals may not add up due to independent rounding. Results are based on User modifications to default values.

Detailed Wind Farm Project Data Costs	NEW YORK	
Construction Costs	**Cost**	**Local Share**
Equipment		
Turbines	$76,095,413	0%
Blades	$17,814,980	0%
Towers	$19,723,728	0%
Transporta ion	$13,615,734	0%
Equipment Total	$127,249,855	
Balance of Plant		
Materials		
Construction (concrete rebar, equip, roads and site prep)	$18,387,604	90%
Transformer	$2,080,019	0%
Electrical (drop cable, wire,)	$2,192,481	100%
HV line extension	$4,004,931	70%
Materials Subtotal	$26,665,035	
Labor		
Foundation	$3,534,084	50%
Erection	$5,288,490	50%
Electrical	$3,342,029	50%
Management/supervision	$1,001,249	0%
Misc.	$0	50%
Labor Subtotal	$13,165,852	
Development/Other Costs		
HV Sub/Interconnec ion		
Materials	$1,263,710	90%
Labor	$2,888,218	50%
Engineering	$1,619,072	50%
Legal Services	$937,178	100%
Land Easements	$0	100%
Site Certificate	$438,496	100%
Development/Other Subtotal	$7,146,673	
Balance of Plant Total	$46,977,561	
Sales Tax (Materials & Equipment Purchases)	$5,611,966	100%
Total Project Costs	**$179,839,382**	

Wind Plant Annual Operating and Maintenance Costs		
	Cost	**Local Share**
Labor Costs		
Personnel		
Field Salaries	$340,939	100%
Administrative	$53,760	100%
Management	$134,399	100%
Labor/Personnel Subtotal	$529,098	
Materials and Services		
Vehicles	$54,681	100%
Misc. Services	$21,326	100%
Fees, Permits, Licenses	$10,663	100%
Misc. Materials	$42,651	100%
Insurance	$410,106	0%
Fuel (motor vehicle gasoline)	$21,326	100%
Tools and Misc. Supplies	$138,616	100%
Spare Parts Inventory	$1,214,734	2%
Materials and Services Subtotal	$1,914,102	
Sales Tax (Materials & Equipment Purchases)	$56,321	100%
Other Taxes/Payments	$0	100%
Total (with Sales Tax and Other Taxes/Payments)	$2,499,521	
Debt Payment (average annual)	$19,826,305	0%
Equity Payment - Individuals	$0	100%
Equity Payment - Corporate	$6,365,745	0%
Property Taxes	$743,140	100%
Land Lease	$306,900	100%
Total Annual Operating and Maintenance Costs	**$29,741,611**	

Other Parameters		
		Local Share
Financial Parameters		
Debt Financing		
Percentage financed	80%	0%
Years financed (term)	10	
Interest rate	6%	
Equity Financing		
Percentage equity	20%	
Individual Investors (percent of total equity)	0%	100%
Corporate Investors (percent of total equity)	100%	0%
Return on equity (annual interest rate)	12%	
Repayment term (years)	10	
Tax Parameters		
Local Property Tax Rate (avg millage rate - $/$1,000)	NA	
Assessed value (percent of construc ion cost)	NA	
Taxable Value	NA	
Taxes Per MW	$7,300	
Local Taxes	$743,140	100%
Local Sales Tax Rate	4.0%	100%
Land Lease Parameters		
Land Lease Cost (per turbine)	$9,900	
Land Lease (total cost)	$306,900	
Lease Payment recipient (F = farmer/household, O = Other)	F	100%
Payroll Parameters		
Construction Labor	**Average Wage per hour**	**Employer Payroll Costs**
Foundation	$21.44	37.6%
Erection	$24.28	37.6%
Electrical	$32.17	37.6%
Management/Supervision	$43.73	37.6%
O&M Labor	**Average Wage per hour**	**Employer Payroll Costs**
Field Salaries (technicians, o her)	$29.25	37.6%
Administrative	$18.72	37.6%
Management	$46.80	37.6%

Installed Project C	1711
Annual O&M Cost	24 00

1791.15
1715.16
User modifications to default

Wind Farm - Project Data Summary based on User modifications to default values

Project Location	**NEW YORK**	
Year of Construction	**2019**	
Total Project Size - Nameplate Capacity (MW)	**102**	
Number of Projects (included in total)	**1**	
Turbine Size (kW)	**3300**	
Number of Turbines	**31**	
Installed Project Cost ($/kW)	**$1,767**	**$1,711 without taxes**
Annual Direct O&M Cost ($/kW)	**$24.55**	**$24.00 without taxes**
Money Value (Dollar Year)	**2017**	
Installed Project Cost	**$179,839,382**	
Local Spending	**$38,005,702**	
Total Annual Operational Expenses	**$29,741,611**	
Direct Operating and Maintenance Costs	**$2,499,521**	
Local Spending	**$842,654**	
Other Annual Costs	**$27,242,090**	
Local Spending	**$1,106,361**	
Debt and Equity Payments	**$0**	
Property Taxes	**$743,140**	
Land Lease	**$306,900**	

Local Economic Impacts - Summary Results

	Jobs	Earnings	Output	Value Added
During construction period				
Project Development and Onsite Labor Impacts				
Construction and Interconnection Labor	91	$7.37		
Construction Related Services	12	$0.79		
Total	103	$8.16	$9.27	$8.59
Turbine and Supply Chain Impacts	164	$11.63	$34.54	$17 56
Induced Impacts	72	$5.34	$13.34	$8.67
Total Impacts	**338**	**$25.13**	**$57.16**	**$34.81**
During operating years (annual)				
Onsite Labor Impacts	6	$0.49	$0.49	$0.49
Local Revenue and Supply Chain Impacts	5	$0.52	$2.12	$1.61
Induced Impacts	5	$0.38	$0.94	$0.61
Total Impacts	**16**	**$1.38**	**$3.56**	**$2.72**

Notes: Earnings and Output values are millions of dollars in year 2017 dollars. Construction and operating jobs are full-time equivalent for a period of one year (1 FTE = 2,080 hours). Wind farm workers includes field technicians, administration and management. Economic impacts "During operating years" represent impacts that occur from wind farm operations/expenditures. The analysis does not include impacts associated with spending of wind farm "profits" and assumes no tax abatement unless noted. Totals may not add up due to independent rounding. Results are based on User modifications to default values.

Detailed Wind Farm Project Data Costs

NEW YORK

Construction Costs	**Cost**	**Local Share**
Equipment Costs		
Turbines	$76,095,413	0%
Blades	$17,814,980	0%
Towers	$19,723,728	0%
Transportation	$13,615,734	0%
Equipment Subtotal	$127,249,855	
Balance of Plant		
Materials		
Construc ion (concrete rebar, equip, roads and site prep)	$18,387,604	90%
Transformer	$2,080,019	0%
Electrical (drop cable, wire,)	$2,192,481	100%
HV line extension	$4,004,931	70%
Materials Subtotal	$26,665,035	
Labor		
Founda ion	$3,534,084	50%
Erec ion	$5,288,490	50%
Electrical	$3,342,029	50%
Management/supervision	$1,001,249	0%
Misc.	$0	50%
Labor Subtotal	$13,165,852	
Development/Other Costs		
HV Sub/Interconnection		
Materials	$1,263,710	90%
Labor	$2,888,218	50%
Engineering	$1,619,072	50%
Legal Services	$937,178	100%
Land Easements	$0	100%
Site Certificate	$438,496	100%
Other Subtotal	$7,146,673	
Balance of Plant Total	$46,977,561	
Sales Tax (Materials & Equipment Purchases)	$5,611,966	100%
Total Project Costs	$179,839,382	

Wind Farm Annual Operating and Maintenance Costs

	Cost	**.ocal Share**
Labor		
Personnel		
Field Salaries	$340,939	100%
Administra ive	$53,760	100%
Management	$134,399	100%
Labor/Personnel Subtotal	$529,098	
Materials and Services		
Vehicles	$54,681	100%
Site Maint/Misc. Services	$21,326	100%
Fees, Permits, Licenses	$10,663	100%
Utilities	$42,651	100%
Insurance	$410,106	0%
Fuel (motor vehicle gasoline)	$21,326	100%
Consumables/Tools and Misc. Supplies	$138,616	100%
Replacement Parts/Equipment/ Spare Parts Inventory	$1,214,734	2%
Materials and Services Subtotal	$1,914,102	
Sales Tax (Materials & Equipment Purchases)	$56,321	100%
Other Taxes/Payments	$0	100%
Total (with Sales Tax and Other Taxes/Payments)	$2,499,521	
Debt Payment (average annual)	$19,826,305	0%
Equity Payment - Individuals	$0	100%
Equity Payment - Corporate	$6,365,745	0%
Property Taxes	$743,140	100%
Land Lease	$306,900	100%
Total Annual Operating and Maintenance Costs	$29,741,611	

Other Parameters

Financial Parameters		
Debt Financing		
Percentage financed	80%	0%
Years financed (term)	10	
Interest rate	6%	
Equity Financing		
Percentage equity	20%	
Individual Investors (percent of total equity)	0%	100%
Corporate Investors (percent of total equity)	100%	0%
Return on equity (annual interest rate)	12%	
Repayment term (years)	10	
Tax Parameters		
Local Property Tax Rate (avg millage rate - $/$1,000)	NA	
Assessed value (percent of construction cost)	NA	
Taxable Value	NA	
Taxes per MW	$7,300	
Local Taxes	$743,140	100%
Local Sales Tax Rate	4.0%	100%
Land Lease Parameters		
Land Lease Cost (per turbine)	$9,900	
Land Lease (total cost)	$306,900	
Lease Payment recipient (F = farmer/household, O = Other)	F	100%
Payroll Parameters		
Construction Labor	**Average Wage per hour**	**Employer Payroll Costs**
Foundation	$21.44	37.6%
Erection	$24.28	37.6%
Electrical	$32.17	37.6%
Management/Supervision	$43.73	37.6%
O&M Labor	**Average Wage per hour**	**Employer Payroll Costs**
Field Salaries (technicians, other)	$29.25	37.6%
Administra ive	$18.72	37.6%
Management	$46.80	37.6%

Multipliers For Economic Input-Output Analysis

MyCounty (name) **Year of Data**
MyRegion (includes) **Year of Data**
State (Name)

Jobs Per Million Dollars Change in Final Demand

Jobs Direct Multipliers	MyCounty	MyRegion
Agriculture	0.000	0.000
Mining	0.000	0.000
Construction	0.000	0.000
Manufacturing	0.000	0.000
Fabricated Metals	0.000	0.000
Machinery	0.000	0.000
Electrical Equipment	0.000	0.000
TCPU	0.000	0.000
Wholesale Trade	0.000	0.000
Retail Trade	0.000	0.000
FIRE	0.000	0.000
Misc. Services	0.000	0.000
Professional Services	0.000	0.000
Government	0.000	0.000

Personal Consumption Expenditures (PCE)

	MyCounty	MyRegion
	0.000	0.000
	0.000	0.000
	0.000	0.000
	0.000	0.000
	0.000	0.000
	0.000	0.000
	0.000	0.000
	0.000	0.000
	0.000	0.000
	0.000	0.000
	0.000	0.000
	0.000	0.000
	0.000	0.000
	0.000	0.000
Total	0.0000	0.0000

Jobs Per Million Dollars Change in Final Demand

Jobs Indirect Multipliers	MyCounty	MyRegion
Agriculture	0.000	0.000
Mining	0.000	0.000
Construction	0.000	0.000
Manufacturing	0.000	0.000
Fabricated Metals	0.000	0.000
Machinery	0.000	0.000
Electrical Equipment	0.000	0.000
TCPU	0.000	0.000
Wholesale Trade	0.000	0.000
Retail Trade	0.000	0.000
FIRE	0.000	0.000
Misc. Services	0.000	0.000
Professional Services	0.000	0.000
Government	0.000	0.000

Jobs Per Million Dollars Change in Final Demand

Jobs Induced Multipliers	MyCounty	MyRegion
Agriculture	0.000	0.000
Mining	0.000	0.000
Construction	0.000	0.000
Manufacturing	0.000	0.000
Fabricated Metals	0.000	0.000
Machinery	0.000	0.000
Electrical Equipment	0.000	0.000
TCPU	0.000	0.000
Wholesale Trade	0.000	0.000
Retail Trade	0.000	0.000
FIRE	0.000	0.000
Misc. Services	0.000	0.000
Professional Services	0.000	0.000
Government	0.000	0.000

Earnings Per Million Dollars Change in Final Demand

Earnings Direct Multipliers	MyCounty	MyRegion
Agriculture	0.000	0.000
Mining	0.000	0.000
Construction	0.000	0.000
Manufacturing	0.000	0.000
Fabricated Metals	0.000	0.000
Machinery	0.000	0.000
Electrical Equipment	0.000	0.000
TCPU	0.000	0.000
Wholesale Trade	0.000	0.000
Retail Trade	0.000	0.000
FIRE	0.000	0.000
Misc. Services	0.000	0.000
Professional Services	0.000	0.000
Government	0.000	0.000

Earnings Per Million Dollars Change in Final Demand

Earnings Indirect Multipliers	MyCounty	MyRegion
Agriculture	0.000	0.000
Mining	0.000	0.000
Construction	0.000	0.000
Manufacturing	0.000	0.000
Fabricated Metals	0.000	0.000
Machinery	0.000	0.000
Electrical Equipment	0.000	0.000
TCPU	0.000	0.000
Wholesale Trade	0.000	0.000
Retail Trade	0.000	0.000
FIRE	0.000	0.000
Misc. Services	0.000	0.000
Professional Services	0.000	0.000
Government	0.000	0.000

Earnings Per Million Dollars Change in Final Demand

Earnings Induced Multipliers	MyCounty	MyRegion
Agriculture	0.000	0.000
Mining	0.000	0.000
Construction	0.000	0.000
Manufacturing	0.000	0.000
Fabricated Metals	0.000	0.000
Machinery	0.000	0.000
Electrical Equipment	0.000	0.000
TCPU	0.000	0.000
Wholesale Trade	0.000	0.000
Retail Trade	0.000	0.000
FIRE	0.000	0.000
Misc. Services	0.000	0.000
Professional Services	0.000	0.000
Government	0.000	0.000

Output Per Million Dollars Change in Final Demand

Output Direct Multipliers	MyCounty	MyRegion
Agriculture	0.000	0.000
Mining	0.000	0.000
Construction	0.000	0.000
Manufacturing	0.000	0.000
Fabricated Metals	0.000	0.000
Machinery	0.000	0.000
Electrical Equipment	0.000	0.000
TCPU	0.000	0.000
Wholesale Trade	0.000	0.000
Retail Trade	0.000	0.000
FIRE	0.000	0.000
Misc. Services	0.000	0.000
Professional Services	0.000	0.000
Government	0.000	0.000

Output Per Million Dollars Change in Final Demand

Output Indirect Multipliers	MyCounty	MyRegion
Agriculture	0.000	0.000
Mining	0.000	0.000
Construction	0.000	0.000
Manufacturing	0.000	0.000
Fabricated Metals	0.000	0.000
Machinery	0.000	0.000
Electrical Equipment	0.000	0.000
TCPU	0.000	0.000
Wholesale Trade	0.000	0.000
Retail Trade	0.000	0.000
FIRE	0.000	0.000
Misc. Services	0.000	0.000
Professional Services	0.000	0.000
Government	0.000	0.000

Output Per Million Dollars Change in Final Demand

Output Induced Multipliers	MyCounty	MyRegion
Agriculture	0.000	0.000
Mining	0.000	0.000
Construction	0.000	0.000
Manufacturing	0.000	0.000
Fabricated Metals	0.000	0.000
Machinery	0.000	0.000
Electrical Equipment	0.000	0.000
TCPU	0.000	0.000
Wholesale Trade	0.000	0.000
Retail Trade	0.000	0.000
FIRE	0.000	0.000
Misc. Services	0.000	0.000
Professional Services	0.000	0.000
Government	0.000	0.000

Value Added Per Million Dollars Change in Final Demand

Value Added Direct Multipliers	MyCounty	MyRegion
Agriculture	0.000	0.000
Mining	0.000	0.000
Construction	0.000	0.000
Manufacturing	0.000	0.000
Fabricated Metals	0.000	0.000
Machinery	0.000	0.000
Electrical Equipment	0.000	0.000
TCPU	0.000	0.000
Wholesale Trade	0.000	0.000
Retail Trade	0.000	0.000
FIRE	0.000	0.000
Misc. Services	0.000	0.000
Professional Services	0.000	0.000
Government	0.000	0.000

Value Added Per Million Dollars Change in Final Demand

Value Added Indirect Multipliers	MyCounty	MyRegion
Agriculture	0.000	0.000
Mining	0.000	0.000
Construction	0.000	0.000
Manufacturing	0.000	0.000
Fabricated Metals	0.000	0.000
Machinery	0.000	0.000
Electrical Equipment	0.000	0.000
TCPU	0.000	0.000
Wholesale Trade	0.000	0.000
Retail Trade	0.000	0.000
FIRE	0.000	0.000
Misc. Services	0.000	0.000
Professional Services	0.000	0.000
Government	0.000	0.000

Value Added Per Million Dollars Change in Final Demand

Value Added Induced Multipliers	MyCounty	MyRegion
Agriculture	0.000	0.000
Mining	0.000	0.000
Construction	0.000	0.000
Manufacturing	0.000	0.000
Fabricated Metals	0.000	0.000
Machinery	0.000	0.000
Electrical Equipment	0.000	0.000
TCPU	0.000	0.000
Wholesale Trade	0.000	0.000
Retail Trade	0.000	0.000
FIRE	0.000	0.000
Misc. Services	0.000	0.000
Professional Services	0.000	0.000
Government	0.000	0.000

Warning

This Worksheet contains Data and Formulas that are an integral part of the JEDI model.

Although the data and formulas are available for review they must not be changed.

Any changes to the data or formulas will impact the analysis and may invalidate the model results.

To view the data and formulas simply scroll over to the adjacent columns to the right.

Number of Turbines	MW	Total Installed Cost
31	102	$1,690

Construction Cost Per KW	Project Cost	User Cost Per KW	Cost Per KW
$1,690	$172,042,000	$24.00	$24.00

Project Data

Default Values - Based on Cost Per KW from Project Data sheet

Construction Costs	**Cost**	**Cost Per KW**	**Percent of Cost**	**State Local Share**
Balance of Plant				
Materials				
Construction (concrete rebar, equip, roads and site prep)	$18,387,604	$181	10.7%	90%
Transformer	$2,080,019	$20	1.2%	0%
Electrical (drop cable, wire,)	$2,192,481	$22	1.3%	100%
HV line extension	$4,004,931	$39	2.3%	70%
Subtotal	$26,665,035	$262	15.50%	
Labor				
Foundation	$1,500,322	$15	0.9%	95%
Erection	$1,699,328	$17	1.0%	75%
Electrical	$2,476,432	$24	1.4%	70%
Management/supervision	$1,285,025	$13	0.7%	0%
Misc.	$6,537,596	$64	3.8%	50%
Subtotal	$13,498,703	$133	7.85%	
Subtotal	$40,163,738	$395	23.35%	
Equipment Costs				
Turbines (excluding blades and towers)	$76,095,413	$747	44.2%	0%
Blades	$17,814,980	$175	10.4%	0%
Towers	$19,723,728	$194	11.5%	0%
Transportation	$13,615,734	$134	7.9%	0%
Subtotal	$127,249,855	$1,250	73.96%	
Development/Other Costs				
HV Sub/Interconnection	$1,650,809	$16	1.0%	90%
Materials	$1,263,710	$12	0.7%	90%
Labor	$387,099	$4	0.2%	10%
Engineering	$1,719,593	$17	1.0%	0%
Legal Services	$937,178	$9	0.5%	100%
Land Easements	$0	$0	0.0%	100%
Site Certificate/Permitting	$438,496	$4	0.3%	100%
Subtotal	$4,746,076	$47	2.76%	
Subtotal All Costs (without sales tax)	$172,159,669	$1,691		
Sales Tax (Materials & Equipment Purchases)	$5,611,966	$55		100%
Total Project Cost	$177,771,635	$1,746		

Wind Farm Annual Operating and Maintenance Cost	Cost	Cost Per KW	Percent of Cost	Local Share
Personnel				
Field Salaries	$340,939	$3.35	13.95%	100%
Administrative	$53,760	$0.53	2.20%	100%
Management	$134,399	$1.32	5.50%	100%
Subtotal	$529,098	$5.20	21.66%	
Warranty/Maintenance Services	$0	$0.00	0.00%	0%
Total	$529,098	$5.20	21.66%	
Materials and Services		**Per KW**		
Vehicles	$54,681	$0.54	2.24%	100%
Site Maint/Misc. Services	$21,326	$0.21	0.87%	80%
Fees, Permits, Licenses	$10,663	$0.10	0.44%	100%
Utilities	$42,651	$0.42	1.75%	100%
Insurance	$410,106	$4.03	16.79%	0%
Fuel (motor vehicle gasoline)	$21,326	$0.21	0.87%	100%
Consumables/Tools and Misc. Supplies	$138,616	$1.36	5.67%	100%
Replacement Parts/Equipment/ Spare Parts Inventory	$1,214,734	$11.93	49.72%	2%
Subtotal	$1,914,102	$18.80	78.34%	
Sales Tax (Materials & Equipment Purchases)	$56,321			100%
Other Taxes/Payments	$0			100%
Total (with Sales Tax and Other Taxes/Payments	$2,499,521			
Financing (avg ann debt payment)	$19,598,347			
Equity Payment - Individuals (avg ann payment)	$0			
Equity Payment - Corporations (avg ann payment)	$0			
Land Lease	$306,900			
Total	$22,404,769			
	2,443,200		$24.00	

Other Parameters

Financial Parameters				
Debt Financing			**Local Share**	
Percentage financed	80%		0%	
Years financed (term)	10			
Interest rate	6.3%			
Average Annual Payment (Interest and Principal)	$ 19,598,347			
Equity Financing/Repayment			**Local Share**	
Percentage equity	20%			
Individual Investors (percent of equity)	0%		100%	
Corporate Investors (percent of equity)	100%		0%	
Return on equity	12%			
Repayment term (years)	10			
Tax Parameters				
Local Property/Other Tax Rate (average millage rate - $/$1,000 as	NA	0%		
Assessed Value (percent of construction cost)	NA	100%		
		100%		
Taxable Value	NA	#VALUE!		
Taxes Per MW	NA			
Local Taxes	NA	#VALUE!	100%	
Local Sales Tax Rate	4.00%		100%	
Land Lease Parameters				
Land Lease Cost (per turbine)	$9,900			
Land Lease (total cost)	$306,900			
Lease Payment Recipient (F = farmer/household, O = Other)	F	15	100%	
Warranty/Maintenance Services	not applicable			
Cost per Turbine				
Payroll Parameters	Payroll Cost	wage/hour	Payroll expense	Payroll expens

Construction Labor				
Foundation	$29.50	$21.44	$8.06	38%
Erection	$33.41	$24.28	$9.13	38%
Electrical	$44.26	$32.17	$12.10	38%
Management/Supervision	$60.17	$43.73	$16.44	38%
O&M Labor		121.61		1.50
Field Salaries (technicians, other)	$40.25	$29.25	$11.00	38%
Administrative	$25.76	$18.72	$7.04	38%
Management	$64.41	$46.80	$17.60	38%
		95		1

Margins

	Agriculture	Mining	Construction	Other Manufac
Agriculture	0.5837	0.0000	0.0000	0.0000
Mining	0.0000	0.3621	0.0000	0.0000
Construction	0.0000	0.0000	1.0000	0.0000
Manufacturing	0.0000	0.0000	0.0000	0.5584
Fabricated Metals	0.0000	0.0000	0.0000	0.0000
Machinery	0.0000	0.0000	0.0000	0.0000
Electrical Equipment	0.0000	0.0000	0.0000	0.0000
TCPU	0.0000	0.0000	0.0000	0.0000
Wholesale Trade	0.0000	0.0000	0.0000	0.0000
Retail Trade	0.0000	0.0000	0.0000	0.0000
FIRE	0.0000	0.0000	0.0000	0.0000
Misc. Services	0.0000	0.0000	0.0000	0.0000
Professional Services	0.0000	0.0000	0.0000	0.0000
Government	0.0000	0.0000	0.0000	0.0000

	Alabama	Alaska	Arizona	Arkansas
Taxes per MW		$15,651	$6,173	$9,266
State Taxes per MW	$7,575			
	$7,575			
US average cost per MW	$8,570			
US median cost per MW	$7,399			
Sales Tax	0.0400	0.0000	0.0560	0.0650
	0.0400			
	#N/A			

2016	Alabama	Alaska	Arizona	Arkansas
Property assessment ratio (%)	30%	0%	NA	20%
Average millage rate ($/$1000 assessed value)	$42.50	$0.00	NA	$46.69
Property assessment ratio (%)	NA			
Average millage rate ($/$1000 assessed value)	NA			

Source: NREL 11/2016

			Default				
Const Jobs/	102	0&M Jobs/	102			Average installed project cost per k\	
Foundation	24	Field Tech	4.1			2000	2001
Erection	24	Admin	1.0		2	1284	1031
Electrical	27	Management	1.0				
Management/su	10	Total	6			Construction Loc. /	
MW Per Turbine	86					Adj. Installed Cost	
2300							

Very Small 30,000 County Local Share	**Small 100,000 County Local Share**	**Medium 300,000 County Local Share**	**Large 400000 County Local Share**	**0**		30000 100000	
4%	12%	90%	90%	-0.429	8%	0%	(0.50)
0%	0%	0%	0%	-0.429	0%	0%	(0.50)
0%	0%	0%	100%	-0.429	0%	0%	(0.50)
0%	0%	0%	70%	-0.429	0%	0%	(0.50)
2%	9%	29%	95%	-0.429	8%	-2%	(0.50)
1%	2%	7%	75%	-0.429	1%	0%	(0.50)
1%	5%	14%	70%	-0.429	4%	-1%	(0.50)
0%	0%	0%	0%	-0.429	0%	0%	(0.50)
0%	0%	0%	50%	-0.429	0%	0%	(0.50)
0%	0%	0%	0%	-0.429	0%	0%	(0.50)
0%	0%	0%	0%	-0.429	0%	0%	(0.50)
0%	0%	0%	0%	-0.429	0%	0%	(0.50)
0%	0%	0%	0%	-0.429	0%	0%	(0.50)
1%	6%	18%	90%	-0.429	5%	-2%	(0.50)
1%	6%	18%	90%				
0%	0%	0%	10%				
0%	0%	0%	0%	-0.429	0%	0%	(0.50)
0%	0%	0%	100%	-0.429	0%	0%	(0.50)
100%	100%	100%	100%	-0.429	0%	100%	(0.50)
100%	100%	100%	100%	-0.429	0%	100%	(0.50)
100%	100%	100%	100%	-0.429	0%	100%	(0.50)

Very Small 30,000 County Local Share	Small 100,000 County Local Share	Medium 300,000 County Local Share	Large 400,000 County Local Share				
100%	100%	100%	100%	-0.429	0%	100%	(0.50)
100%	100%	100%	100%	-0.429	0%	100%	(0.50)
100%	100%	100%	100%	-0.429	0%	100%	(0.50)
				-0.429	0%	0%	(0.50)
0%	0%	0%	0%				
0%	0%	100%	100%	-0.429	0%	0%	(0.50)
1%	5%	13%	80%	-0.429	4%	-1%	(0.50)
100%	100%	100%	100%	-0.429	0%	100%	(0.50)
100%	100%	100%	100%	-0.429	0%	100%	(0.50)
0%	0%	0%	0%	-0.429	0%	0%	(0.50)
100%	100%	100%	100%	-0.429	0%	100%	(0.50)
2%	10%	24%	100%	-0.429	7%	-1%	(0.50)
0%	0%	0%	2%	-0.429	0%	0%	(0.50)

		Payroll expense					
		Govt	7.1%				
		Health/Ins/	30.5%	User Revised Data			
Default	User Revised	Total	38%	Payroll Cost	wage/hour	Payroll expense	

		Default				
23.23	28.80	61356		$29.50	$21.44	$8.06
18.34	38.05	69494		$33.41	$24.28	$9.13
18.83	18.15	92067		$44.26	$32.17	$12.10
0.00	0.00	125156		$60.17	$43.73	$16.44
Direct Plant Employees					122	
4.07	4.07	83728		$40.25	$29.25	$11.00
1.00	1.00	53586		$25.76	$18.72	$7.04
1.00	1.00	133964		$64.41	$46.80	$17.60
6.08	6.08				95	

Fabricated Meta	Machinery	Electrical Equip	TCPU	Wholesale	Retail Trade	FIRE	Other Services	Professional Serv
0.0000	0.0000	0.0000	0.0516	0.0725	0.2923	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.6305	0.0074	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0230	0.4186	0.0000	0.0000	0.0000	0.0000
1.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.6313	0.0000	0.0009	0.3679	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.5128	0.0121	0.4751	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	1.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.6887	0.3113	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0424	0.0921	0.3611	0.0000	0.5044	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

California	Colorado	Connecticut	Delaware	District of (	Florida	Georgia	Hawaii	Idaho
	$5,676							$3,842

0.0750	0.0290	0.0635	0.0000	0.0575	0.0600	0.0400	0.0400	0.0600

California	Colorado	Connecticut	Delaware	District of (	Florida	Georgia	Hawaii	Idaho
NA	NA	100%	100%	NA	100%	40%	NA	0%
NA	NA	$19.44	$23.40	NA	$17.33	$30.00	NA	$0.00

			Ann Avg Increase							
			0.00		2005-2008	0.17				
N		1284								
	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
	1225	1135	1075	1236	1496	1689	2043	2043	2043	2043
Adj.		1.17								
(per KW)		1313								

	300000			400000					
						Percent	Avg	Loc Adj	Percent
78%	-27%	(3.00)	0%	90%	0.1114	0.0881	113	113	0.0861
0%	0%	(3.00)	0%	0%	0.0126	0.0223	29	29	0.0218
0%	0%	(3.00)	100%	-300%	0.0133	0.0105	13	13	0.0103
0%	0%	(3.00)	70%	-210%	0.0243	0.0192	25	25	0.0188
					0.1615	0.1400	180	180	0.1370
19%	0%	(3.00)	66%	-170%		0.0302	39	45	0.0346
5%	0%	(3.00)	68%	-198%		0.0302	39	45	0.0346
9%	0%	(3.00)	56%	-155%		0.0333	43	50	0.0381
0%	0%	(3.00)	0%	0%		0.0181	23	27	0.0208
0%	0%	(3.00)	50%	-150%		0.0000	0	0	0.0000
						0.1119	144	168	0.1281
						0.2519	324	348	0.2650
0%	0%	(3.00)	0%	0%	0.4610	0.4306	553	553	0.4212
0%	0%	(3.00)	0%	0%	0.1079	0.1008	129	129	0.0986
0%	0%	(3.00)	0%	0%	0.1195	0.1116	143	143	0.1092
0%	0%	(3.00)	0%	0%	0.0825	0.0770	99	99	0.0754
					0.7708	0.7200	925	925	0.7043
12%	0%	(3.00)	72%	-197%	0.0100	0.0196	25	29	0.0224
0%	0%	(3.00)	0%	0%	0.0104	0.0064	8	8	0.0063
0%	0%	(3.00)	100%	-300%	0.0057	0.0005	1	1	0.0005
0%	100%	(3.00)	0%	100%	0.0000	0.0000	0	0	0.0000
0%	100%	(3.00)	0%	100%	0.0027	0.0014	2	2	0.0014
					0.0288	0.0280	36	40	0.0306
							$1,284	$1,313	
0%	100%	(3.00)	0%	100%	0.0027	0.0014	2	2	0.0014

					0.0380	-0.1119		
0%	100%	(3.00)	0%	100%				
0%	100%	(3.00)	0%	100%				
0%	100%	(3.00)	0%	100%				
0%	0%	(3.00)	0%	0%				
						0		
100%	-50%	(3.00)	0%	100%		4%	0.0319	0.0319
8%	1%	(3.00)	67%	-189%		0.0710	0.0536	0.0536
0%	100%	(3.00)	0%	100%		0.0143	0.0108	0.0108
0%	100%	(3.00)	0%	100%		0.0576	0.0435	0.0435
0%	0%	(3.00)	0%	0%		0.2013	0.1520	0.1520
0%	100%	(3.00)	0%	100%		0.0303	0.0229	0.0229
15%	2%	(3.00)	76%	-203%		0.4242	0.3203	0.3203
0%	0%	(3.00)	2%	-6%		0.1591	0.1201	0.1201
						1.000	0.755	

Payroll expense

38%	61356								
38%	69494								
38%	92067								
38%	125156								
2									per KW ad
38%	83728	340939	$34.40	$25.00	$9.40	38%	71555	291373	
38%	53586	53760	$22.02	$16.00	$6.02	38%	45795	45944	
38%	133964	134399	$55.04	$40.00	$15.04	38%	114488	114860	
1								452177	
								76921	$0.76

Government	Total
0.0000	1.0000
0.0000	1.0000
0.0000	1.0000
0.0000	1.0000
0.0000	1.0000
0.0000	1.0000
0.0000	1.0000
0.0000	1.0000
0.0000	1.0000
0.0000	1.0000
0.0000	1.0000
0.0000	1.0000
0.0000	1.0000
1.0000	1.0000

Illinois	Indiana	Iowa	Kansas	Kentucky	Louisiana	Maine	Maryland	Massachu	Michigan
$6,900	$15,798	$4,500	$2,900			$14,542	$8,727	$16,680	$18,586

0.0625	0.0700	0.0600	0.0650	0.0600	0.0500	0.0550	0.0600	0.0625	0.0600

Illinois	Indiana	Iowa	Kansas	Kentucky	Louisiana	Maine	Maryland	Massachu	Michigan
NA	NA	NA	NA	100%	10%	100%	NA	0%	NA
NA	NA	NA	NA	$11.40	$151.00	$14.72	NA	$0.00	NA

2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
1940	1940	1940	1940	1940	1940	1940	1940	1940	1940

Avg. Turbine Size (KW
2003 and earlier
After 2003

3739000

	Const. Jobs/	20	30	60	75	100	150	200	250
	Const. Jobs	55	60	75	82	85	110	135	155
0.27	Foundation	16	17	21	23	24	31	38	44
0.27	Erection	16	17	21	23	24	31	38	44
0.30	Electrical	17	19	23	26	27	34	42	48
0.16	Management	7	7	9	10	10	13	16	18
0.00									
1.00									
	Foundation Job	0.781276	0.568201	0.355125	0.310616	0.241485	0.20834	0.191768	0.176142
	Erection Jobs/M	0.781276	0.568201	0.355125	0.310616	0.241485	0.20834	0.191768	0.176142
	Electrical/MW	0.859403	0.625021	0.390638	0.341678	0.265634	0.229174	0.210944	0.193756
	Management/s	0.328045	0.238578	0.149112	0.130423	0.101396	0.087479	0.08052	0.073959
	Misc.	0.0380	0.0380	0.0380	0.0380	0.0380	0.0380	0.0380	0.0380
		0.968656	0.984455	0.991112	0.989981	0.997052	0.998344	0.998302	0.999892

	0&M Jobs/	30	60	75	100	150	200	250	
	Field Tech	2.00	2.40	3.00	4.0	6.0	8.0	9.0	
	Admin	0.30	0.60	0.75	1.0	1.0	1.3	1.3	
	Management	0.50	1.00	1.00	1.0	1.0	1.0	1.0	
	Total	2.8	4.0	4.8	6.0	8.0	10.3	11.3	
									102
	Tech/MW	0.067	0.040	0.040	0.040	0.040	0.040	0.036	0.040
	Admin/MW	0.010	0.010	0.010	0.010	0.007	0.007	0.005	0.010
	Mgmt/MW	0.017	0.017	0.013	0.010	0.007	0.005	0.004	0.010
		0.983	1.000	1.000	1.000	1.000	0.998	1.000	1.000
		1.000	1.000	1.000	0.992	1.000	0.996	1.000	0.992
		1.000	0.985	0.989	0.992	0.994	0.996	1.000	0.992
0.0286	65575	54681							
0.0111	110356	21326							
0.0056	22138	10663							
0.0223	89535	42651							
0.2143	312725	410106							
0.0111	47064	21326							
0.0724	658984	138616							
0.6346	247119	1214734							
	1553496	1914102							
		56321							

just

Minnesota	Mississippi	Missouri	Montana	MyCounty	MyRegion	Nebraska	Nevada	New Hamp	New Jerse
$2,800			$14,857			$3,942	$7,279		

0.0688	0.0700	0.0423	0.0000	#N/A	#N/A	0.0550	0.0685	0.0000	0.0700

Minnesota	Mississippi	Missouri	Montana	MyCounty	MyRegion	Nebraska	Nevada	New Hamp	New Jerse
0%	15%	NA	3%	3%	3%	0%	35%	NA	100%
$0.00	$112.57	NA	$435.00	$435.00	$435.00	$0.00	$31.60	NA	$23.51

	2022	2023	2024	2025	2026	2027	2028	2029	2030
	1940	1940	1940	1940	1940	1940	1940	1940	1940

			O&M Cost		
∨)		#VALUE!	<=20 MW	$25.76	per KW
	700		100 MW	$20.76	per KW
	1500				

		102				
	300	100 MW		Default	User Revised	
	185		Total Jobs	Local Jobs	Local Jobs	
	53		24	23	29	29
	53		24	18	38	38
	58		27	19	18	18
	22		10	0	0	0
			86	60	85	85
		85	Default	User Revised wages		
	0.175195	0.240205	1500322	3534084		
	0.175195	0.240205	1699328	5288490		
	0.192715	0.264226	2476432	3342029		
	0.073562	0.100858	1285025	1001249		
	0.0380	0.038	6537596	13165852		
	1.000000	100 0.997052				

100
7
1
1

MW

0.070	Tech labor per MW	0.040	O&M Cost per KW	$20.76
0.010	Admin labor per MW	0.010	O&M Cost Adj functio	0.9973
0.010	Mgmt labor per MW	0.010		

26
21

New Mexic	New York	North Carc	North Dako	Ohio	Oklahoma	Oregon	Pennsylva	Rhode Isla	South Car	South Dak	Tennesse	Texas
$10,152	$7,575	$10,708	$2,813	$21,968	$6,435		$1,750			$4,878	$6,864	$10,986

0.0513	0.0400	0.0475	0.0500	0.0575	0.0450	0.0000	0.0600	0.0700	0.0600	0.0450	0.0700	0.0625

New Mexic	New York	North Carc	North Dako	Ohio	Oklahoma	Oregon	Pennsylva	Rhode Isla	South Car	South Dak	Tennesse	Texas
NA	NA	100%	NA	0%	NA	NA	NA	100%	11%	0%	55%	NA
NA	NA	$6.52	NA	$0.00	NA	NA	NA	$27.62	$467.00	$0.00	$34.00	NA

United Sta	Utah	Vermont	Virginia	Washingto	West Virgi	Wisconsin	Wyoming
	$11,120		$9,900		$1,515	$1,939	$7,519

0	0.0600	0.0430	0.0650	0.0600	0.0500	0.0400	0.0515	#N/A

United Sta	Utah	Vermont	Virginia	Washingto	West Virgi	Wisconsin	Wyoming
NA	0%	100%	0%	NA	0%	0%	NA
NA	$0.00	$6.68	$0.00	NA	$0.00	$0.00	NA

Warning

This Worksheet contains Data and Formulas that are an integral part of the JEDI model.

Although the data and formulas are available for review they must not be changed.

Any changes to the data or formulas will impact the analysis and may invalidate the model results.

To view the data and formulas simply scroll over to the adjacent columns to the right.

Conversion to Year 2014 dollars and back for consistency with multiplier data.

Year of Multiplier Data	2014		Region of Analysis	**NEW YORK**	
Year of Construction $s	2017				
	Deflator	0.938			
	Inflator	1.066			

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
2005$	1.0000	1.0325	1.0606	1.0826	1.0952	1.1048	1.1273	1.1478	1.1676	1.1875	1.2036	1.2226	1.2446	1.2686
	1.000	0.969	0.943	0.924	0.913	0.905	0.887	0.871	0.857	0.842	0.831	0.818	0.804	0.788
2006$	0.9685	1.0000	1.0272	1.0485	1.0607	1.0700	1.0917	1.1117	1.1308	1.1501	1.1657	1.1841	1.2053	1.2287
	1.033	1.000	0.974	0.954	0.943	0.935	0.916	0.900	0.884	0.870	0.858	0.845	0.830	0.814
2007$	0.9429	0.9736	1.0000	1.0208	1.0326	1.0417	1.0629	1.0823	1.1009	1.1197	1.1349	1.1528	1.1735	1.1962
	1.061	1.027	1.000	0.980	0.968	0.960	0.941	0.924	0.908	0.893	0.881	0.867	0.852	0.836
2008$	0.9237	0.9538	0.9797	1.0000	1.0116	1.0205	1.0413	1.0603	1.0785	1.0969	1.1118	1.1294	1.1496	1.1719
	1.083	1.049	1.021	1.000	0.989	0.980	0.960	0.943	0.927	0.912	0.900	0.885	0.870	0.853
2009$	0.9131	0.9428	0.9684	0.9885	1.0000	1.0088	1.0293	1.0481	1.0661	1.0843	1.0990	1.1164	1.1364	1.1584
	1.095	1.061	1.033	1.012	1.000	0.991	0.972	0.954	0.938	0.922	0.910	0.896	0.880	0.863
2010$	0.9051	0.9346	0.9600	0.9799	0.9913	1.0000	1.0203	1.0390	1.0568	1.0748	1.0894	1.1067	1.1265	1.1483
	1.105	1.070	1.042	1.021	1.009	1.000	0.980	0.963	0.946	0.930	0.918	0.904	0.888	0.871
2011$	0.8871	0.9160	0.9408	0.9604	0.9715	0.9801	1.0000	1.0183	1.0358	1.0534	1.0677	1.0846	1.1041	1.1254
	1.127	1.092	1.063	1.041	1.029	1.020	1.000	0.982	0.966	0.949	0.937	0.922	0.906	0.889
2012$	0.8712	0.8995	0.9240	0.9431	0.9541	0.9625	0.9821	1.0000	1.0172	1.0345	1.0486	1.0652	1.0842	1.1052
	1.148	1.112	1.082	1.060	1.048	1.039	1.018	1.000	0.983	0.967	0.954	0.939	0.922	0.905
2013$	0.8565	0.8843	0.9084	0.9272	0.9380	0.9463	0.9655	0.9831	1.0000	1.0171	1.0309	1.0472	1.0659	1.0866
	1.168	1.131	1.101	1.079	1.066	1.057	1.036	1.017	1.000	0.983	0.970	0.955	0.938	0.920
2014$	0.842	0.870	0.893	0.912	0.922	0.930	0.949	0.967	0.983	1.000	1.014	1.030	1.048	1.068
	1.188	1.150	1.120	1.097	1.084	1.075	1.053	1.035	1.017	1.000	0.987	0.971	0.954	0.936
2015$	0.831	0.858	0.881	0.900	0.910	0.918	0.937	0.954	0.970	0.987	1.000	1.016	1.034	1.054
	1.204	1.166	1.135	1.112	1.099	1.089	1.068	1.049	1.031	1.014	1.000	0.984	0.967	0.949
2016$	0.818	0.845	0.867	0.885	0.896	0.904	0.922	0.939	0.955	0.971	0.984	1.000	1.018	1.038
	1.223	1.184	1.153	1.129	1.116	1.107	1.085	1.065	1.047	1.030	1.016	1.000	0.982	0.964
2017$	0.804	0.830	0.852	0.870	0.880	0.888	0.906	0.922	0.938	0.954	0.967	0.982	1.000	1.019
	1.245	1.205	1.174	1.150	1.136	1.127	1.104	1.084	1.066	1.048	1.034	1.018	1.000	0.981
2018$	0.788	0.814	0.836	0.853	0.863	0.871	0.889	0.905	0.920	0.936	0.949	0.964	0.981	1.000
	1.269	1.229	1.196	1.172	1.158	1.148	1.125	1.105	1.087	1.068	1.054	1.038	1.019	1.000
2019$	0.773	0.798	0.820	0.837	0.846	0.854	0.871	0.887	0.902	0.918	0.930	0.945	0.962	0.980
	1.294	1.253	1.220	1.195	1.182	1.171	1.148	1.127	1.108	1.090	1.075	1.058	1.040	1.020
2020$	0.758	0.782	0.804	0.820	0.830	0.837	0.854	0.870	0.885	0.900	0.912	0.926	0.943	0.961
	1.320	1.278	1.245	1.219	1.205	1.195	1.171	1.150	1.131	1.112	1.097	1.080	1.061	1.041

Source: Deflators and Inflators derived from data contained in the Budget of the United States Government: Table 10.1 - Gross Domestic Product and Deflators Used in the Historical Tables 1940-2020.
https://www.whitehouse.gov/omb/budget/Historicals
Updated November 2016. Deflators for 2021-2040 assume average annual inflation rate derived from 2014-2020 GDP values.

19	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
18	2	4	6	8	10	12	14	16	18	20	22	24	26
	3	5	7	9	11	13	15	17	19	21	23	25	27

2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	
1.2941	1.3200	1.3434	1.367	1.391	1.416	1.441	1.466	1.492	1.519	1.546	1.573	1.601
0.773	0.758	0.744	0.732	0.719	0.706	0.694	0.682	0.670	0.658	0.647	0.636	0.625
1.2533	1.2784	1.3010	1.324	1.348	1.371	1.396	1.420	1.445	1.471	1.497	1.523	1.550
0.798	0.820	0.769	0.755	0.742	0.729	0.717	0.704	0.692	0.680	0.668	0.656	0.645
1.2202	1.2446	1.2666	1.289	1.312	1.335	1.359	1.383	1.407	1.432	1.457	1.483	1.509
0.820	0.804	0.790	0.776	0.762	0.749	0.736	0.723	0.711	0.698	0.686	0.674	0.663
1.1953	1.2193	1.2409	1.263	1.285	1.308	1.331	1.355	1.379	1.403	1.428	1.453	1.479
0.837	0.820	0.806	0.792	0.778	0.765	0.751	0.738	0.725	0.713	0.700	0.688	0.676
1.1816	1.2053	1.2266	1.248	1.270	1.293	1.316	1.339	1.363	1.387	1.411	1.436	1.462
0.846	0.830	0.815	0.801	0.787	0.774	0.760	0.747	0.734	0.721	0.709	0.696	0.684
1.1713	1.1948	1.2159	1.237	1.259	1.282	1.304	1.327	1.351	1.375	1.399	1.424	1.449
0.854	0.837	0.822	0.808	0.794	0.780	0.767	0.753	0.740	0.727	0.715	0.702	0.690
1.1480	1.1710	1.1917	1.213	1.234	1.256	1.278	1.301	1.324	1.347	1.371	1.395	1.420
0.871	0.854	0.839	0.825	0.810	0.796	0.782	0.769	0.755	0.742	0.729	0.717	0.704
1.1274	1.1500	1.1703	1.191	1.212	1.234	1.255	1.278	1.300	1.323	1.347	1.370	1.395
0.887	0.870	0.855	0.840	0.825	0.811	0.797	0.783	0.769	0.756	0.743	0.730	0.717
1.1083	1.1306	1.1506	1.171	1.192	1.213	1.234	1.256	1.278	1.301	1.324	1.347	1.371
0.902	0.885	0.869	0.854	0.839	0.825	0.810	0.796	0.782	0.769	0.755	0.742	0.729
1.090	1.112	1.131	1.151	1.172	1.192	1.213	1.235	1.257	1.279	1.302	1.325	1.348
0.918	0.900	0.884	0.869	0.854	0.839	0.824	0.810	0.796	0.782	0.768	0.755	0.742
1.075	1.097	1.116	1.136	1.156	1.176	1.197	1.218	1.240	1.262	1.284	1.307	1.330
0.930	0.912	0.896	0.880	0.865	0.850	0.835	0.821	0.807	0.793	0.779	0.765	0.752
1.058	1.080	1.099	1.118	1.138	1.158	1.179	1.199	1.221	1.242	1.264	1.287	1.309
0.945	0.926	0.910	0.894	0.879	0.864	0.849	0.834	0.819	0.805	0.791	0.777	0.764
1.040	1.061	1.079	1.099	1.118	1.138	1.158	1.178	1.199	1.220	1.242	1.264	1.286
0.962	0.943	0.926	0.910	0.895	0.879	0.864	0.849	0.834	0.819	0.805	0.791	0.777
1.020	1.041	1.059	1.078	1.097	1.116	1.136	1.156	1.176	1.197	1.218	1.240	1.262
0.980	0.961	0.944	0.928	0.912	0.896	0.880	0.865	0.850	0.835	0.821	0.807	0.793
1.000	1.020	1.038	1.057	1.075	1.094	1.114	1.133	1.153	1.174	1.194	1.216	1.237
1.000	0.980	0.963	0.947	0.930	0.914	0.898	0.882	0.867	0.852	0.837	0.823	0.808
0.980	1.000	1.018	1.036	1.054	1.073	1.092	1.111	1.131	1.151	1.171	1.192	1.213
1.020	1.000	0.983	0.966	0.949	0.932	0.916	0.900	0.885	0.869	0.854	0.839	0.825

2018	2019	2020
28	30	32
29	31	33

1.629	1.658	1.687	1.717	1.748	1.778	1.810	1.842	1.875
0.614	0.603	0.593	0.582	0.572	0.562	0.553	0.543	0.534
1.578	1.606	1.634	1.663	1.692	1.722	1.753	1.784	1.815
0.634	0.623	0.612	0.601	0.591	0.581	0.571	0.561	0.551
1.536	1.563	1.591	1.619	1.648	1.677	1.707	1.737	1.767
0.651	0.640	0.629	0.618	0.607	0.596	0.586	0.576	0.566
1.505	1.532	1.559	1.586	1.614	1.643	1.672	1.701	1.732
0.665	0.653	0.642	0.631	0.620	0.609	0.598	0.588	0.578
1.488	1.514	1.541	1.568	1.596	1.624	1.653	1.682	1.712
0.672	0.661	0.649	0.638	0.627	0.616	0.605	0.595	0.584
1.475	1.501	1.527	1.554	1.582	1.610	1.638	1.667	1.697
0.678	0.666	0.655	0.643	0.632	0.621	0.610	0.600	0.589
1.445	1.471	1.497	1.523	1.550	1.578	1.606	1.634	1.663
0.692	0.680	0.668	0.657	0.645	0.634	0.623	0.612	0.601
1.419	1.444	1.470	1.496	1.522	1.549	1.577	1.605	1.633
0.705	0.692	0.680	0.669	0.657	0.645	0.634	0.623	0.612
1.395	1.420	1.445	1.471	1.497	1.523	1.550	1.578	1.605
0.717	0.704	0.692	0.680	0.668	0.657	0.645	0.634	0.623
1.372	1.396	1.421	1.446	1.472	1.498	1.524	1.551	1.579
0.729	0.716	0.704	0.692	0.680	0.668	0.656	0.645	0.634
1.354	1.378	1.402	1.427	1.452	1.478	1.504	1.530	1.557
0.739	0.726	0.713	0.701	0.689	0.677	0.665	0.654	0.642
1.333	1.356	1.380	1.404	1.429	1.455	1.480	1.507	1.533
0.751	0.737	0.725	0.712	0.700	0.688	0.676	0.664	0.652
1.309	1.332	1.356	1.380	1.404	1.429	1.454	1.480	1.506
0.764	0.751	0.738	0.725	0.712	0.700	0.688	0.676	0.664
1.284	1.307	1.330	1.354	1.377	1.402	1.427	1.452	1.478
0.779	0.765	0.752	0.739	0.726	0.713	0.701	0.689	0.677
1.259	1.281	1.304	1.327	1.350	1.374	1.399	1.423	1.449
0.794	0.781	0.767	0.754	0.741	0.728	0.715	0.703	0.690
1.234	1.256	1.278	1.301	1.324	1.347	1.371	1.395	1.420
0.810	0.796	0.782	0.769	0.755	0.742	0.729	0.717	0.704

Warning

This Worksheet contains Data and Formulas that are an integral part of the JEDI model.

Although the data and formulas are available for review they must not be changed.

Any changes to the data or formulas will impact the analysis and may invalidate the model results.

To view the data and formulas simply scroll over to the adjacent columns to the right.

Economic Impact Analysis for **NEW YORK** **Wind Power Plant**

Project Construction Costs

	Cost	Purchased Local	Local $ Spending					
Balance of Plant								
Materials								
Construction (concrete rebar	$18,387,604	90%	$16,548,844					
Transformer	$2,080,019	0%	$0					
Electrical (drop cable, wire,)	$2,192,481	100%	$2,192,481					
HV line extension	$4,004,931	70%	$2,803,452					
Subtotal	$26,665,035		$21,544,776					
Labor								
Foundation	$3,534,084	50%	$1,767,042					
Erection	$5,288,490	50%	$2,644,245					
Electrical	$3,342,029	50%	$1,671,015					
Management/supervision	$1,001,249	0%	$0					
Misc.	$0	50%	$0					
Subtotal	$13,165,852	0%	$6,082,302	6082302				
Subtotal	$39,830,887		$27,627,078					
Equipment Costs								
Turbines (excluding blades ar	$76,095,413	0%	$0					
Blades	$17,814,980	0%	$0					
Towers	$19,723,728	0%	$0					
Transportation	$13,615,734	0%	$0					
Subtotal	$127,249,855		$0	0.894		0.106		
Development/Other Costs				Labor	Materials	Design		0.234
HV Sub/Interconnection								
Materials	$1,263,710	90%	$1,137,339		1137339			
Labor	$2,888,218	50%	$1,444,109	1291737		152372		
Engineering	$1,619,072	50%	$809,536					
Legal Services	$937,178	100%	$937,178		-4 21			
Land Easements	$0	100%	$0		7			
Site Certificate	$438,496	100%	$438,496	Eng. & Prof. Svcs &	12	6		
Subtotal	$7,146,673		$4,766,658	Other Sectors (not (	0			
Subtotal All Costs (without	$174,227,416		$32,393,736					
Sales Tax (Materials & Equipment Purchases)	$5,611,966	100%	$5,611,966					
Total	$179,839,382		$32,393,736	Manufacturing Jobs	7	5		
	$1,767				0.1	0.0		0 0
Year	2017	Convert to 2014 dollars	0 94		7	5		4
Construction Costs Local Demand		0			75991			

	Demand	Total	Adj Demand			**Jobs**	**Jobs**	**Jobs**
			Millions of 2014 dollars		41785	**Direct**	**Indirect**	**Induced**
Agriculture	$0	$0	$0 000		$1,211,778	0 0	0.0	0 0
Mining	$0	$0	$0 000		Const	0 0	0.0	0 0
Construction	$26,726,334	$26,726,334	$25 072		$5.7	91 0	146.4	48.1
Manufacturing	$3,329,820	$3,329,820	$3.124		$1 2	7 0	4.8	3 6
Fabricated Metals	$0	$0	$0 000		$18.2	0 0	0.0	0 0
Machinery	$0	$0	$0 000			0 0	0.0	0 0
Electrical Equipment	$0	$0	$0 000			0 0	0.0	0 0
TCPU	$0	$0	$0 000			0 0	0.0	0 0
Wholesale Trade	$0	$0	$0 000			0 0	0.0	0 0
Retail Trade	$0	$0	$0 000			0 0	0.0	0 0
F RE	$0	$0	$0 000			0 0	0.0	0 0
Misc. Services	$0	$0	$0 000			0 0	0.0	0 0
Professional Services	$1,899,086	$1,899,086	$1.782			11.7	3.2	4 0
Government	$6,050,462	$6,050,462	$5 676			0 0	2.5	16 0
Total	$38,005,702	$38,005,702	$35 65			109.7	156.9	71.7

Wind Farm Annual Operating and Maintenance Costs	Cost	Local Share	Empl Earnings	Local $ Spending	Gross incl benefits Empl Earnings	Govt Share	Health Ben, etc.	
Variable Costs								
Personnel								
Field Salaries	$340,939	100%	$212,725	$212,725	$316,669	$24,270	$103,943	
Adminstrative	$53,760	100%	$33,543	$33,543	$49,933	$3,827	$16,390	
Manangement	$134,399	100%	$83,857	$83,857	$124,832	$9,567	$40,975	
Subtotal	$529,098		$330,125	$330,125	$491,433	$37,665	$161,308	$529,098
Warranty/Maintenance Servic	$0							
Total	$529,098							
Fixed Costs								
Materials and Services								
Vehicles	$54,681	100%		$54,681				
Misc. Services	$21,326	100%		$21,326				
Fees, Permits, Licenses	$10,663	100%		$10,663				
Utilities	$42,651	100%		$42,651				
Insurance	$410,106	0%		$0				
Fuel (gals)	$21,326	100%		$21,326				
Tools and Misc. Supplies	$138,616	100%		$138,616				
Spare Parts Inventory	$1,214,734	2%		$24,295				
Subtotal	$1,914,102	$18.80		$313,556				
Sales Tax (Materials & Equipment Purchases)	$56,321	100%		$56,321				
Other Taxes/Payments	$0	100%		$0				
Financing (debt payment)	$19,826,305	0%		$0		$0	Debt Pmt - Local share Avg Ann Interest	
Equity Payment - Individuals	$0	100%		$0		$0	Equity Pmt - Individual Share Avg Ann Interest	
Equity Payment - Corporate	$6,365,745	0%		$0		$0	Equity Pmt - Corporate Share Avg Ann Interest	
Property Taxes	$743,140	100%		$743,140		Y		Y
Land Lease	$306,900	100%		$306,900	$306,900	To House	$0 To F RE	
Total	$29,741,611			$1,949,016				
Total (without debt, equity, prop	$2,499,521	$ 27,242,090		$842,654	$ 1,106,361			
Total cost per KW	$24 55							
	Local Share	1 0	0.5					

Annual Operations and Maintenance Costs Local Demand - margined

	Demand	PCE-Land Lease To Farm/House	PCE -Equity To Individuals	Total w/o Plant Empl	Adj Demand - Million 2014 Dollars		
Agriculture	$0	$921	$0	$921	$0.001		
Mining	$0	$0	$0	$0	$0.000		
Construction	$0	$0	$0	$0	$0.000		
Manufacturing	$10,175	$9,207	$0	$19,382	$0.018		
Fabricated Metals	$0	$0	$0	$0	$0.000		
Machinery	$0	$0	$0	$0	$0.000		
Electrical Equipment	$3,114	$0	$0	$3,114	$0.003		
TCPU	$44,049	$11,662	$0	$55,711	$0.052		
Wholesale Trade	$160,289	$14,424	$0	$174,714	$0.164		
Retail Trade	$74,509	$28,849	$0	$103,358	$0.097		
F RE	$161,308	$43,887	$0	$205,195	$0.192		
Misc. Services	$10,756	$192,119	$0	$202,876	$0.190		
Professional Services	$0	$3,069	$0	$3,069	$0.003		
Government	$847,789	$2,455	$0	$850,244	$0.798		
Total	$1,311,991	$306,593	$0	$1,618,584	$1 52		Total
Plant Employees		Earnings - Gross		$529,098	$0.000		
Plant Employees		Employee - (SSI, Me	7%	$37,665	0%		
Field Salaries/Technicians	4 07	Other benefits	30%	$161,308	100%	Without Plant Employees	
Administrative/Secretarial	1 00	Earnings (minus taxes, benefits, etc)		$330,125		With Plant Employees	
Site Management	1 00						
Total	6.1						

Plant Employee Spending	PCE Plant Emp	Adj Demand - Million 2014 Dollars
Agriculture	$990	$0.001
Mining	$0	$0.000
Construction	$0	$0.000
Manufacturing	$9,904	$0.009
Fabricated Metals	$0	$0.000
Machinery	$0	$0.000
Electrical Equipment	$0	$0.000
TCPU	$12,545	$0.012
Wholesale Trade	$15,516	$0.015
Retail Trade	$31,032	$0.029
F RE	$208,516	$0.196
Misc. Services	$206,658	$0.194
Professional Services	$3,301	$0.003
Government	$2,641	$0.002
Total	$491,103	$0.461

Annual O&M Costs Local Demand		Construction Costs Local Demand	
	Demand	Demand	
Agriculture	$0	$0	$0
Mining	$0	$0	$0
Construction	$0	$26,726,334	$50,396,934
Manufacturing	$18,221	$3,329,820	$7,638,698
Fabricated Metals	$0	$0	$0
Machinery	$0	$0	$0
Electrical Equipment	$6,074	$0	$0
TCPU	$42,651	$0	$0
Wholesale Trade	$0	$0	$0
Retail Trade	$214,622	$0	$3,686,000
F RE	$161,308	$0	$0
Misc. Services	$21,326	$0	$3,686,000
Professional Services	$0	$1,899,086	$2,159,282
Government	$847,789	$6,050,462	$1,005,922
Total	$1,311,991	$38,005,702	$68,572,836

Agriculture
Mining
Construction
Manufacturing
Fabricated
Machinery
Electrical
TCPU
Wholesale
Retail Trade
F RE
Misc. Services
Professional
Services
Government
Plant
Employees
Total

Inflate to **2017**

Default
From DefaultData
Debt - Loan Repayment Schedule

Year	Interest Pmt	Principal Pmt	Total Pmt
1	$ 8,959,690	$ 10,638,657	$ 19,598,347
2	$ 8,289,455	$ 11,308,892	$ 19,598,347
3	$ 7,576,995	$ 12,021,353	$ 19,598,347
4	$ 6,819,650	$ 12,778,698	$ 19,598,347
5	$ 6,014,592	$ 13,583,756	$ 19,598,347
6	$ 5,158,815	$ 14,439,532	$ 19,598,347
7	$ 4,249,124	$ 15,349,223	$ 19,598,347
8	$ 3,282,123	$ 16,316,224	$ 19,598,347
9	$ 2,254,201	$ 17,344,146	$ 19,598,347
10	$ 1,161,520	$ 18,436,827	$ 19,598,347
11	$ -	$ -	$ -
12	$ -	$ -	$ -
13	$ -	$ -	$ -
14	$ -	$ -	$ -
15	$ -	$ -	$ -
16	$ -	$ -	$ -
17	$ -	$ -	$ -
18	$ -	$ -	$ -
19	$ -	$ -	$ -
20	$ -	$ -	$ -
21	$ -	$ -	$ -
22	$ -	$ -	$ -
23	$ -	$ -	$ -
24	$ -	$ -	$ -
25	$ -	$ -	$ -
26	$ -	$ -	$ -
27	$ -	$ -	$ -
28	$ -	$ -	$ -
29	$ -	$ -	$ -
30	$ -	$ -	$ -
Total	$ 53,766,166	$ 142,217,308	$ 195,983,474
AvgAnn	$ 5,376,617	$ 14,221,731	$ 19,598,347

Default
From DefaultData
Equity - Individual Investment Repayment Schedule

Year	Interest Pmt	Principal Pmt	Total Pmt
1	$ -	$ -	$ -
2	$ -	$ -	$ -
3	$ -	$ -	$ -
4	$ -	$ -	$ -
5	$ -	$ -	$ -
6	$ -	$ -	$ -
7	$ -	$ -	$ -
8	$ -	$ -	$ -
9	$ -	$ -	$ -
10	$ -	$ -	$ -
11	$ -	$ -	$ -
12	$ -	$ -	$ -
13	$ -	$ -	$ -
14	$ -	$ -	$ -
15	$ -	$ -	$ -
16	$ -	$ -	$ -
17	$ -	$ -	$ -
18	$ -	$ -	$ -
19	$ -	$ -	$ -
20	$ -	$ -	$ -
21	$ -	$ -	$ -
22	$ -	$ -	$ -
23	$ -	$ -	$ -
24	$ -	$ -	$ -
25	$ -	$ -	$ -
26	$ -	$ -	$ -
27	$ -	$ -	$ -
28	$ -	$ -	$ -
29	$ -	$ -	$ -
30	$ -	$ -	$ -
Total	$ -	$ -	$ -
AvgAnn	$ -	$ -	$ -

User Modified (from Project Data worksheet - based on loan parameters)
Loan Repayment Schedule

	Interest Pmt	Principal Pmt	Total Pmt
1	$ 9,063,905	$ 10,762,400	$ 19,826,305
2	$ 8,385,874	$ 11,440,432	$ 19,826,305
3	$ 7,665,126	$ 12,161,179	$ 19,826,305
4	$ 6,898,972	$ 12,927,333	$ 19,826,305
5	$ 6,084,550	$ 13,741,755	$ 19,826,305
6	$ 5,218,820	$ 14,607,485	$ 19,826,305
7	$ 4,298,548	$ 15,527,757	$ 19,826,305
8	$ 3,320,299	$ 16,506,006	$ 19,826,305
9	$ 2,280,421	$ 17,545,884	$ 19,826,305
10	$ 1,175,030	$ 18,651,275	$ 19,826,305
11	$ -	$ -	$ -
12	$ -	$ -	$ -
13	$ -	$ -	$ -
14	$ -	$ -	$ -
15	$ -	$ -	$ -
16	$ -	$ -	$ -
17	$ -	$ -	$ -
18	$ -	$ -	$ -
19	$ -	$ -	$ -
20	$ -	$ -	$ -
21	$ -	$ -	$ -
22	$ -	$ -	$ -
23	$ -	$ -	$ -
24	$ -	$ -	$ -
25	$ -	$ -	$ -
26	$ -	$ -	$ -
27	$ -	$ -	$ -
28	$ -	$ -	$ -
29	$ -	$ -	$ -
30	$ -	$ -	$ -
Total	$ 54,391,546	$ 143,871,506	$ 198,263,051
AvgAnn	$ 5,439,155	$ 14,387,151	$ 19,826,305

User Modified (from Project Data worksheet - based on equity investment pa
Equity - Individual Investment Repayment Schedule

	Interest Pmt	Principal Pmt	Total Pmt
1	$ -	$ -	$ -
2	$ -	$ -	$ -
3	$ -	$ -	$ -
4	$ -	$ -	$ -
5	$ -	$ -	$ -
6	$ -	$ -	$ -
7	$ -	$ -	$ -
8	$ -	$ -	$ -
9	$ -	$ -	$ -
10	$ -	$ -	$ -
11	$ -	$ -	$ -
12	$ -	$ -	$ -
13	$ -	$ -	$ -
14	$ -	$ -	$ -
15	$ -	$ -	$ -
16	$ -	$ -	$ -
17	$ -	$ -	$ -
18	$ -	$ -	$ -
19	$ -	$ -	$ -
20	$ -	$ -	$ -
21	$ -	$ -	$ -
22	$ -	$ -	$ -
23	$ -	$ -	$ -
24	$ -	$ -	$ -
25	$ -	$ -	$ -
26	$ -	$ -	$ -
27	$ -	$ -	$ -
28	$ -	$ -	$ -
29	$ -	$ -	$ -
30	$ -	$ -	$ -
Total	$ -	$ -	$ -
AvgAnn	$ -	$ -	$ -

Eng. & Prof. Svcs	$0.790	1.21		Eng. & Prof. Svc	$1 899	$3.2
Other Sectors (no	$0 000			Other Sectors (r	$0 000	
Mfg W&S Earning	$0 583	$0.370		Mfg Output	$3 330	$1.062
0 2				1		
15	1	0	0	1	3	1

	2014 Dollars				2014 Dollars	
Jobs	**Earnings**				**Output**	
Total	**Direct**	**Indirect**	**Induced**	**Total**	**Direct**	**Indirect**
0	$0 000	$0.000	$0.000	$0 000	$0 000	$0.000
0	$0 000	$0.000	$0.000	$0 000	$0 000	$0.000
286	$6 918	$9.530	$3.259	$19.707	$6 918	$27.055
15	$0 547	$0.347	$0.244	$1.137	$3.124	$0.996
0	$0 000	$0.000	$0.000	$0 000	$0 000	$0.000
0	$0 000	$0.000	$0.000	$0 000	$0 000	$0.000
0	$0 000	$0.000	$0.000	$0 000	$0 000	$0.000
0	$0 000	$0.000	$0.000	$0 000	$0 000	$0.000
0	$0 000	$0.000	$0.000	$0 000	$0 000	$0.000
0	$0 000	$0.000	$0.000	$0 000	$0 000	$0.000
0	$0 000	$0.000	$0.000	$0 000	$0 000	$0.000
19	$0.741	$0.257	$0.273	$1 270	$1.782	$0.643
18	$0 000	$0.227	$1.232	$1.459	$0 000	$0.590
338.4	$8 205	$10.361	$5.007	$23 573	$11 823	$29.285

$8.75	$11.04	$5.34	$25.13	$12 60	$31.21

Default Land Lease (below)		User Land Lease (below)	
F	0	F	O
306900	0	$306,900	$0

Without Plant Employees

2014 Dollars

Jobs				Earnings		
Direct	**Indirect**	**Induced**	**Total**	**Direct**	**Indirect**	**Induced**
0.01	0.00	0 00	0 01	$0.000	$0 000	$0 000
0.00	0.00	0 00	0 00	$0.000	$0 000	$0 000
0.00	0.00	0 00	0 00	$0.000	$0 000	$0 000
0.04	0.03	0 02	0 09	$0.003	$0 002	$0 001
0.00	0.00	0 00	0 00	$0.000	$0 000	$0 000
0.00	0.00	0 00	0 00	$0.000	$0 000	$0 000
0.01	0.01	0 00	0 02	$0.001	$0 000	$0 000
0.19	0.12	0 09	0 39	$0.014	$0 009	$0 006
0.53	0.27	0 30	1 09	$0.058	$0 024	$0 022
1.06	0.16	0 23	1.45	$0.044	$0 013	$0 016
0.54	0.23	0 36	1.13	$0.068	$0 021	$0 024
0.87	0.30	0 50	1 67	$0.105	$0 029	$0 037
0.02	0.01	0 01	0 03	$0.001	$0 000	$0 000
0.00	0.35	2 24	2 60	$0.000	$0 032	$0.173
3.25	1.47	3.75	8.48	$0.295	$0.130	$0 281

Inflate to **2017 Dollars**

3 25	1.47	3.75	8.48	$0.314	$0.138	$0.299
9 33	2.14	4.76	16.23	$0 805	$0 202	$0.376

Plant Employees Only

Jobs				Earnings		
Direct	**Indirect**	**Induced**	**Total**	**Direct**	**Indirect**	**Induced**
	0.00	0 00	0 00		$0 000	$0 000
	0.00	0 00	0 00		$0 000	$0 000
	0.00	0 00	0 00		$0 000	$0 000
	0.01	0 01	0 03		$0 001	$0 001
	0.00	0 00	0 00		$0 000	$0 000
	0.00	0 00	0 00		$0 000	$0 000
	0.00	0 00	0 00		$0 000	$0 000
	0.03	0 02	0 05		$0 002	$0 001
	0.02	0 03	0 05		$0 002	$0 002
	0.05	0 07	0.12		$0 004	$0 005
	0.23	0 37	0 60		$0 021	$0 025
	0.31	0 51	0 81		$0 029	$0 038
	0.01	0 01	0 01		$0 000	$0 000
	0.00	0 01	0 01		$0 000	$0 001
6 078	0.66	1 01	7.75	$0.461	$0 060	$0 072

Inflate to **2017 Dollars**

$2,136			$0.491	$0 064	$0.077	

With Plant Employees

Jobs				Earnings		
Direct	**Indirect**	**Induced**	**Total**	**Direct**	**Indirect**	**Induced**
0 01	0.00	0.00	0.01	$0.000	$0 000	$0.000
0 00	0.00	0.00	0.00	$0.000	$0 000	$0.000
0 00	0.00	0.00	0.00	$0.000	$0 000	$0.000
0 04	0.04	0.03	0.11	$0.003	$0 003	$0.002
0 00	0.00	0.00	0.00	$0.000	$0 000	$0.000
0 00	0.00	0.00	0.00	$0.000	$0 000	$0.000
0 01	0.01	0.00	0.02	$0.001	$0 000	$0.000
0.19	0.14	0.11	0.44	$0.014	$0 011	$0.007
0 53	0.29	0.32	1.14	$0.058	$0 026	$0.024
1 06	0.21	0.29	1.56	$0.044	$0 017	$0.020
0 54	0.46	0.73	1.73	$0.068	$0 042	$0.049
0 87	0.61	1.00	2.48	$0.105	$0 058	$0.075
0 02	0.01	0.01	0.04	$0.001	$0 001	$0.001
0 00	0.36	2.25	2.61	$0.000	$0 032	$0.174
6 08			6.08	0.46		
9 33	2.14	4.76	16.23	$0.755	$0.190	$0.353
Dollars				$0.805	$0 202	$0.376

Default
From DefaultData
Equity - Corporate Investment Repayment Schedule

Year	Interest Pmt	Principal Pmt	Total Pmt
1	$ 4,266,519	$ 2,026,034	$ 6,292,553
2	$ 4,023,395	$ 2,197,524	$ 6,220,919
3	$ 3,751,096	$ 2,461,227	$ 6,212,323
4	$ 3,446,122	$ 2,756,574	$ 6,202,696
5	$ 3,104,550	$ 3,087,363	$ 6,191,913
6	$ 2,721,989	$ 3,457,847	$ 6,179,836
7	$ 2,293,522	$ 3,872,788	$ 6,166,310
8	$ 1,813,638	$ 4,337,523	$ 6,151,161
9	$ 1,276,168	$ 4,858,025	$ 6,134,194
10	$ 674,202	$ 5,440,988	$ 6,115,191
11	$ -	$ -	$ -
12	$ -	$ -	$ -
13	$ -	$ -	$ -
14	$ -	$ -	$ -
15	$ -	$ -	$ -
16	$ -	$ -	$ -
17	$ -	$ -	$ -
18	$ -	$ -	$ -
19	$ -	$ -	$ -
20	$ -	$ -	$ -
21	$ -	$ -	$ -
22	$ -	$ -	$ -
23	$ -	$ -	$ -
24	$ -	$ -	$ -
25	$ -	$ -	$ -
26	$ -	$ -	$ -
27	$ -	$ -	$ -
28	$ -	$ -	$ -
29	$ -	$ -	$ -
30	$ -	$ -	$ -
Total	$ 27,371,202	$ 34,495,892	$ 61,867,094
AvgAnn	$ 2,737,120	$ 3,449,589	$ 6,186,709

arameters) User Modified (from Project Data worksheet - based on equity investment parameters)
Equity - Corporate Investment Repayment Schedule

	Interest Pmt	Principal Pmt	Total Pmt
1	$ 4,316,145	$ 2,049,599	$ 6,365,745
2	$ 4,070,193	$ 2,295,551	$ 6,365,745
3	$ 3,794,727	$ 2,571,017	$ 6,365,745
4	$ 3,486,205	$ 2,879,540	$ 6,365,745
5	$ 3,140,660	$ 3,225,084	$ 6,365,745
6	$ 2,753,650	$ 3,612,094	$ 6,365,745
7	$ 2,320,199	$ 4,045,546	$ 6,365,745
8	$ 1,834,733	$ 4,531,011	$ 6,365,745
9	$ 1,291,012	$ 5,074,733	$ 6,365,745
10	$ 682,044	$ 5,683,700	$ 6,365,745
11	$ -	$ -	$ -
12	$ -	$ -	$ -
13	$ -	$ -	$ -
14	$ -	$ -	$ -
15	$ -	$ -	$ -
16	$ -	$ -	$ -
17	$ -	$ -	$ -
18	$ -	$ -	$ -
19	$ -	$ -	$ -
20	$ -	$ -	$ -
21	$ -	$ -	$ -
22	$ -	$ -	$ -
23	$ -	$ -	$ -
24	$ -	$ -	$ -
25	$ -	$ -	$ -
26	$ -	$ -	$ -
27	$ -	$ -	$ -
28	$ -	$ -	$ -
29	$ -	$ -	$ -
30	$ -	$ -	$ -
Total	$ 27,689,569	$ 35,967,876	$ 63,657,445
AvgAnn	$ 2,768,957	$ 3,596,788	$ 6,365,745

	Eng. & Prof. Svcs.	$1 21	$0.0		
	Other Sectors (not (	$0 00			
	Mfg Output	$1 026	$0.606		
	5				2
1	5	1	1	0	2
		2014	Dollars		
		Value Added			
Induced	**Total**	**Direct**	**Indirect**	**Induced**	**Total**
$0.000	$0 000	$0 000	$0.000	$0.000	$0.000
$0.000	$0 000	$0 000	$0.000	$0.000	$0.000
$8.148	$42.121	$6 918	$14.15	$5.290	$26.361
$0.609	$4.729	$0 962	$0.569	$0.397	$1.927
$0.000	$0 000	$0 000	$0.000	$0.000	$0.000
$0.000	$0 000	$0 000	$0.000	$0.000	$0.000
$0.000	$0 000	$0 000	$0.000	$0.000	$0.000
$0.000	$0 000	$0 000	$0.000	$0.000	$0.000
$0.000	$0 000	$0 000	$0.000	$0.000	$0.000
$0.000	$0 000	$0 000	$0.000	$0.000	$0.000
$0.000	$0 000	$0 000	$0.000	$0.000	$0.000
$0.000	$0 000	$0 000	$0.000	$0.000	$0.000
$0.684	$3.109	$1.138	$0.424	$0.444	$2.006
$3.076	$3 667	$0 000	$0.363	$2.004	$2.367
$12.518	$53 626	$9 018	$15.509	$8.134	$32.661

$13 34	$57.16	$9 61	$16.53		$8.67	$34.81	

1999$

Output					Value Added			
Total	**Direct**	**Indirect**	**Induced**	**Total**	**Direct**	**Indirect**	**Induced**	**Total**
$0 000	$0.001	$0.000	$0 000	$0.001	$0.001	$0.000	$0.000	$0.001
$0 000	$0.000	$0.000	$0 000	$0.000	$0.000	$0.000	$0.000	$0.000
$0 000	$0.000	$0.000	$0 000	$0.000	$0.000	$0.000	$0.000	$0.000
$0 007	$0.018	$0.006	$0 004	$0.028	$0.006	$0.003	$0.002	$0.011
$0 000	$0.000	$0.000	$0 000	$0.000	$0.000	$0.000	$0.000	$0.000
$0 000	$0.000	$0.000	$0 000	$0.000	$0.000	$0.000	$0.000	$0.000
$0 001	$0.003	$0.001	$0 001	$0.005	$0.001	$0.001	$0.000	$0.002
$0 028	$0.052	$0.024	$0 015	$0.092	$0.021	$0.014	$0.010	$0.045
$0.104	$0.164	$0.058	$0 056	$0.278	$0.111	$0.038	$0.036	$0.186
$0 072	$0.097	$0.033	$0 039	$0.169	$0.067	$0.022	$0.025	$0.114
$0.113	$0.192	$0.054	$0 061	$0.307	$0.146	$0.037	$0.039	$0.223
$0.171	$0.190	$0.067	$0 092	$0.349	$0.131	$0.045	$0.060	$0.236
$0 002	$0.003	$0.001	$0 001	$0.005	$0.002	$0.001	$0.001	$0.003
$0 205	$0.798	$0.083	$0.432	$1.313	$0.716	$0.051	$0.282	$1.049
$0.705	$1.518	$0.327	$0.701	$2.546	$1.201	$0.213	$0.456	$1.870

	2017 Dollars				2017 Dollars			
$0.751	$1 618	$0 349	$0.747	$2.714	$1.280	$0 227	$0.486	$1.993
$1 383	$2.110	$0 506	$0.939	$3 555	$1.771	$0 333	$0 611	$2.715

Output					Value Added			
Total	**Direct**	**Indirect**	**Induced**	**Total**	**Direct**	**Indirect**	**Induced**	**Total**
$0 000	$0.001	$0.000	$0 000	$0.000		$0.000	$0.000	$0.000
$0 000	$0.000	$0.000	$0 000	$0.000		$0.000	$0.000	$0.000
$0 000	$0.000	$0.000	$0 000	$0.000		$0.000	$0.000	$0.000
$0 002	$0.009	$0.003	$0 002	$0.005		$0.002	$0.001	$0.003
$0 000	$0.000	$0.000	$0 000	$0.000		$0.000	$0.000	$0.000
$0 000	$0.000	$0.000	$0 000	$0.000		$0.000	$0.000	$0.000
$0 000	$0.000	$0.000	$0 000	$0.000		$0.000	$0.000	$0.000
$0 003	$0.012	$0.005	$0 003	$0.009		$0.003	$0.002	$0.005
$0 004	$0.015	$0.005	$0 005	$0.010		$0.003	$0.003	$0.007
$0 009	$0.029	$0.010	$0 012	$0.022		$0.007	$0.008	$0.014
$0 046	$0.196	$0.055	$0 062	$0.117		$0.038	$0.040	$0.078
$0 067	$0.194	$0.068	$0 094	$0.162		$0.046	$0.061	$0.107
$0 001	$0.003	$0.001	$0 001	$0.002		$0.001	$0.001	$0.002
$0 001	$0.002	$0.000	$0 001	$0.002		$0.000	$0.001	$0.001
$0 593	$0.461	$0.148	$0.180	$0.789	$0.461	$0.100	$0.117	$0.678

$0 632	$0.491	$0.158	$0.192	$0 841	$0.491	$0.107	$0.125	$0.723

Output				Value Added				
Total	Direct	Indirect	Induced	Total	Direct	Indirect	Induced	Total
$0.001	$0 002	$0 000	$0.000	$0.003	$0.001	$0 000	$0 000	$0.001
$0.000	$0 000	$0 000	$0.000	$0.000	$0.000	$0 000	$0 000	$0.000
$0.000	$0 000	$0 000	$0.000	$0.000	$0.000	$0 000	$0 000	$0.000
$0.008	$0 027	$0 009	$0.005	$0.042	$0.006	$0 005	$0 003	$0.014
$0.000	$0 000	$0 000	$0.000	$0.000	$0.000	$0 000	$0 000	$0.000
$0.000	$0 000	$0 000	$0.000	$0.000	$0.000	$0 000	$0 000	$0.000
$0.001	$0 003	$0 001	$0.001	$0.005	$0.001	$0 001	$0 000	$0.002
$0.032	$0 064	$0 029	$0.019	$0.112	$0.021	$0 017	$0 012	$0.050
$0.108	$0.178	$0 063	$0.061	$0.302	$0.111	$0 042	$0 040	$0.193
$0.081	$0.126	$0 043	$0.050	$0.220	$0.067	$0 029	$0 033	$0.128
$0.159	$0 388	$0.109	$0.123	$0.619	$0.146	$0 075	$0 080	$0.301
$0.238	$0 384	$0.135	$0.186	$0.705	$0.131	$0 091	$0.121	$0.343
$0.003	$0 006	$0 002	$0.002	$0.010	$0.002	$0 001	$0 001	$0.005
$0.206	$0 800	$0 083	$0.434	$1.317	$0.716	$0 051	$0 282	$1.050
$0.461				$0.000	$0.461			$0.461
$1.298	$1 979	$0.475	$0.881	$3.335	$1.662	$0 313	$0 573	$2.548
$1.383	$2.110	$0 506	$0.939	$3.555	$1.771	$0 333	$0 611	$2.715

Construction Costs	Cost	Local Share
Balance of Plant		
Materials		
Construction (concrete rebar, equip, roads and site prep)	$18,387,604	90%
Transformer	$2,080,019	0%
Electrical (drop cable, wire,)	$2,192,481	100%
HV line extension	$4,004,931	70%
Materials Subtotal	$26,665,035	
Labor		
Foundation	$3,534,084	50%
Erection	$5,288,490	50%
Electrical	$3,342,029	50%
Management/supervision	$1,001,249	0%
Misc.	$0	50%
Labor Subtotal	$13,165,852	
Subtotal	$39,830,887	
Equipment Costs		
Turbines	$76,095,413	0%
Blades	$17,814,980	0%
Towers	$19,723,728	0%
Transportation	$13,615,734	0%
Equipment Subtotal	$127,249,855	
Development/Other Costs		
HV Sub/Interconnection	$0	0%
Materials	$1,263,710	90%
Labor	$2,888,218	50%
Engineering	$1,619,072	50%
Legal Services	$937,178	100%
Land Easements	$0	100%
Site Certificate	$438,496	100%
Other Subtotal	$7,146,673	
Subtotal All Costs (without sales tax)	$174,227,416	
Sales Tax (Materials & Equipment Purchases)	$5,611,966	100%
Total Project Costs	$179,839,382	$1,767

Wind Plant Annual Operating and Maintenance Costs

	Cost	Local Share
Variable Costs		
Personnel		
Field Salaries	$340,939	100%
Adminstrative	$53,760	100%
Manangement	$134,399	100%
Personnel Subtotal	$529,098	
Warranty/Maintenance Services	$0	0%
Total	$529,098	
Fixed Costs		
Materials and Services		
Vehicles	$54,681	100%
Misc. Services	$21,326	100%
Fees, Permits, Licenses	$10,663	100%
Misc. Materials	$42,651	100%
Insurance	$410,106	0%
Fuel (gals)	$21,326	100%
Tools and Misc. Supplies	$138,616	100%
Spare Parts Inventory	$1,214,734	2%

Subtotal	$1,914,102	
Sales Tax (Materials & Equipment Purchases)	$56,321	100%
Other Taxes/Payments	$0	100%
Total (with Sales Tax and Other Taxes/Payments	$2,499,521	
Debt Payment (average annual)	$19,826,305	0%
Equity Payment - Individuals	$0	100%
Equity Payment - Corporate	$6,365,745	0%
Property Taxes	$743,140	100%
Land Lease	$306,900	100%
Total Annual Operating and Maintenance Costs	$29,741,611	

Other Parameters

		Local Share
Financial Parameters		
Debt Financing		
Percentage financed	80%	0%
Years financed (term)	10	
Interest rate	6%	
Equity Financing		
Percentage equity	20%	
Individual Investors (percent of total equity)	0%	100%
Corporate Investors (percent of total equity)	100%	0%
Return on equity (annual interest rate)	12%	
Repayment term (years)	10	
Tax Parameters		
Local Property/Other Tax Rate (percent of taxable value)	NA	
Assessed value (percent of construction cost)	NA	
Taxable Value (percent of assessed value)	0%	
Taxable Value	NA	
Taxes Per MW	$7,300	
Local Taxes	$743,140	100%
Local Sales Tax Rate	4.0%	100%
Land Lease Parameters		
Land Lease Cost (per turbine)	$9,900	
Land Lease (total cost)	$306,900	
Lease Payment recipient (F = farmer/household, O = Other)	F	100%

Payroll Parameters	**Base Wage per Hour**	**Annual Wage**	**Employer Payroll Costs**
Construction Labor			
Foundation	$21.44	$44,588	37 6%
Erection	$24.28	$50,502	37 6%
Electrical	$32.17	$66,906	37 6%
Management/Supervision	$43.73	$90,952	37 6%
O&M Labor	**Base Wage per Hour**	**Annual Wage**	**Employer Payroll Costs**
Field Salaries (technicians, other)	$29.25	$60,846	37 6%
Administrative	$18.72	$38,941	37 6%
Management	$46.80	$97,353	37 6%

Local Economic Impacts - Summary Results

	Jobs	Earnings	Output	/alue Added
During construction period				
Direct Impacts	103	$8.2	$9 3	$8.6
Onsite Construction Only (labor and interconnection)	91	$7.4	$7.4	$7.4
Other Onsite Construction Related Services (Engin. and Prof. Services)	12	$0.8	$1 9	$1.2
Indirect Impacts	164	$11 6	$34.5	$17 6
Induced Impacts	72	$5.3	$13.3	$8.7
Total Impacts (Direct, Indirect, Induced)	338	$25.1	$57.2	$34 8
During operating years (annual)				
Direct Impacts				
Onsite Wind Farm Labor Only (field techs, admin., mgmt.)	6	$0.49	$0.49	$0.49
Indirect Impacts	5	$0 52	$2.1	$1.6
Induced Impacts	5	$0.4	$0 9	$0.6
Total Impacts (Direct, Indirect, Induced)	16	$1.4	$3 6	$2.7

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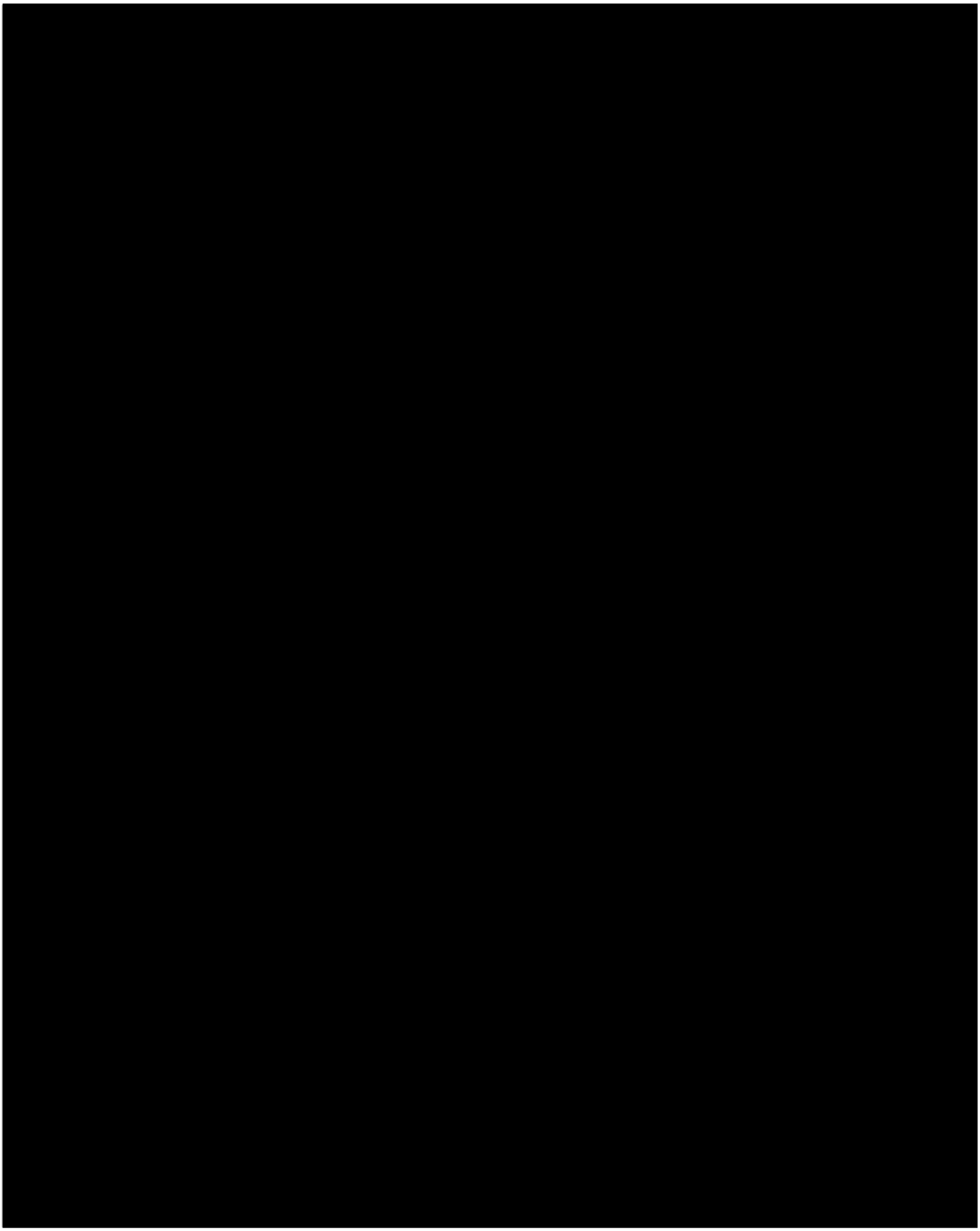

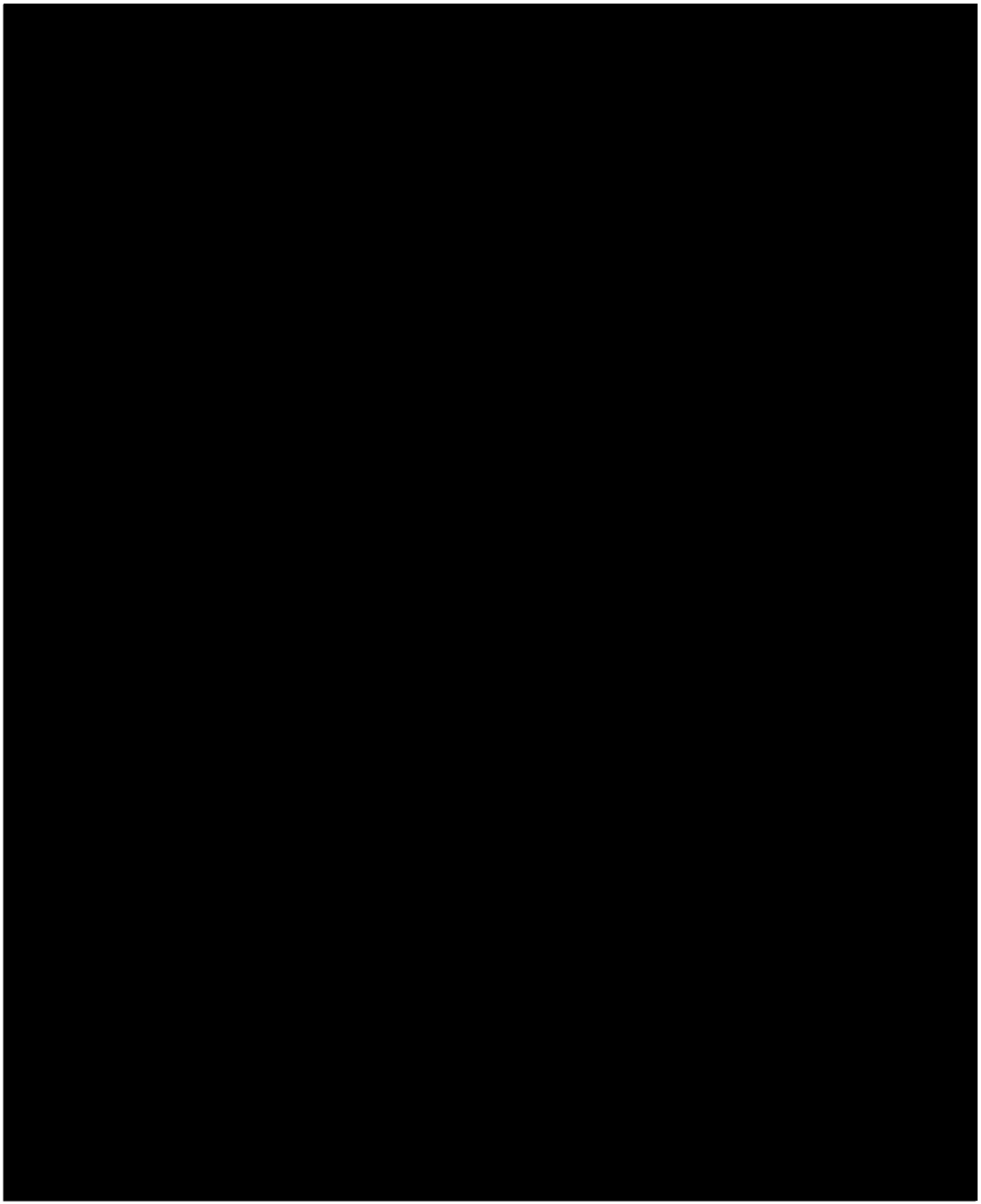

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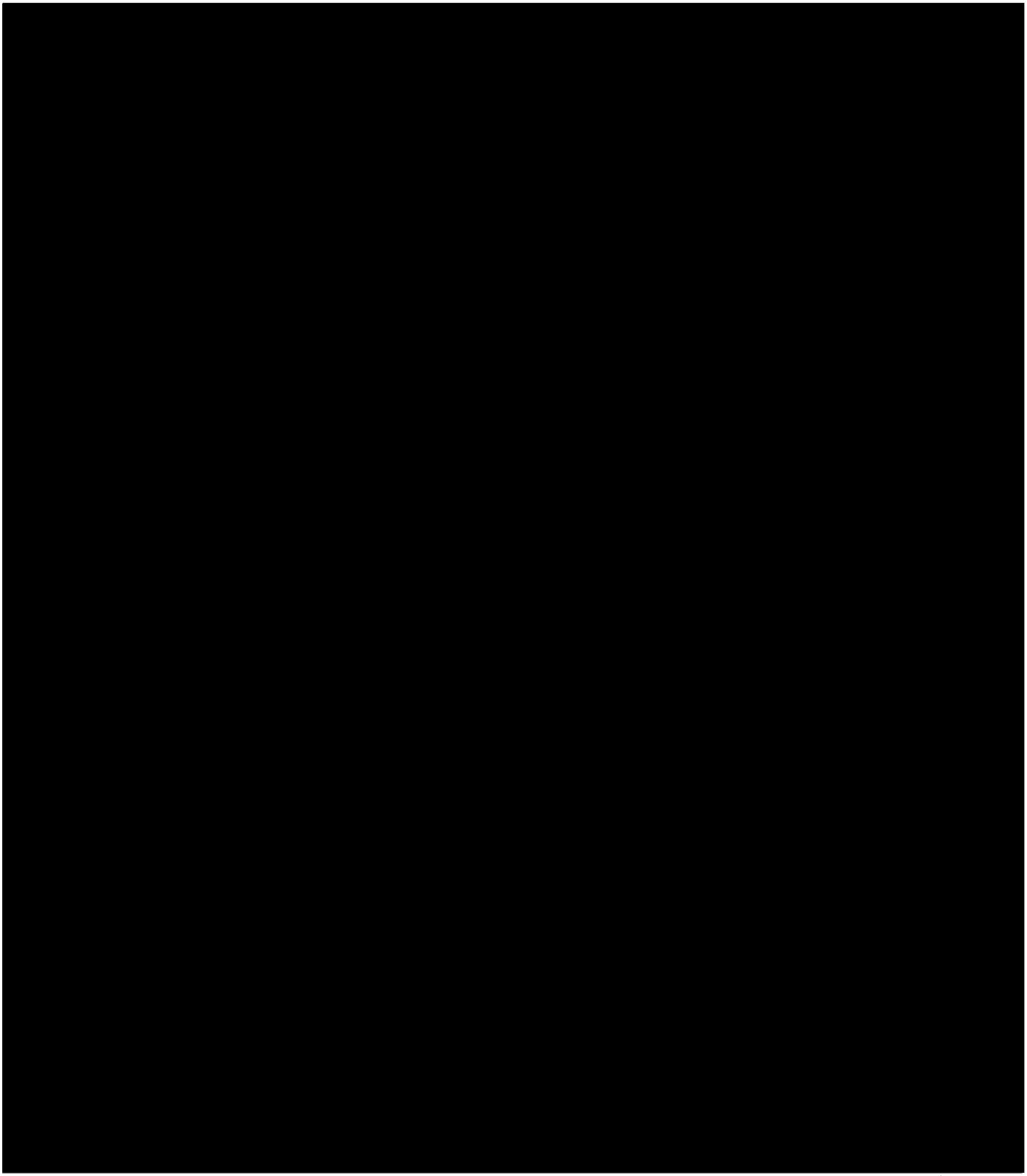

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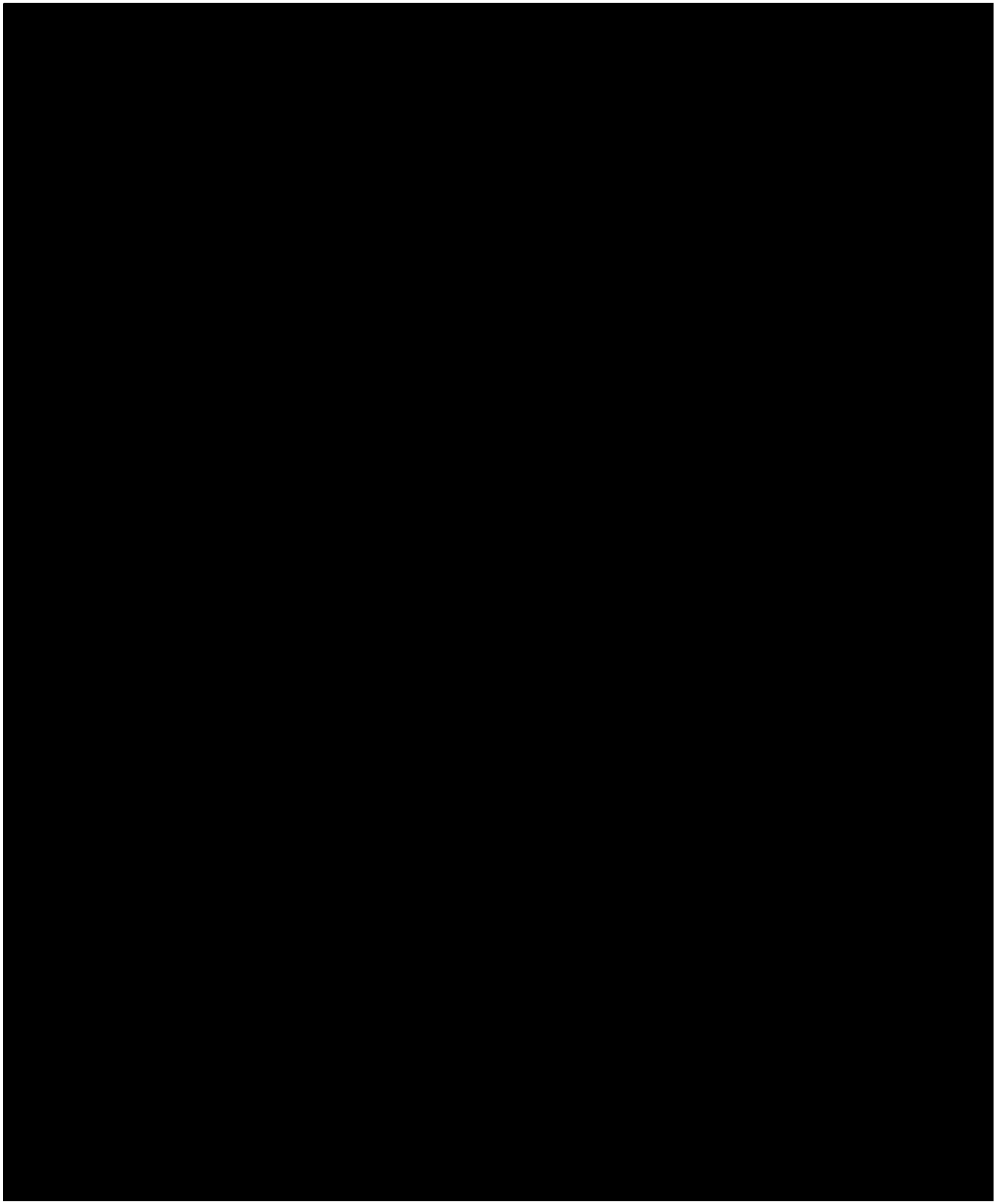

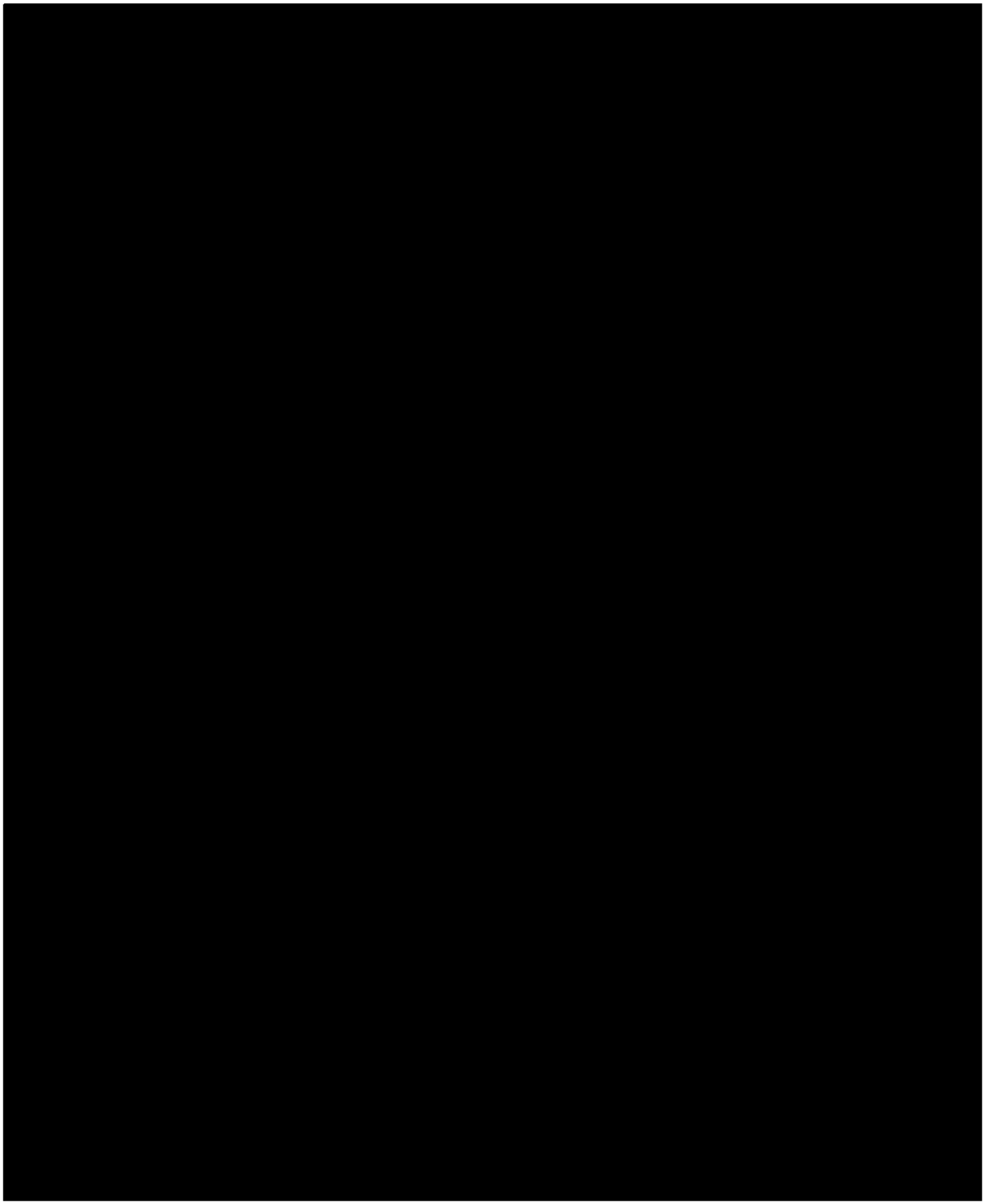

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Date of Request: 11-30-18 Company Request No.

Case 16-F-0062
Application of Eight Point Wind LLC for a Certificate of Environmental Compatibility and Public Need Pursuant to Article 10 to Construct a Wind Energy Project.

INTERROGATORY/DOCUMENT REQUEST

Request No.:	DPS-22
Directed To:	Eight Point Wind
From:	Daniel Gadomski

Information Requested:

Subject: Exhibit 27: Socioeconomic Effects

1. According to the JEDI model spreadsheet 'Project Data' tab, the Applicant changed the labor costs from the default values in cells B46, B47, B48, B49, and B50. These labor cost changes were not accompanied by any changes in the hourly construction wage rates, despite the JEDI model note that states "[i]f revising labor costs, please note: Labor costs are associated with per hour construction wage rates. Therefore, user changes to labor costs must be accompanied by changes in hourly wage rates and overhead costs or changes will adversely impact the total number of construction workers calculated."
   a. Explain why the construction wage rates and overhead costs were not changed along with the labor costs.

2. According to the JEDI model spreadsheet 'Project Data' tab, the default value of $306,900 was used for the Land Lease total cost in cell B112. Provide the total land lease costs associated with this project based on actual annual land lease and easement agreements for the project.

Name of Person(s)
Preparing Response: Diane Reilly (TRC); Kris Scornavacca (NextEra) **Date:** 12/10/18

Responses:

1. a. NextEra's labor estimates for the Eight Point Wind Energy Project are lower than those generated by the default values in the JEDI model. Therefore, the total labor costs (shown in cells B46, B47, B48, B49, and B50) were revised to be consistent with the expected labor costs associated with the Eight Point Project. When total labor costs were decreased and hourly wage rates were held constant, the JEDI model calculated a (lower) total number of construction workers estimate consistent with NextEra's expectations.

   The intent of NextEra's changes in the total labor costs was to "adversely impact (increase or decrease) the total number of constructions workers" so that there was a decrease in the total number of construction workers to be consistent with NextEra's estimates and avoid overstating the Project's expected impacts. Decreasing the wage rates when decreasing the total labor costs would have over-stated the number of jobs expected to be associated with the Project. For this reason, the wage rates were unchanged. This additional customization allows for more accurate estimates of jobs and secondary impacts associated with the proposed Project.

2. The default value of $306,900 used for the Land Lease total cost in cell B112 is an approximate value for the Project's land lease payments prior to the exercise of the options in the agreements related to the beginning of the construction and operational periods. However, once the options are

exercised, the Applicant expects to make annual payments to Project land owners of approximately $476,000 for the life of the project based upon the actual agreements. Only a reasonable estimate can be provided at this time because each individual land owner agreement is unique, and many contain provisions such as annual escalations to expected payments and final acreage requirements, based upon the final Article 10 certificate to be issued. Thus, the final annual payments could vary but should not do so in any material manner. Therefore, the $476,000 annual payment is an approximation based on current assumptions that are subject to change as the Project is developed and constructed.

Date of Request: 11-30-18 Company Request No.

Case 16-F-0062
Application of Eight Point Wind LLC for a Certificate of Environmental Compatibility and Public Need Pursuant to Article 10 to Construct a Wind Energy Project.

INTERROGATORY/DOCUMENT REQUEST

Request No.:	DPS-23
Directed To:	Eight Point Wind
From:	Daniel Gadomski

Information Requested:

Subject: Exhibit 27: Socioeconomic Effects

1. The response to DPS-21(3) contains only the odd numbered pages. Provide the entire BID PROPOSAL RFP 3257 Form.

Response: This confidential document was provided to Mr. Graham Jesmer via email on December 10, 2018, subject to the Examiner's November 14, 2018 Ruling Adopting Protective Order.

2. Regarding the response to DPS-21(3) page 11:
   a. Explain how an employee qualifies as a "local-hire" as it relates to the project.

Response: An employee is considered a "local-hire" if he or she resides in the State of New York.

   b. Indicate if the [redacted] short-term employees are classified as "local-hires".

Response: Yes, the NYSERDA bid package presents local (New York) impacts, with the projection of short-term employees reflecting hires of New York residents.

   c. Specify if the sentence stating that "[redacted]

[redacted]

[redacted]

Name of Person(s)
Preparing Response: Kris Scornavacca & Diane Reilly Date: 12/17/18

[redacted]" relates to the [redacted] short-term employees, or if these local hiring initiatives are additional anticipated jobs.

Response: [redacted]

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SUBJECT TO PROTECTIVE ORDER IN CASE 16-F-0062

[redacted]

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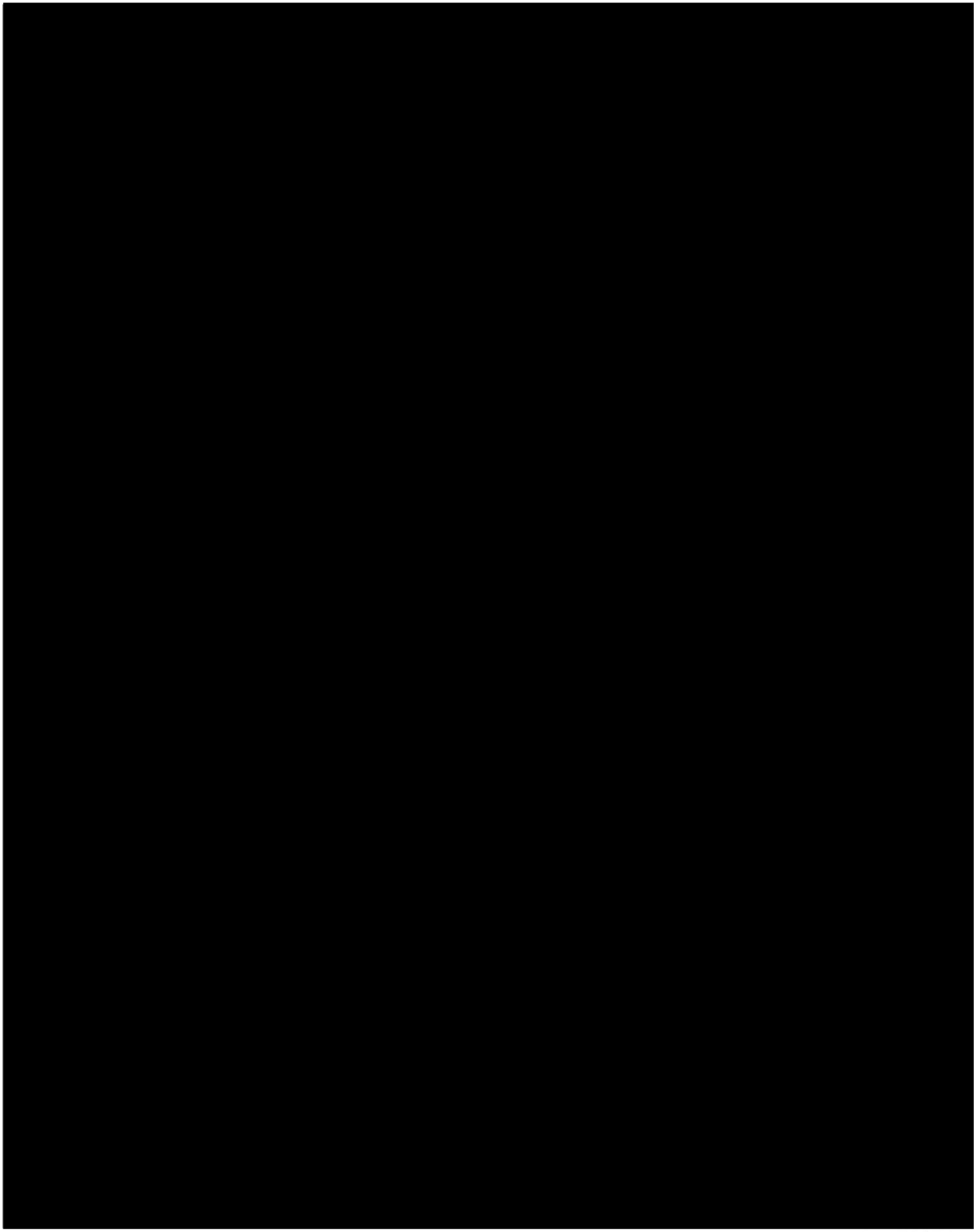

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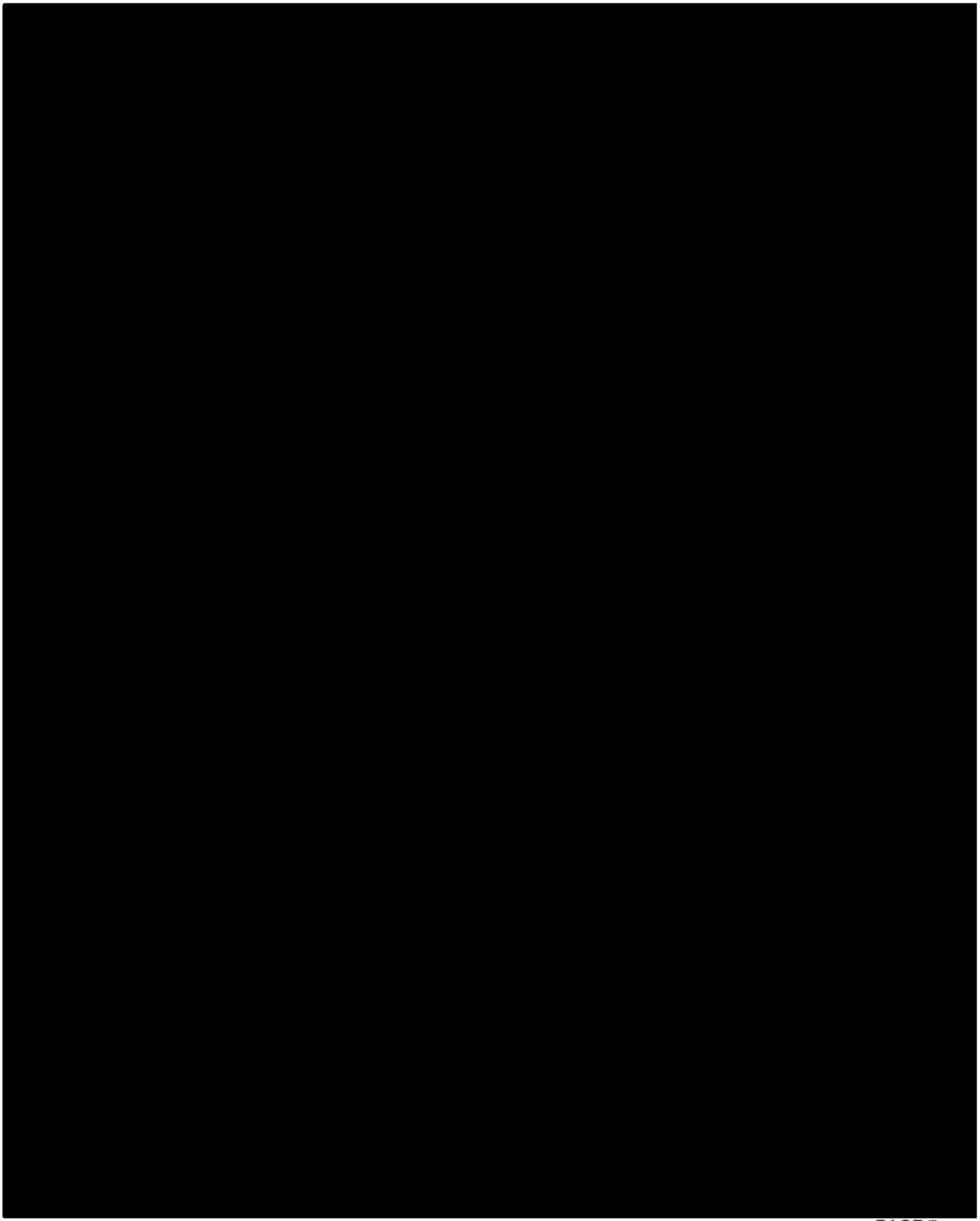

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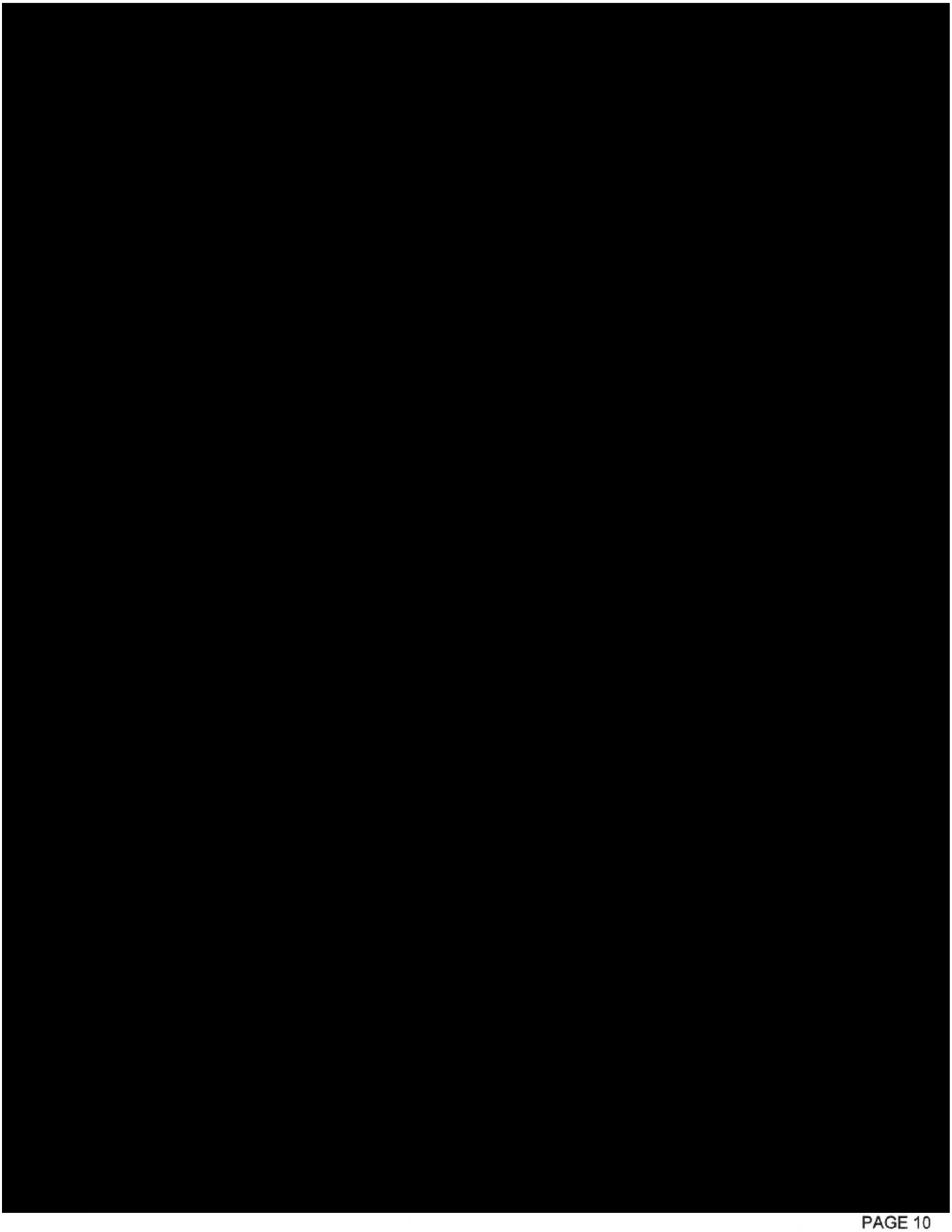

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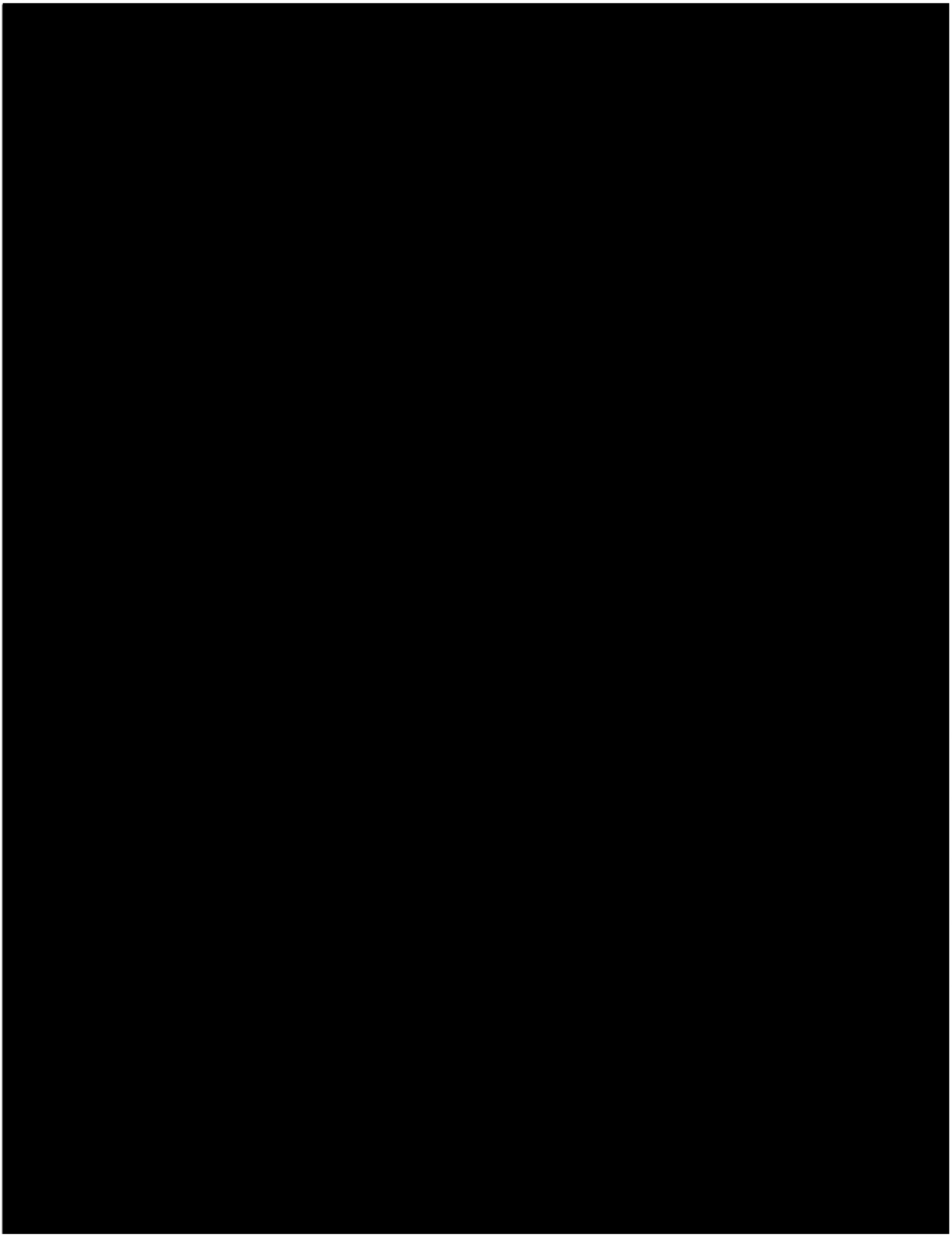

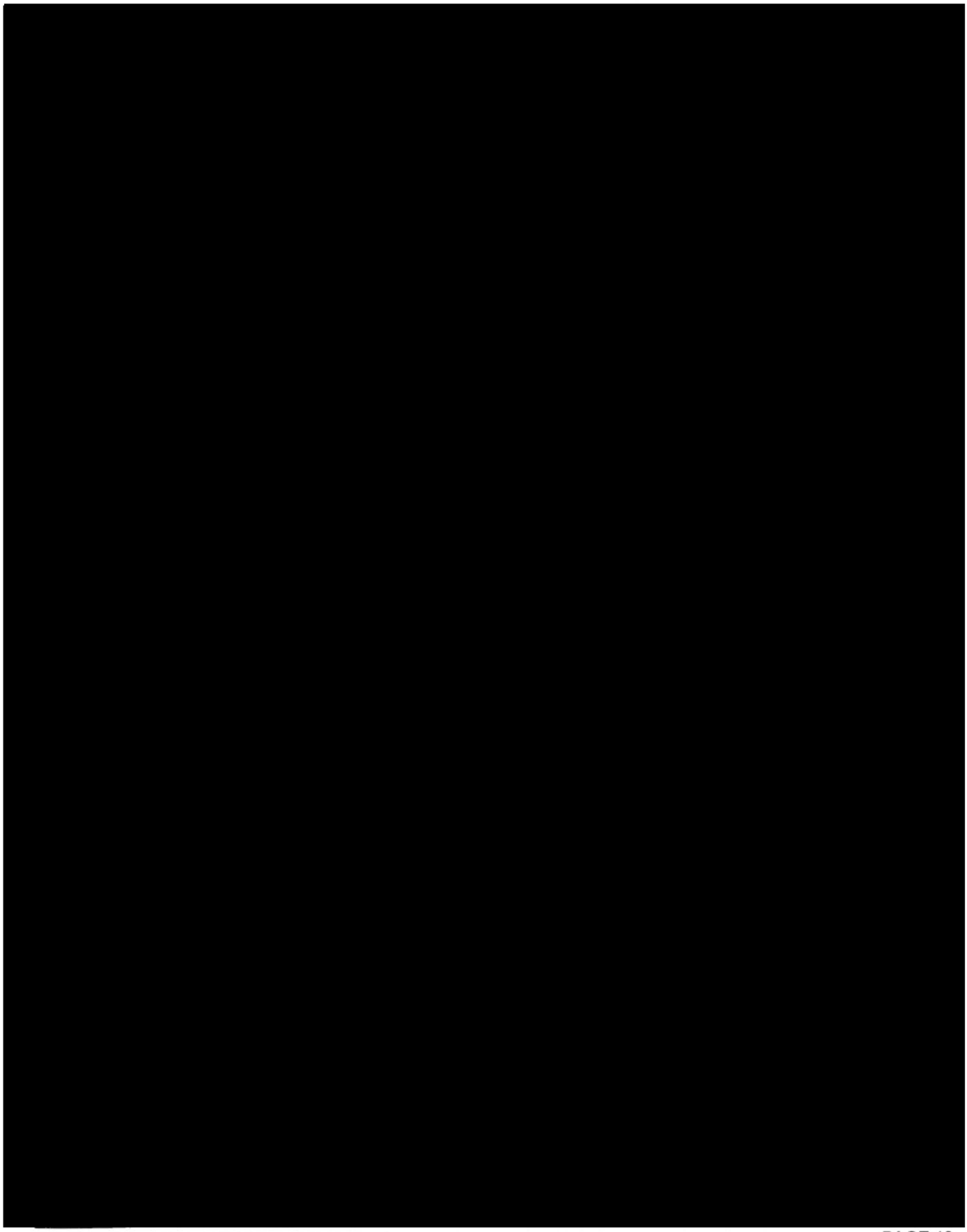

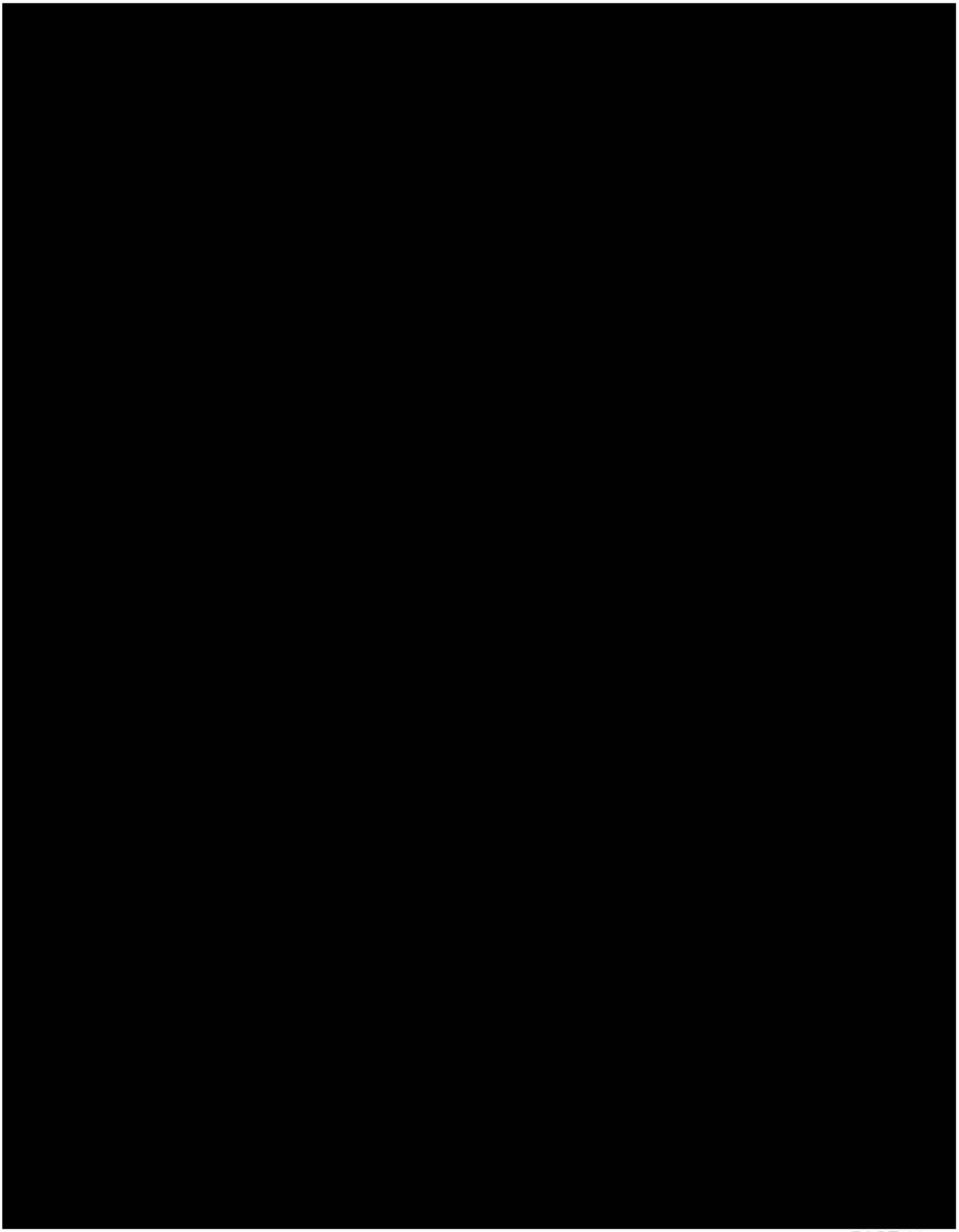

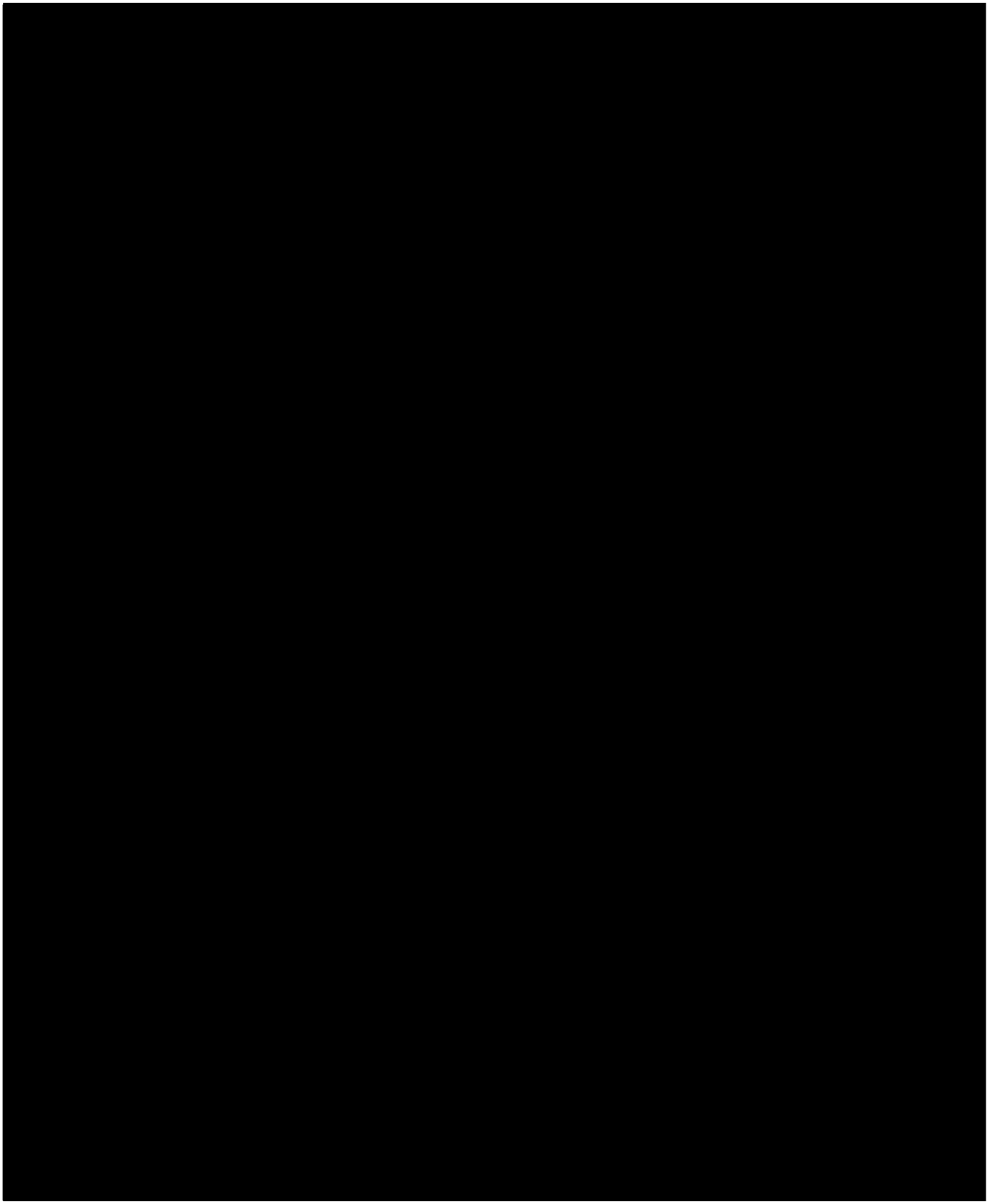

	Applicant's Labor Cost and Applicant's Local Shares	Default Labor Cost and Default Local Shares	Applicant's Labor Costs with Default Local Shares	Default Labor Costs with Applicant's Local Shares	EPW Project MW	Applicant's Analysis	Default Labor Cost and Default Local Shares	Applicant's Labor Costs with Default Local Shares	Default Labor Costs with Applicant's Local Share
Jobs During Construction Period						**Jobs per MW**	**Jobs per MW**	**Jobs per MW**	**Jobs per MW**
Project Development and Onsite Labor Impacts									
Construction and Interconnection Labor	91	61	138	39	101.8	0.89	0.59	1.36	0.38
Construction Related Services	12	6	6	11	101.8	0.11	0.06	0.06	0.11
Total	103	66	144	50	101.8	1.01	0.65	1.41	0.49
Turbine and Supply Chain Impacts	164	185	168	183	101.8	1.61	1.82	1.65	1.80
Induced Impacts	72	72	74	71	101.8	0.70	0.71	0.73	0.70
Total Impacts	**338**	**323**	**386**	**305**	101.8	**3.32**	**3.18**	**3.79**	**3.00**
Jobs During Operating Years (Annual)									
Onsite Labor Impacts	6	6	6	6	101.8	0.06	0.06	0.06	0.06
Local Revenue and Supply Chain Impacts	5	5	5	5	101.8	0.05	0.05	0.05	0.05
Induced Impacts	5	3	3	3	101.8	0.05	0.03	0.03	0.03
Total Impacts	**16**	**14**	**14**	**14**	101.8	**0.16**	**0.14**	**0.14**	**0.14**

Applicant's Labor Cost and Applicant's Local Shares

Construction Costs	Cost	Per kW	Total Cost	Local Share	
Equipment Costs					
Turbines (excluding blades and towers)	$76,095,413	$747	42.3%	0%	
Blades	$17,814,980	$175	9.9%	0%	
Towers	$19,723,728	$194	11.0%	0%	
Transportation	$13,615,734	$134	7.6%	0%	
Equipment Total	$127,249,855	$1,250	70.8%		
Balance of Plant					
Materials					
Construction (concrete, rebar, equip, roads and site prep)	$18,387,604	$181	10.2%	90%	
Transformer	$2,080,019	$20	1.2%	0%	
Electrical (drop cable, wire,)	$2,192,481	$22	1.2%	100%	
HV line extension	$4,004,931	$39	2.2%	70%	
Materials Subtotal	$26,665,035	$262	14.8%		
Labor	Do not change 'Labor Costs' without changing Construction 'Wages per Hour' below.				
Foundation	$ 3,534,083.92	$35	2.0%	50%	See comment - point cursor to red triangle in cell corner.
Erection	$ 5,288,489.71	$52	2.9%	50%	
Electrical	$ 3,342,029.43	$33	1.9%	50%	
Management/Supervision	$ 1,001,248.76	$10	0.6%	0%	
Misc.	$0	$0	0.0%	50%	
Labor Subtotal	$13,165,852	$129	7.3%		
Development/Other Costs					
HV Sub/Interconnection					
Materials	$1,263,710	$12	0.7%	90%	
Labor	$ 2,888,217.57	$28	1.6%	50%	
Engineering	$ 1,619,072.00	$16	0.9%	50%	
Legal Services	$937,178	$9	0.5%	100%	
Land Easements	$0	$0	0.0%	100%	
Site Certificate/Permitting	$438,496	$4	0.2%	100%	
Development/Other Subtotal	$7,146,673	$70	4.0%		
Balance of Plant Total	$46,977,561	$461	26.1%		
Subtotal (all cost without taxes)	$174,227,416	$1,711	96.9%		
Sales Tax (Material and Equipment Purchases)	$5,611,966	$55	3.1%	100%	
Total	$179,839,382	$1,767	100.0%		

Local Economic Impacts - Summary Results

	Jobs	Earnings	Output	Value Added
During construction period				
Project Development and Onsite Labor Impacts				
Construction and Interconnection Labor	91	$7.4		
Construction Related Services	12	$0.8		
Total	103	$8.2	$9.3	$8.6
Turbine and Supply Chain Impacts	164	$11.6	$34.5	$17.6
Induced Impacts	72	$5.3	$13.3	$8.7
Total Impacts	**338**	**$25.1**	**$57.2**	**$34.8**
During operating years (annual)				
Onsite Labor Impacts	6	$0.5	$0.5	$0.5
Local Revenue and Supply Chain Impacts	5	$0.5	$2.1	$1.6
Induced Impacts	5	$0.4	$0.9	$0.6
Total Impacts	**16**	**$1.4**	**$3.6**	**$2.7**

Default Labor Cost and Default Local Shares

Construction Costs	Cost	Per kW	Total Cost	Local Share
Equipment Costs				
Turbines (excluding blades and towers)	$76,095,413	$747	42.8%	0%
Blades	$17,814,980	$175	10.0%	0%
Towers	$19,723,728	$194	11.1%	0%
Transportation	$13,615,734	$134	7.7%	0%
Equipment Total	$127,249,855	$1,250	71.6%	
Balance of Plant				
Materials				
Construction (concrete, rebar, equip, roads and site prep)	$18,387,604	$181	10.3%	90%
Transformer	$2,080,019	$20	1.2%	0%
Electrical (drop cable, wire,)	$2,192,481	$22	1.2%	100%
HV line extension	$4,004,931	$39	2.3%	70%
Materials Subtotal	$26,665,035	$262	15.0%	
Labor				
Foundation	$1,500,322	$15	0.8%	95%
Erection	$1,699,328	$17	1.0%	75%
Electrical	$2,476,432	$24	1.4%	70%
Management/Supervision	$1,285,025	$13	0.7%	0%
Misc.	$6,537,596	$64	3.7%	50%
Labor Subtotal	$13,498,703	$133	7.6%	
Development/Other Costs				
HV Sub/Interconnection				
Materials	$1,263,710	$12	0.7%	90%
Labor	$387,099	$4	0.2%	10%
Engineering	$1,719,593	$17	1.0%	0%
Legal Services	$937,178	$9	0.5%	100%
Land Easements	$0	$0	0.0%	100%
Site Certificate/Permitting	$438,496	$4	0.2%	100%
Development/Other Subtotal	$4,746,076	$47	2.7%	
Balance of Plant Total	$44,909,814	$441	25.3%	
Subtotal (all cost without taxes)	$172,159,669	$1,691	96.8%	
Sales Tax (Material and Equipment Purchases)	$5,611,966	$55	3.2%	100%
Total	$177,771,635	$1,746	100.0%	

Local Economic Impacts - Summary Results	Jobs	Earnings	Output	Value Added
During construction period				
Project Development and Onsite Labor Impacts				
Construction and Interconnection Labor	61	$4.5		
Construction Related Services	6	$0.4		
Total	66	$4.9	$5.4	$5.1
Turbine and Supply Chain Impacts	185	$13.2	$37.6	$19.7
Induced Impacts	72	$5.4	$13.5	$8.8
Total Impacts	**323**	**$23.4**	**$56.5**	**$33.5**
During operating years (annual)				
Onsite Labor Impacts	6	$0.5	$0.5	$0.5
Local Revenue and Supply Chain Impacts	5	$0.5	$1.3	$0.9
Induced Impacts	3	$0.2	$0.5	$0.3
Total Impacts	**14**	**$1.2**	**$2.3**	**$1.7**

Applicant's Labor Cost with Default Local Shares

Construction Costs	Cost	Per kW	Total Cost	Local Share	
Equipment Costs					
Turbines (excluding blades and towers)	$76,095,413	$747	42.3%	0%	
Blades	$17,814,980	$175	9.9%	0%	
Towers	$19,723,728	$194	11.0%	0%	
Transportation	$13,615,734	$134	7.6%	0%	
Equipment Total	$127,249,855	$1,250	70.8%		
Balance of Plant					
Materials					
Construction (concrete, rebar, equip, roads and site prep)	$18,387,604	$181	10.2%	90%	
Transformer	$2,080,019	$20	1.2%	0%	
Electrical (drop cable, wire,)	$2,192,481	$22	1.2%	100%	
HV line extension	$4,004,931	$39	2.2%	70%	
Materials Subtotal	$26,665,035	$262	14.8%		
Labor	Do not change 'Labor Costs' without changing Construction 'Wages per Hour' below.				
Foundation	$3,534,084	$35	2.0%	95%	See comment - point cursor to red triangle in cell corner.
Erection	$5,288,490	$52	2.9%	75%	
Electrical	$3,342,029	$33	1.9%	70%	
Management/Supervision	$1,001,249	$10	0.6%	0%	
Misc.	$0	$0	0.0%	50%	
Labor Subtotal	$13,165,852	$129	7.3%		
Development/Other Costs					
HV Sub/Interconnection					
Materials	$1,263,710	$12	0.7%	90%	
Labor	$2,888,218	$28	1.6%	10%	
Engineering	$1,619,072	$16	0.9%	0%	
Legal Services	$937,178	$9	0.5%	100%	
Land Easements	$0	$0	0.0%	100%	
Site Certificate/Permitting	$438,496	$4	0.2%	100%	
Development/Other Subtotal	$7,146,673	$70	4.0%		
Balance of Plant Total	$46,977,561	$461	26.1%		
Subtotal (all cost without taxes)	$174,227,416	$1,711	96.9%		
Sales Tax (Material and Equipment Purchases)	$5,611,966	$55	3.1%	100%	
Total	$179,839,382	$1,767	100.0%		

Local Economic Impacts - Summary Results

	Jobs	Earnings	Output	Value Added
During construction period				
Project Development and Onsite Labor Impacts				
Construction and Interconnection Labor	138	$9.9		
Construction Related Services	6	$0.4		
Total	144	$10.3	$10.9	$10.5
Turbine and Supply Chain Impacts	168	$11.8	$35.1	$17.9
Induced Impacts	74	$5.5	$13.8	$9.0
Total Impacts	**386**	**$27.7**	**$59.8**	**$37.4**
During operating years (annual)				
Onsite Labor Impacts	6	$0.5	$0.5	$0.5
Local Revenue and Supply Chain Impacts	5	$0.5	$1.3	$0.9
Induced Impacts	3	$0.2	$0.5	$0.3
Total Impacts	**14**	**$1.2**	**$2.3**	**$1.7**

Default Labor Costs with Applicant's Local Shares

Construction Costs	Cost	Per kW	Total Cost	Local Share
Equipment Costs				
Turbines (excluding blades and towers)	$76,095,413	$747	42.8%	0%
Blades	$17,814,980	$175	10.0%	0%
Towers	$19,723,728	$194	11.1%	0%
Transportation	$13,615,734	$134	7.7%	0%
Equipment Total	$127,249,855	$1,250	71.6%	
Balance of Plant				
Materials				
Construction (concrete, rebar, equip, roads and site prep)	$18,387,604	$181	10.3%	90%
Transformer	$2,080,019	$20	1.2%	0%
Electrical (drop cable, wire,)	$2,192,481	$22	1.2%	100%
HV line extension	$4,004,931	$39	2.3%	70%
Materials Subtotal	$26,665,035	$262	15.0%	
Labor				
Foundation	$1,500,322	$15	0.8%	50%
Erection	$1,699,328	$17	1.0%	50%
Electrical	$2,476,432	$24	1.4%	50%
Management/Supervision	$1,285,025	$13	0.7%	0%
Misc.	$6,537,596	$64	3.7%	50%
Labor Subtotal	$13,498,703	$133	7.6%	
Development/Other Costs				
HV Sub/Interconnection				
Materials	$1,263,710	$12	0.7%	90%
Labor	$387,099	$4	0.2%	50%
Engineering	$1,719,593	$17	1.0%	50%
Legal Services	$937,178	$9	0.5%	100%
Land Easements	$0	$0	0.0%	100%
Site Certificate/Permitting	$438,496	$4	0.2%	100%
Development/Other Subtotal	$4,746,076	$47	2.7%	
Balance of Plant Total	$44,909,814	$441	25.3%	
Subtotal (all cost without taxes)	$172,159,669	$1,691	96.8%	
Sales Tax (Material and Equipment Purchases)	$5,611,966	$55	3.2%	100%
Total	$177,771,635	$1,746	100.0%	

Local Economic Impacts - Summary Results	Jobs	Earnings	Output	Value Added
During construction period				
Project Development and Onsite Labor Impacts				
Construction and Interconnection Labor	39	$3.0		
Construction Related Services	11	$0.8		
Total	50	$3.8	$4.8	$4.2
Turbine and Supply Chain Impacts	183	$13.1	$37.4	$19.6
Induced Impacts	71	$5.3	$13.3	$8.7
Total Impacts	**305**	**$22.2**	**$55.5**	**$32.4**
During operating years (annual)				
Onsite Labor Impacts	6	$0.5	$0.5	$0.5
Local Revenue and Supply Chain Impacts	5	$0.5	$1.3	$0.9
Induced Impacts	3	$0.2	$0.5	$0.3
Total Impacts	**14**	**$1.2**	**$2.3**	**$1.7**

Project Name	Case Number	Solar or Wind	Source	Geographic Span*	Estimation Method	MW	Construction Phase Direct Jobs**	Ongoing Operational Phase Direct Jobs***	Construction Phase Secondary Induced/ Indirect Jobs	Ongoing Operational Phase Secondary Induced/ Indirect Jobs	Total Jobs****	Direct Jobs per MW (construction phase)	Direct Jobs per MW (ongoing phase)	Secondary Indirect Induced Jobs per MW (construction phase)	Secondary Indirect Induced Jobs per MW (ongoing phase)	Total Jobs per MW
Article 10 Projects																
Lighthouse Wind	14-F-0485	Wind	PSS	Local Area	JEDI model	201	300	13				1.49	0.06			
Cassadaga Wind	14-F-0490	Wind	Application	Statewide	JEDI model	126	75	7	367	12	461	0.60	0.06	2.91	0.10	3.66
Baron Winds	15-F-0122	Wind	Application (original)	Statewide	JEDI model	300	148	12	750	31	941	0.49	0.04	2.50	0.10	3.14
Galloo Island Wind	15-F-0327	Wind	Application	Statewide	JEDI model	108.9	200	6	755	8	969	1.84	0.06	6.93	0.07	8.90
Bull Run Energy	15-F-0377	Wind	PSS	Local Project Area	JEDI model	449	216	15	500	1	732	0.48	0.03	1.11	0.00	1.63
Number Three Wind LLC	16-F-0328	Wind	Application	Local Community	Applicant's estimates	105.8	165	7	44.3	1.95	218.25	1.56	0.07	0.42	0.02	2.06
Number Three Wind LLC	16-F-0328	Wind	PSS	Project Area	JEDI model	105.8	62	5	101	1	169	0.59	0.05	0.95	0.01	1.60
Eight Point Wind LLC (excluding transmission line)	16-F-0062	Wind	Application	Statewide	JEDI model	101.8	103	6	236	10	355	1.01	0.06	2.32	0.10	3.49
Eight Point Wind LLC (from exhibit DSG-2, default inputs)	16-F-0062	Wind	Exhibit DSG-2	Statewide	JEDI model	101.8	67	6	257	8	338	0.66	0.06	2.52	0.08	3.32
Canisteo Wind	16-F-0205	Wind	Application	Local & Regional	Applicant's model	290.7	200	11	73.3	6.4	290.7	0.69	0.04	0.25	0.02	1.00
Deer River Wind	16-F-0267	Wind	PSS	Local Area	JEDI model	100	125	6				1.25	0.06			
Bluestone Wind	16-F-0559	Wind	Application	Statewide	JEDI model	124	150	7	406	17	580	1.21	0.06	3.27	0.14	4.68
Alle-Catt Wind Energy LLC	17-F-0282	Wind	Application	Local & Regional	Applicant's model	340	250	8.2	93.1	-	351.3	0.74	0.02	0.27	-	1.03
High River Solar	17-F-0597	Solar	PSS	Local Project Area	IMPLAN model	90	250	2 - 3				2.78	0.02 - 0.03			
East Point Energy Center	17-F-0599	Solar	PSS	Local Project Area	IMPLAN model	50	125 - 175	2 - 3				2.5 - 3.5	0.04 - 0.06			

* geographic span as described by the applicant in the PSS or Application

Offshore Wind																
Offshore Wind - high case	18-E-0071	Wind		Downstate		8,000					5,000					0.63
Offshore Wind - high case, NY only	18-E-0071	Wind		Downstate		8,000					3,500					0.44
Offshore Wind - low case	18-E-0071	Wind		Downstate		4,000					1,950					0.49
Offshore Wind - low case, NY only	18-E-0071	Wind		Downstate		4,000					1,900					0.48

https://www.nyserda.ny.gov/-/media/Files/Publications/Research/Biomass-Solar-Wind/Master-Plan/17-25t-Workforce-Opportunity-Study.pdf

NY Solar Study																
NY Solar Study-Base Case		Solar		Statewide		5,000	2300	240			-750	0.46	0.05			-0.15
NY Solar Study-Low Cost		Solar		Statewide		5,000	1900	4			692	0.38	0.00			0.14
NY Solar Study-High Cost		Solar		Statewide		5,000	2800	240			-2519	0.56	0.05			-0.50

https://www.nyserda.ny.gov/About/Publications/Solar-Study

** NY Solar Study Direct Construction Jobs Average Annual Impact, Years 2013 to 2025

*** NY Solar Study Ongoing Direct Operational Jobs Average Annual Impact, Years 2026 to 2049

**** NY Solar Study Total Jobs Average Annual Impact, Years 2013 to 2049