# Job and Economic Development Impact (JEDI) Model: A User-Friendly Tool to Calculate Economic Impacts from Wind Projects

The economic impacts from wind energy project development can be significant to both the rural counties and the state in which the project is located. The benefits that are generated by the expenditures, both during the construction and the operations phases of wind plants, depend on the extent to which those expenditures are spent locally, as well as the structure of the local and state economy. JEDI, the National Renewable Energy Laboratory's economic development model, is an easy-to-use tool that provides an approximation of the economic impacts to the local county and the state that can be generated from wind project development, during the construction phase of the project and throughout the 20- to 30-year life of the project.

#### **How Does JEDI Work?**

#### Inputs

The user enters data specific to the project or group of projects, including:

- · Year of installation
- Size of project
- Location
- · Cost (\$/kW)
- Any other available site-specific information.

When specific data are unavailable, the model uses default values based on data from actual wind projects.

#### Outputs

JEDI provides direct, indirect, and induced economic impacts for the construction and operating periods of any size project. The three summary categories in the model are:

- Jobs
- Earnings
- Output (economic activity).





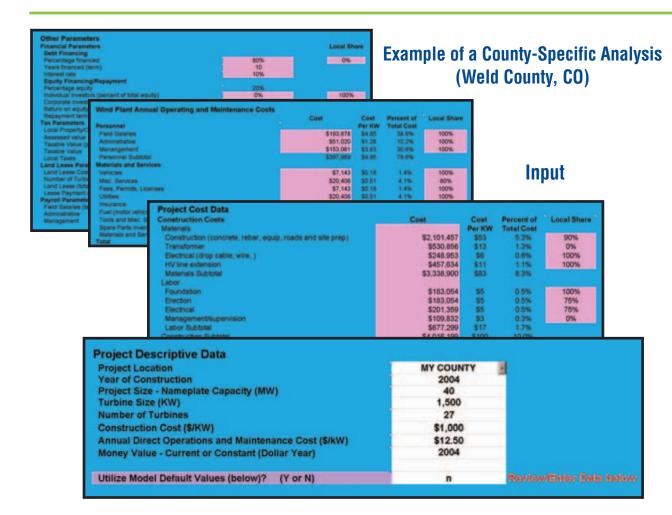
The model evaluates and sums the various impacts, including direct, indirect, and induced effects. State-specific multipliers and personal expenditure patterns are used to derive the results.

In its default form, state-specific analyses can be conducted. County or regional analyses require revisions to the multipliers.

#### Who Should Use JEDI?

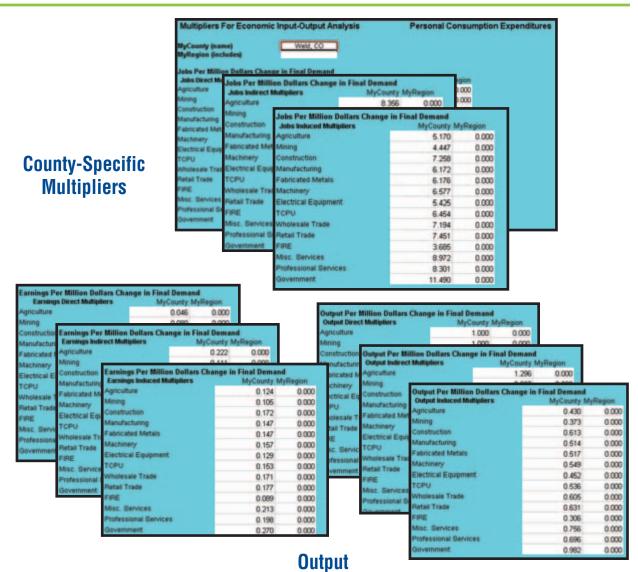
JEDI should be used by anyone interested in identifying local economic impacts associated with constructing and operating wind power plants.

The model is designed in a user-friendly format that can be easily modified to accommodate varying levels of project-specific information and user skill. The tool is designed for those who have basic or detailed information about a wind project.



### **Output**

Wind Plant - Project Data Summary	
Year of Construction	2004
Project Location	Weld, CO
Project Size - Nameplate Capacity (MW)	40.0
Turbine Size (KW)	1500
Number of Turbines	27
Construction Cost (\$/KW)	\$1,000
Annual Direct O&M Cost (\$/KW)	\$12.50
Money Value (Dollar Year)	2004
Project Construction Cost	\$40,000,000
Local Spending	\$5,090,463
Total Annual Operational Expenses	\$7,024,000
Direct Operating and Maintenance Costs	\$500,000
Local Spending	\$312,648
Other Annual Costs	\$6,524,000
Local Spending	\$508,000
Debt and Equity Payments	\$0
Property Taxes	\$400,000
Land Lease	\$108,000



	Jobs	Earnings	Output
During construction period			
Direct Impacts	42	\$1.37	\$5.09
Construction Sector Only	32	\$1.06	\$4.28
Indirect Impacts	27	\$0.86	\$3.54
Induced Impacts	34	\$0.89	\$3.19
Total Impacts (Direct, Indirect, Induced)	103	\$3.12	\$11.81
During operating years (annual)			
Direct Impacts	11	\$0.31	\$0.53
Plant Workers Only	8	\$0.25	\$0.25
Indirect Impacts	2	\$0.06	\$0.26
Induced Impacts	8	\$0.20	\$0.71
Total Impacts (Direct, Indirect, Induced)	20	\$0.57	\$1.51

Note: Totals may not add up due to independent rounding.



#### **Features**

- JEDI is designed for all levels of users; experience with spreadsheets and background in economic modeling are not required to use this tool.
- Online instructions for entering data are included.
- Detailed information is included to help users understand the type of data required for specific cells.
- Default data include state-specific multipliers.
- JEDI features flexible input options users can enter as much or as little project-specific information as is available, including expenditures and local share of spending.
- JEDI provides detailed construction spending and annual O&M expenditures, as well as the portion of local spending.
- JEDI identifies local spending on debt and equity payments, property taxes, and land lease payments.
- JEDI analyzes local jobs, earnings, and output (economic activity), including one-time impacts from the construction phase and annual or ongoing impacts from operations.
- User Add-In Location feature allows user to model county or regional impacts.
- Model includes economic data through 2000.



#### For More Information and to Access JEDI

http://www.windpoweringamerica.gov

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#### Wind & Hydropower Technologies Program

Harnessing America's abundant natural resources for clean power generation

#### A Strong Energy Portfolio for a Strong America

Energy efficiency and clean, renewable energy will mean a stronger economy, a cleaner environment, and greater energy independence for America. Working with a wide array of state, community, industry, and university partners, the U.S. Department of Energy's Office of Energy Efficiency and Renewable Energy invests in a diverse portfolio of energy technologies.



## U.S. Department of Energy Energy Efficiency and Renewable Energy Wind and Hydropower Technologies

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