

JEDI: Jobs and Economic Development Impacts Model



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The Jobs and Economic Development Impact (JEDI) models are user-friendly tools that estimate the economic impacts of constructing and operating power generation and biofuel plants at the local (usually state) level. First developed by NREL's Wind Powering America program to model wind energy jobs and impacts, JEDI has been expanded to biofuels, concentrating solar power, coal, and natural gas power plants.

Based on project-specific and default inputs (derived from industry norms), JEDI estimates the number of jobs and economic impacts to a local area (usually a state) that could reasonably be supported by a power generation project. For example, JEDI estimates the number of in-state construction jobs from a new wind farm.

JEDI models are input-output models designed to provide reasonable estimates, not exact numbers. JEDI also provides estimates on land lease and property tax revenues, when appropriate. Various ownership and financing structures can be incorporated by the user as well. JEDI presents gross project-specific results. It does not consider potential electricity price impact or alternative investment options. Using model defaults, results are reported on a statewide scale. However, JEDI can be used on a county, regional, or national basis by incorporating additional data (not included in the model).

Jobs, earnings, and output are distributed across three categories:

- Project Development and Onsite Labor Impacts
- Local Revenue, Turbine, and Supply Chain Impacts
- Induced Impacts.

Who Uses JEDI?

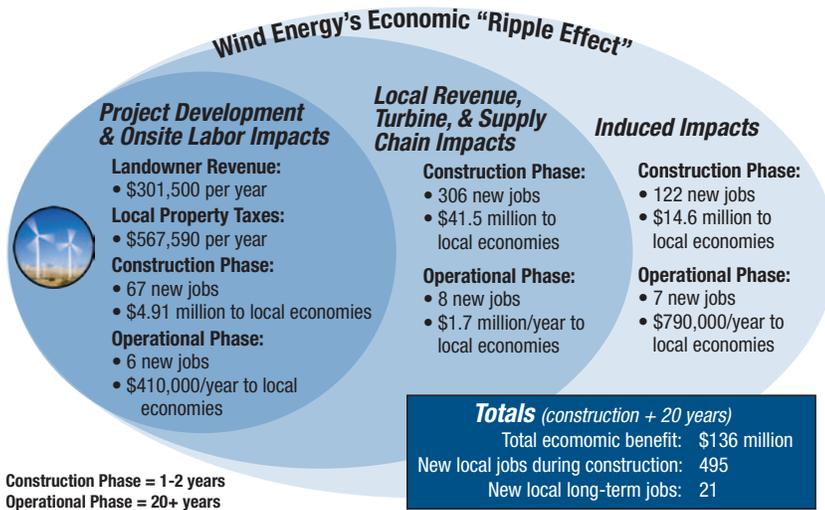
JEDI models are used by county and state decision-makers, public utility commissions, potential project owners, and others interested in the economic impacts from new electricity generation projects.

JEDI's user-friendly design allows novices to explore the statewide jobs and economic impacts from the construction and operation of power plants. Advanced users can incorporate specific data to tailor model inputs and refine conclusions drawn from model output.

JEDI model defaults are based on interviews with industry experts and project developers. Economic multipliers contained within the model are derived from Minnesota IMPLAN Group's IMPLAN Professional.

Samples of jobs in each JEDI category

Project Development & Onsite Labor Impacts	Truck drivers, crane operators, earth moving, cement pouring, construction, management, and support
Local Revenue, Turbine, & Supply Chain Impacts	Blade and tower manufacturing, steel mill jobs, parts, services, equipment manufacturing and sales, financing, banking, and accounting
Induced Impacts	Local area goods and services due to increased revenue from the first two categories. Examples include restaurants, grocery stores, retail, child care, public transit, and medical services



Sample JEDI Output

JEDI Model Version W1.09.03e

Wind Farm — Project Data Summary based on model default values

Project Location	COLORADO
Year of Construction	2009
Total Project Size - Nameplate Capacity (MW)	100
Number of Projects (included in total)	1
Turbine Size (KW)	1500
Number of Turbines	67
Installed Project Cost (\$/KW)	\$2,043
Annual Direct O&M Cost (\$/KW)	\$20.00
Money Value (Dollar Year)	2008
Installed Project Cost	\$204,315,234
Local Spending	\$36,581,782
Total Annual Operational Expenses	\$33,598,101
Direct Operating and Maintenance Costs	\$2,000,000
Local Spending	\$697,527
Other Annual Costs	\$31,598,101
Local Spending	\$869,090
Debt and Equity Payments	\$0
Property Taxes	\$567,590
Land Lease	\$301,500

Local Economic Impacts — Summary Results

During construction period	Jobs	Earnings* (in millions)	Output** (in millions)
Project Development and Onsite Labor Impacts	67	\$4.24	\$4.91
Construction and Interconnection Labor	60	\$3.78	
Construction Related Services	7	\$0.45	
Turbine and Supply Chain Impacts	306	\$11.99	\$41.47
Induced Impacts	122	\$4.30	\$14.63
Total Impacts	495	\$20.52	\$61.02
During operating years (annual)			
Onsite Labor Impacts	6	\$0.41	\$0.41
Local Revenue and Supply Chain Impacts	8	\$0.31	\$1.68
Induced Impacts	7	\$0.23	\$0.79
Total Impacts	21	\$0.95	\$2.89

* Earnings include wages and salaries for each category

** Output refers to all dollars flowing into the local economy from project-related activity
Researched by Stephen Hendrickson

The JEDI model provides output in table form (left). Presenting results visually provides a more intuitive way of understanding the distribution of jobs and economic impacts (see above ripple chart).

Find More Information

Download JEDI at www.nrel.gov/analysis/jedi/

Submit questions to JEDIsupport@nrel.gov

www.windpoweringamerica.gov



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