

Economic Impact Potential of Solar Photovoltaics in Illinois

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Acknowledgements

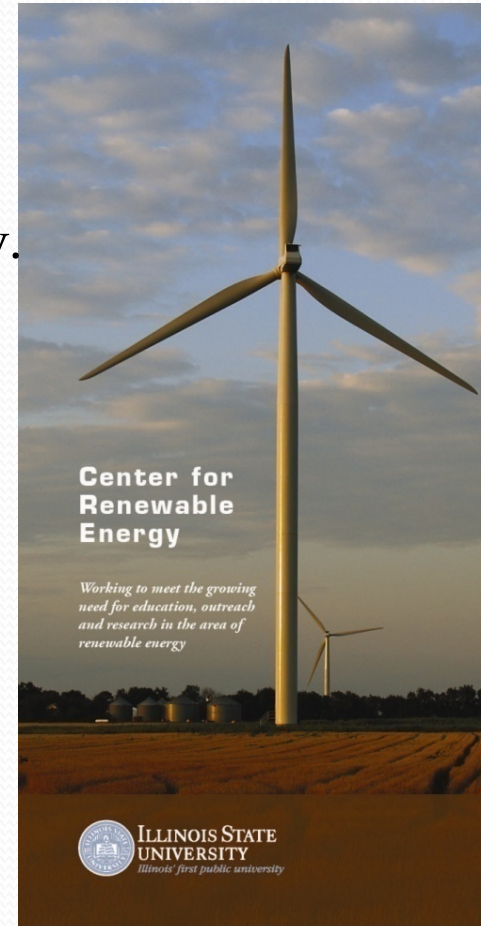
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- This study is co-authored with Dr. Jin Jo and Matt Aldeman.



CENTER FOR RENEWABLE ENERGY

Illinois State University

- Works to meet the growing need for education, outreach and research in the area of renewable energy.
- Three major functional areas:
 - to enhance the renewable energy major at Illinois State University;
 - to serve the Illinois renewable energy community by providing information to the public;
 - to encourage applied research concerning renewable energy at Illinois State University and through collaborations with other universities.



Illinois Wind Working Group



The IWWG is an organization whose purposes are to communicate wind opportunities honestly and objectively, to interact with various stakeholders at the local, state, regional and national levels, and to promote economic development of wind energy in the state of Illinois.

The Illinois Renewable Energy Conference

July 16, 2014
Illinois State University
Bone Student Center, Normal, IL
8:00 AM to 4:30 PM

EVENT PARTNERS:



Research Reports

- Illinois RPS
- Economic Impact of Wind Energy in Illinois
- Public Attitudes Towards Wind Energy
- Economic Impact of the Wind Turbine Supply Chain in Illinois
- Impact of Wind Farms on Property Values in Illinois

Overview

- Other Studies
- Study Methodology
- Results
- Potential Supply Chain Impacts
- Solar Energy Policies

Other Studies

Published Literature

- Hudson (1980)
 - negative economic impact of solar by 2020
 - Assumed PV costs would stay high and replace cheaper energy alternative
- Croucher (2012)
 - Compare state economic impact from installing one hundred 2.5 kW systems
 - Pennsylvania has highest economic impact: 28.98 jobs during install; 0.20 jobs during operation
 - Illinois is second: 27.65 during install; 0.18 during operation

State-level Studies

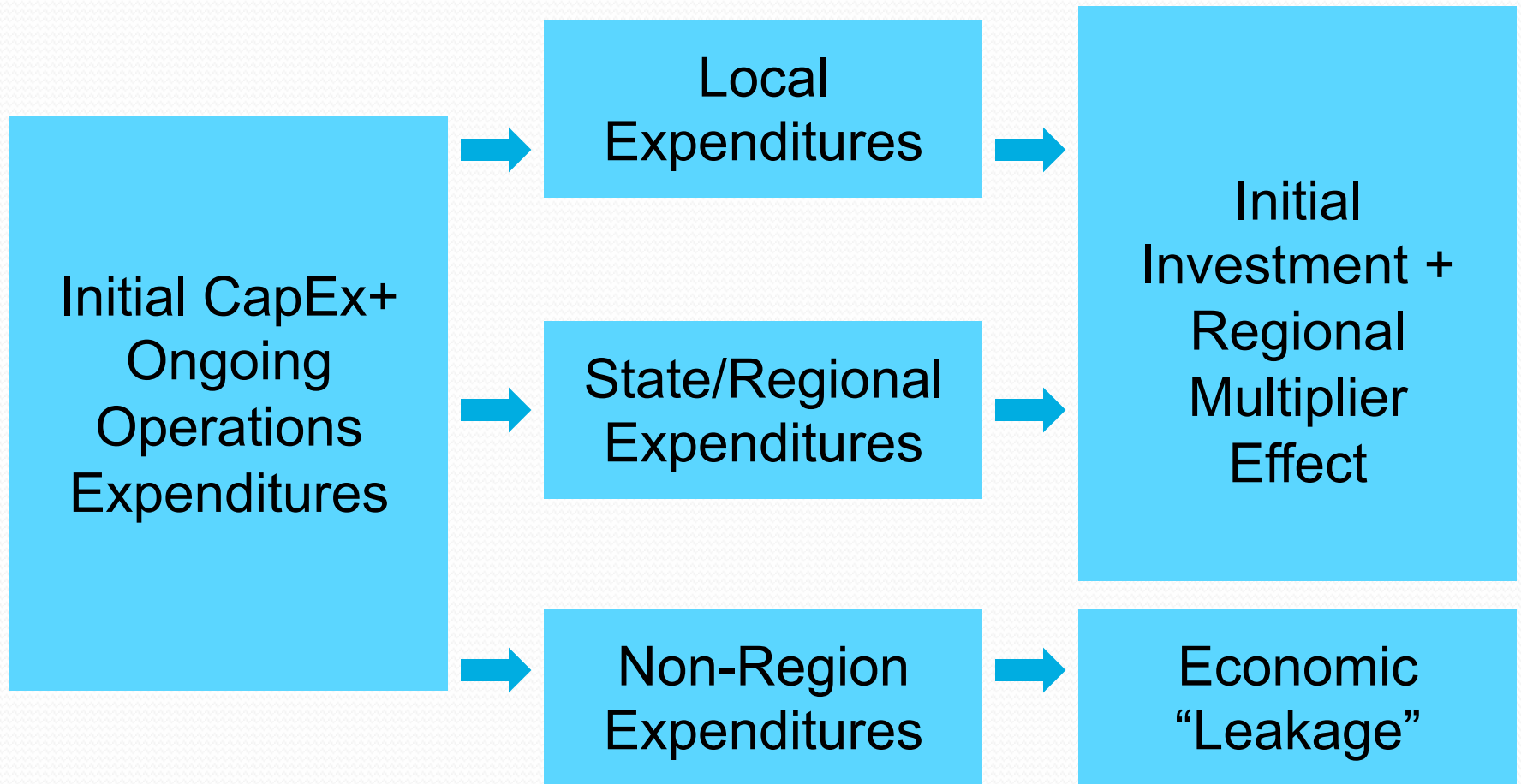
- Bezdek (2007)
 - PV market in OH; \$25 million market; 200 direct jobs and 460 total jobs
- Center for Competitive Florida (2009)
 - If FL installed 1,500 MW would lead to 45,000 direct jobs and 50,000 indirect jobs
- Solar Foundation (2013)
 - CO PV to date has resulted in 10,790 job years
 - If it reaches its goal, result would be 32,500 job-years

Study Methodology

Economic Impact Analysis

- Uses NREL's Jobs and Economic Development Impacts (JEDI) model for Scenario PV (PVS 4.5.13)
- Input-output model that measures spending patterns and location-specific economic structures.
- The JEDI model utilizes state-specific industry multipliers obtained from IMPLAN (IMpact analysis for PLANning). IMPLAN software and data are managed and updated by the Minnesota IMPLAN Group, Inc., using data collected at federal, state, and local levels.

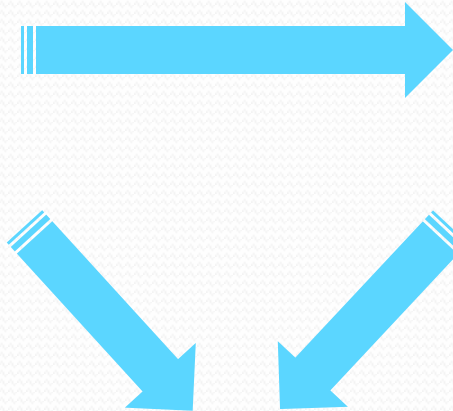
Economic Development Results from Local Capture of New Investment



Economic Development Impacts Accrue at Multiple Levels



1. On-site Labor and Professional Services



2. Equipment Production and Supply Chain



3. Induced Economic Activity (household purchases due to injection of income)



Economic Impact Study Cautions

- Results are an estimate and highly dependent on the assumptions used.
- Results are not a measure of project viability.
- Results report gross jobs not net jobs.
- Assumptions around local sourcing and procurement are fundamental in determining local economic activity.
- Jobs are reported as Full-Time Equivalent (FTE) jobs.

Results

Table 5.1 – Nine Models Using Different Input Assumptions

Technical Potential	Percentage Manufactured in Illinois		
	0%	5%	10%
2,292 MW	Model 1	Model 2	Model 3
2,714 MW	Model 4	Model 5	Model 6
11,265 MW	Model 7	Model 8	Model 9

Models 1-3

Table 5.4 – Breakdown of Construction Employment
Under the 2,292 MW Scenarios (job years)

	0%	5%	10%
Direct Impact	13,994	13,994	13,994
Indirect Impact	3,420	3,439	3,457
Induced Impact	9,340	9,350	9,361
Total Impact	26,754	26,783	26,812

Models 1-3

Table 5.4 – Breakdown of Construction Employment
Under the 2,292 MW Scenarios (job years)

	0%	5%	10%
Direct Impact	13,994	13,994	13,994
Indirect Impact	3,420	3,439	3,457
Induced Impact	9,340	9,350	9,361
Total Impact	26,754	26,783	26,812

Overall Results

Table 5.2 – Total Illinois Employment Impacts
During Construction (job years)

Technical Potential	Percentage Manufactured in Illinois		
	0%	5%	10%
2,292 MW	26,754	26,783	26,812
2,714 MW	31,680	31,714	31,749
11,265 MW	131,494	131,637	131,779

Overall Results

Technical Potential	
2,292 MW	1,223
2,714 MW	1,448
11,265 MW	6,010

Overall Results

Table 5.8 – Total Illinois Output Impacts
During Construction (\$ millions 2012)

Technical Potential	Percentage Manufactured in Illinois		
	0%	5%	10%
2,292 MW	\$3,843	\$3,854	\$3,866
2,714 MW	\$4,550	\$4,564	\$4,578
11,265 MW	\$18,886	\$18,943	\$19,000

Overall Results

Technical Potential	
2,292 MW	\$166
2,714 MW	\$196
11,265 MW	\$815

Potential Supply Chain Impacts

Existing Solar Companies in Illinois

- Wanxiang New Energy LLC, solar module manufacturer, Rockford, IL
- Lots of companies in BOS equipment manufacturing
- Appendix B has a full list

Solar Energy Policies

Illinois Existing Policies

- Renewable Energy Resources Trust (1997)
- Illinois Clean Energy Community Foundation (1999)
- RPS – IPAA (2007)
- Illinois Power Agency (2007) procures RECs
- Net metering
- Interconnection standards

Other States

Policies	Illinois	Hawaii	California	Arizona	Nevada	New Jersey
RPS	x	x	x	x	x	x
Solar Carve-Out	x				x	x
Net Metering	x	x	x	x	x	x
Feed-in Tariff		x	x			
Public Benefits Fund	x	x	x			x
Sales Tax Exemption/Abatement			x	x	x	x
Property Tax Exemption/Exclusion			x	x	x	x
Property Tax Special Assessment/Abatement	x			x	x	
Rebate Program			x		x	
Tax Credit		x		x		
Loan Program	x	x	x		x	x
Grant Program	x	x	x			
Other Financing Program		x				
Renewable Energy Credit Sales	x				x	x
Solar Rights	x	x	x	x	x	x
Solar Easements			x		x	x

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