The Clean Energy Supply Chain in Illinois: Wind, Solar and Geothermal

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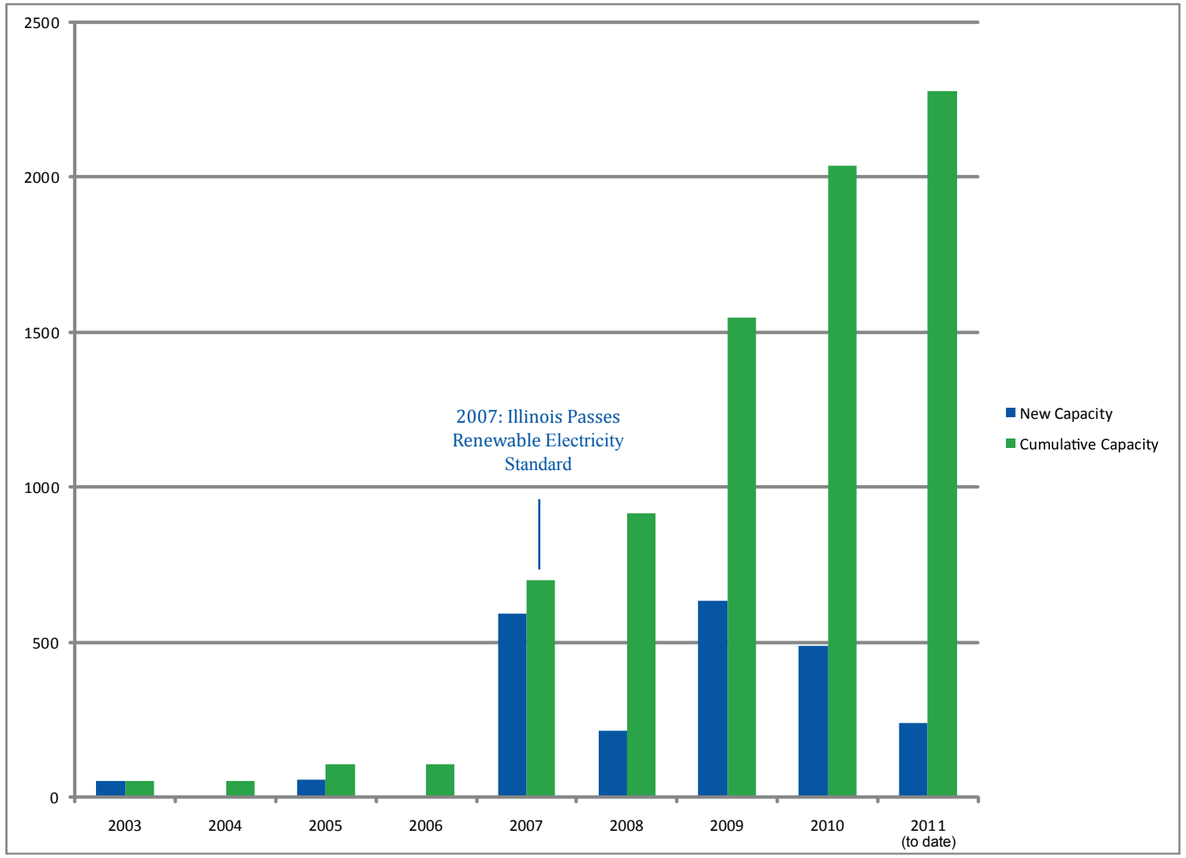
Growth in Illinois Wind Power Capacity (Megawatts)



source: American Wind Energy Association

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Powering Manufacturing Jobs and Economic Growth in Illinois

The renewable energy industry means real business and real job creation for Illinois. More than 300 companies are part of the wind, solar and geothermal supply chains in Illinois. Every megawatt of solar or wind power developed creates 15 to 20 manufacturing jobs as well as additional job growth from installation, operations and professional services jobs. The Chicago region is home to 13 corporate headquarters of major wind power companies. These headquarters generate professional services jobs in finance, insurance, real estate and law. All in all, Illinois renewable energy sector companies employ an estimated 18,000 people.

Jobs are growing in Illinois renewable energy sector. Improving the programs and policies that support clean energy will help these businesses to continue hiring. Illinois' growing renewable energy sector is advanced by:

• **Illinois' Renewable Electricity Standard (RES) with the Solar "Carve-Out."** Illinois has a strong RES and one of the best solar carve-out policies in the nation. Illinois' RES requires that 25% of electricity be provided by renewable energy sources by 2025, 75% of which must come from wind. Additionally, 6% of the renewable energy must come from solar by the year 2015, which should spur 600 – 700 megawatts of solar energy generation by 2015 and roughly 1,600 megawatts of solar by 2025.

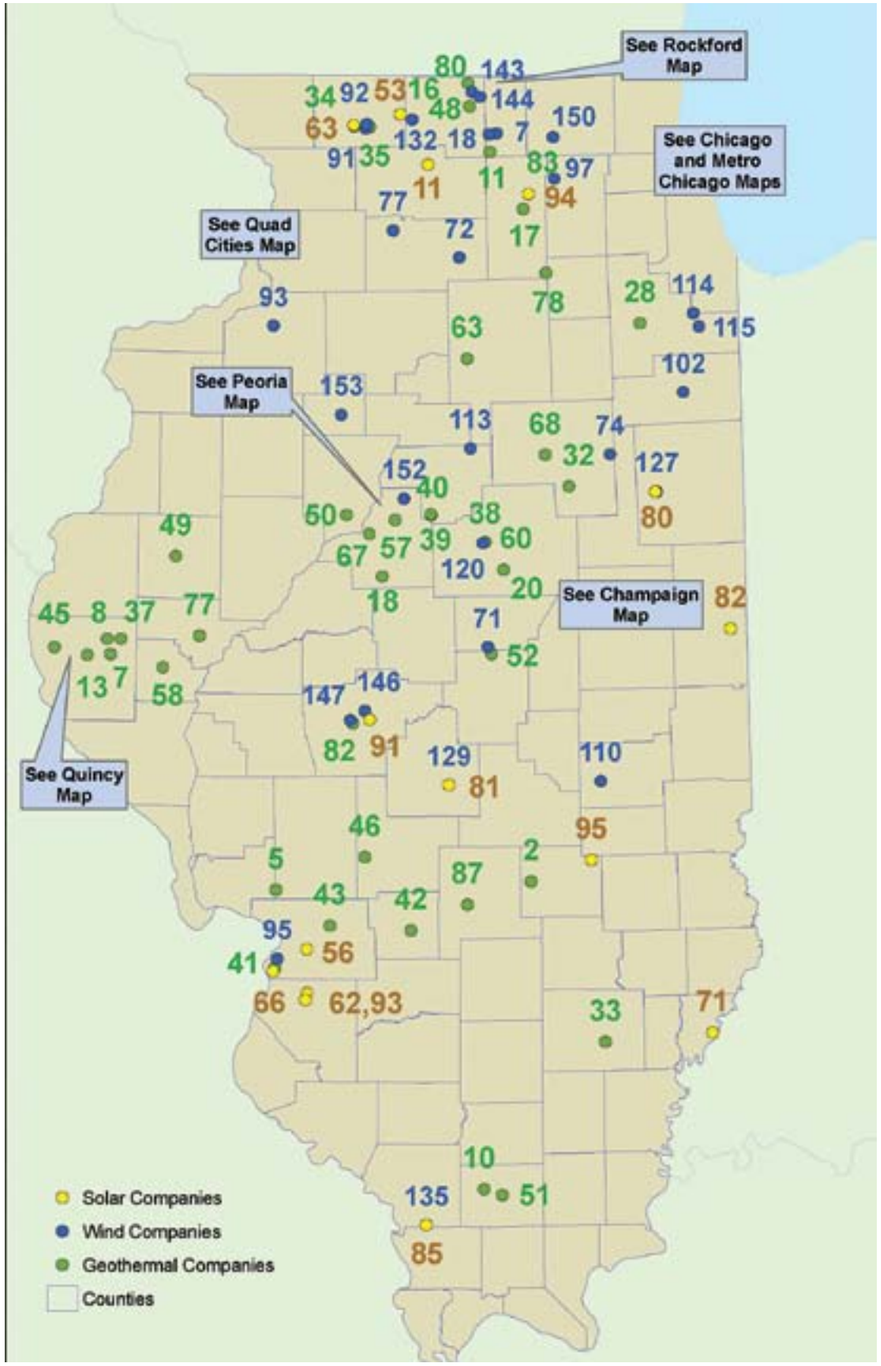
• **Illinois Clean Energy Community Foundation clean energy grants program.** This independent foundation has awarded approximately 3,000 grants totaling $160 million, supporting both energy efficiency and renewable energy projects.

• **Illinois Renewable Energy Resources Program (RERP) grant support.** This program supports new solar and other renewable energy projects. However, RERP program funding has not consistently been available. This program has thus created boom and bust cycles for solar demand, which is not an optimal approach to market development.

• **Net-metering standards.** Systems with an installed capacity of under 40KW receive the full retail rate (which is the supply plus distribution charge) for any power that is net-metered back to the grid. Net-metering is also available for large-sized systems, but only the wholesale power rate is paid, which does not include the distribution charge. Increasing the renewable system size cap would further increase renewable energy development.

• **Good interconnection standards.** Illinois' interconnection standards for distributed generation systems require grid connection within a specific timeline, mandate national engineering standards and provide for simplified application forms. As a result, the interconnection process is much more predictable, affordable and faster for distributed generation customers.

Clean Energy Supply Chain Companies in Illinois



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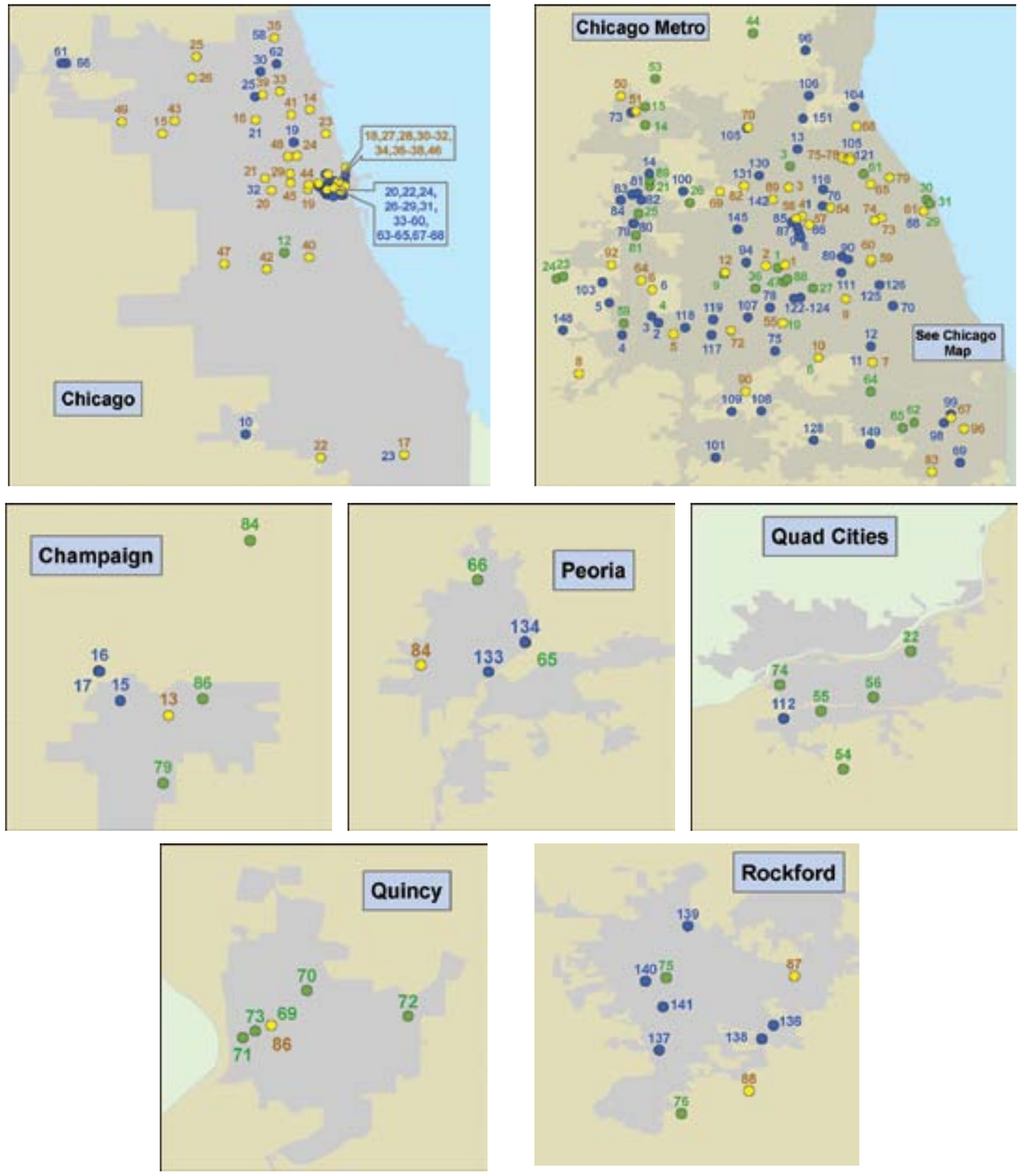

Illinois Wind Energy Companies

	Company Name	City
1.	RESTechnologies (I/D)	Arlington Heights
2.	CEMCON (S)	Aurora
3.	CENTA (C)	Aurora
4.	R.C. Wegman (I/D)	Aurora
5.	Acterra Group (I/D)	Batavia
6.	New Edison Energy (I/D)	Batavia
7.	Orbital Tool Technologies (S)	Belvidere
8.	Egetrans (S)	Bensenville
9.	R&W America (C)	Bensenville
10.	G&W Electric (C)	Blue Island
11.	Imperial Crane (S)	Bridgeview
12.	Prairie Materials (C)	Bridgeview
13.	Indeck Energy Services (I/D)	Buffalo Grove
14.	Stanley Machining and Tool (C)	Carpentersville
15.	HL Precision Machining (C)	Champaign
16.	Midstate Renewable Energy Svs (I/D)	Champaign
17.	MUTI (I/D)	Champaign
18.	Ipsen International (C)	Cherry Valley
19.	A. Finkl & Sons (C)	Chicago
20.	Acciona (I/D)	Chicago
21.	Aerotecture International (I/D)	Chicago
22.	ArcelorMittal (C)	Chicago
23.	Atlas Tube (C)	Chicago
24.	Baker Mckenzie (C)	Chicago
25.	Balanced Wind LLC (I/D)	Chicago
26.	Blue Star Energy Solutions (S)	Chicago
27.	Bridge Strategy Group (S)	Chicago
28.	CNA (S)	Chicago
29.	DLA Piper (S)	Chicago
30.	Double-K Consulting (S)	Chicago
31.	E.On Climate & Renewables (I/D)	Chicago
32.	Earth Wind and Solar Energy (I/D)	Chicago
33.	Enablon (S)	Chicago
34.	EWS Consulting (S)	Chicago
35.	Fleming Energy (S)	Chicago
36.	Foley & Lardner LLP (S)	Chicago
37.	Gaelectric North America, Inc. (I/D)	Chicago
38.	Gamesa Energy (T)	Chicago
39.	Goldwind (T)	Chicago
40.	Horizon Wind Energy (I/D)	Chicago
41.	Invenergy (I/D)	Chicago
42.	Jenner & Block (S)	Chicago
43.	JP Morgan Capital Group (S)	Chicago
44.	Latham & Watkins (S)	Chicago
45.	Lincoln Renewable Energy (I/D)	Chicago
46.	Lucas Group (S)	Chicago
47.	MAKE Consulting (S)	Chicago
48.	Mayer Brown LLP (S)	Chicago
49.	Michael Stavy (S)	Chicago
50.	Midwest Generation (I/D)	Chicago
51.	Midwest Wind Energy (I/D)	Chicago
52.	Navigant Consulting (S)	Chicago
53.	Nordex (T)	Chicago
54.	PNE Wind (I/D)	Chicago
55.	Plante & Moran (S)	
56.	RSMR Global Resources (S)	Chicago
57.	Rynova (S)	Chicago
58.	S&C Electric (C)	Chicago
59.	Sargent & Lundry (S)	Chicago
60.	Scott Balice Strategies (S)	Chicago
61.	Suzlon (T, I/D)	Chicago
62.	Tempel Steel (C)	Chicago
63.	Terracon (S)	Chicago
64.	TTX Company (S)	Chicago
65.	US Mainstream Renewable Power (I/D)	Chicago
66.	Vestas (T)	Chicago
67.	Wind Capital (I/D)	Chicago
68.	Winston & Strawn (S)	Chicago
69.	Funk Linko (C)	Chicago Heights
70.	Brad Foote (C)	Cicero
71.	Trinity Structural Towers (C)	Clinton
72.	Lotus Creative Innovations (S)	Compton
73.	Snap-on Industrial (C)	Crystal Lake
74.	Krause Surveying (S)	Cullom
75.	Leeco Steel (C)	Darien
76.	Parker Hannifin (C)	Des Plaines
77.	Willet, Hofmann & Associates (S)	Dixon
78.	Burns & McDonnell (S)	Downers Grove
79.	Harting (C)	Elgin
80.	Helukable USA (C)	Elgin
81.	Winergy (C)	Elgin
82.	SKF Seals America (C)	Elgin
83.	Usach Technologies (C)	Elgin
84.	Villares Metals/Bohler Uddeholm (C)	Elgin
85.	Bley (C)	Elk Grove
86.	Fluitecnik (C)	Elk Grove
87.	Acme Industries (C)	Elk Grove Village
88.	American Renewable Energy (I/D)	Evanston
89.	Ammentorp Tool (C)	Franklin Park
90.	H&H Electric Company (I/D)	Franklin Park
91.	Elspec (C)	Freeport
92.	Fehr-Graham & Associates (S)	Freeport
93.	Foundation Engineering (S)	Geneso
94.	Hydac (C)	Glendale Heights
95.	Heidtman Steel Products (C)	Granite City
96.	DriveCon/R&M Materials (C)	Gurnee
97.	Professional Testing Service (S)	Hampshire
98.	CN Worldwide (S)	Harvey
99.	LB Steel (C)	Harvey
100.	BoschRexfoth (C)	Hoffman Estates
101.	Data Cell Systems (I/D)	Joliet
102.	Gordon Electric (C)	Kankakee
103.	RichardsonRFPD (C)	LaFox
104.	Notus US (I/D)	Lake Forest
105.	Randack (C)	Lake Zurich
106.	SmartSignal (C)	Lisle
107.	Lockport Steel (C)	Lockport
108.	Walco Tool & Engineering (C)	Lockport
109.	S&K Air Power Tool and Supply (C)	Mattoon
110.	Power Plant Services (S)	Melrose Park
111.	Glual Hydraulics (S)	Milan
112.	SMF (C)	Minonk
113.	Cardno (S)	Monee
114.	Triton Manufacturing (C)	Monee
115.	NTN Bearing Corporation (C)	Mt. Prospect
116.	Broadwind (C)	Naperville
117.	Larson Engineering (C)	Naperville
118.	Ryan Companies (S)	Naperville
119.	Farnsworth Group (S)	Normal
120.	Pure Energy Alternatives (I/D)	Northbrook
121.	ProductSpace Solutions (S)	Oak Brook
122.	Trintek (S)	Oak Brook

Key: C=Components I/D=Installers/Developers S=Services T=Turbine Manufacturers / Sales

Illinois Wind Energy Companies (continued)

	Company Name	City
123.	Graycor Industrial Constructors (S)	Oak Brook Terrace
124.	Professional Logistics Group (S)	Oak Park
125.	Vectora Transportation (S)	Oak Park
126.	Angel Wind Energy (I/D)	Onarga
127.	John Burns Construction (I/D)	Orland Park
128.	Wind Solar USA (I/D)	Owaneco
129.	Iberdrola Renewables US (T, I/D)	Palatine
130.	Schneider Electric (C)	Palatine
131.	Anpec Industries (C)	Pecatonica
132.	A. Lucas & Sons (C)	Peoria
133.	Rohn (C)	Peoria
134.	Advanced Energy Solution (I/D)	Pomona
135.	Caldwell Group (S)	Rockford
136.	Clinkenbeard & Associates (C)	Rockford
137.	Elite Tool & Wire (C)	Rockford
138.	Ingersoll Machine Tools (C)	Rockford
139.	Rockford Bolt and Steel (C)	Rockford
140.	Rogers Brothers Galvanizing (C)	Rockford
141.	Energy 360 Solutions (I/D)	Rolling Meadows
142.	Forest City Gear (C)	Roscoe
143.	TSG (S)	Roscoe
144.	Earle M. Jorgensen (C)	Schaumburg
145.	American Wind Energy Mgmt. (I/D)	Springfield
146.	Stantec (S)	Springfield
147.	Chicago Industrial Fasteners (C)	Sugar Grove
148.	Panduit (I/D)	Tinley Park
149.	INTREN (C)	Union
150.	Hwacheon (C)	Vernon Hills
151.	Miller Welding & Iron Works (C)	Washington
152.	Orion Energy Group (I/D)	Wyoming

Illinois Geothermal Energy Companies

	Company Name	City
1.	Raimonde Drilling	Addison
2.	Mathias Electric & Plumbing	Altamont
3.	Optimal Energy	Arlington Heights
4.	State Automatic Heating & Cooling	Batavia
5.	Den-Son Heating & Cooling	Brighton
6.	GeoSolar Energy Farm	Burr Ridge
7.	Adams Electric Cooperative	Camp Point
8.	Rob's Refrigeration, HVAC & Electric	Camp Point
9.	Great Lakes Geo Thermal	Carol Stream
10.	RSP Heating & Cooling	Carterville
11.	A Polar Bear Air	Cherry Valley
12.	Geothermal House	Chicago
13.	Husemann Electric	Coatsburg
14.	Althoff Industries	Crystal Lake
15.	Efflandt Geothermal	Crystal Lake
16.	Geostar Mechanical	Davis
17.	C/H Plumbing	Dekalb
18.	Tri-State Trenching and Drilling	Delavan
19.	Robert Bair	Downers Grove
20.	Kickapoo Drilling	Downs
21.	Geotech Mechanical	Dundee
22.	Swanson Mechanical	East Moline
23.	Correct Direction	Elburn
24.	J&R Herra	Elburn
25.	Advanced Geothermal	Elgin
26.	Environmental Comfort Team	Elgin
27.	TDH Mechanical	Elmhurst
28.	TM Mechanical	Elwood
29.	American Renewable Energy&Power	Evanston
30.	American Vintage Home	Evanston
31.	Indie Energy	Evanston
32.	Popejoy Plumbing, Heating & Elec.	Fairbury
33.	Fry Excavating	Fairfield
34.	Jansen Heating	Freeport
35.	Lemanski Heating & A/C	Freeport
36.	Chicagoland Geothermal	Glen Ellyn
37.	Water Furnace	Golden
38.	Hinrichsen Heating & A/C	Goodfield
39.	The Hole Deal	Goodfield
40.	Tri-County Irrigation & Plumbing	Goodfield
41.	Amsco Mechanical	Granite City
42.	Enertech Manufacturing	Greenville
43.	Ernst Heating and Cooling	Hamel
44.	Balanced Air Heating & Cooling	Lake Villa
45.	Vinson & Sill	Lima
46.	Snell Enterprises	Litchfield
47.	HMS Engineering	Lombard
48.	Kinovate	Machesney Park
49.	Arnold Brothers Heating & Cooling	Macomb
50.	H&S Mechanical	Mapleton
51.	D&C Heating and Cooling	Marion
52.	Mashburn Well Drilling	Maroa
53.	Sub-Surface Geothermal	McHenry
54.	Johnson Controls	Milan
55.	QC Geothermal	Milan
56.	J.L. Brady	Moline
57.	Garber Heating and Air Conditioning	Morton
58.	Scranton Refrigeration & Electric	Mt. Sterling
59.	Air-Rite Heating & Cooling	North Aurora
60.	Bratcher Heating & A/C	Normal
61.	Roberts Heating & A/C	Northbrook
62.	S. Mechinal	Oak Forest
63.	John's Services & Sales	Oglesby
64.	RD-n-P Drilling	Palos Heights
65.	Connor Company	Peoria
66.	Yeomans Distributing Company	Peoria
67.	Central Heating & Air Conditioning	Perkin
68.	Kupferschmid	Pontiac
69.	Air Specialists	Quincy
70.	Elam Heating & A/C	Quincy
71.	Keck Heating & Air	Quincy
72.	Peters Heating & A/C	Quincy
73.	Stevens Heating & A/C	Quincy
74.	KJWW Engineering Consultants	Rock Island
75.	Area Mechanical	Rockford
76.	Geothermal Services	Rockford
77.	Toland	Rushville
78.	Layne Western	Sandwich
79.	Reliable Mechanical	Savoy
80.	Bloyer Well & Pump	South Beloit
81.	EarthSmart Energy	South Elgin
82.	Henson Robinson	Springfield
83.	Dahlquist Inc. Heating & Cool	Sycamore
84.	Hoveln Heating & Cooling	Thomasboro
85.	Air-ease Geothermal,Heating & A/C	Tinley Park
86.	A & R Mechanical Contractors, Inc.	Urbana
87.	Hunter Appliance Heating & Air	Vandalia
88.	Ridgeway Precision Mechanical	Villa Park
89.	Leith Heating & Cooling	West Dundee

Illinois Solar Energy Companies

	Company Name	City
1.	Batteries Unlimited	Addison
2.	Sun Heat Solar	Addison
3.	HarneTech	Arlington Heights
4.	RESTechnologies	Arlington Heights
5.	Velux America, Inc.	Aurora
6.	New Edison Energy	Batavia
7.	Imperial Crane	Bridgeview
8.	Solara Systems	Bristol
9.	Current Communications	Broadview
10.	GeoSolar Energy Farm	Burr Ridge
11.	Sunair	Byron
12.	Invensys Controls	Carol Stream
13.	Midstate Renewable Energy Service	Champaign
14.	101 Celsius	Chicago
15.	Able Distributors	Chicago
16.	Aerotecture International	Chicago
17.	Atlas Tube	Chicago
18.	Burnham	Chicago
19.	Chicago Wind and Solar	Chicago
20.	CIC Energy and Supply	Chicago
21.	Earth Wind and Solar Energy	Chicago
22.	Fabricating and Welding Corp.	Chicago
23.	G-Tech Energy	Chicago
24.	Gabriel Environmental	Chicago
25.	Good Electric	Chicago
26.	Hardt Electric	Chicago
27.	Invenergy	Chicago
28.	Lincoln Renewable Energy	Chicago
29.	Meyer Electrical Construction	Chicago
30.	Michael Stavy	Chicago
31.	NextGen Solar	Chicago
32.	PVPower	Chicago
33.	RSMR Global Resources	Chicago
34.	S&C Electric	Chicago
35.	Sargent & Lundry	Chicago
36.	Scott Balice Strategies	Chicago
37.	SoCore Energy	Chicago
38.	SolAir Works	Chicago
39.	Solargenix Energy	Chicago
40.	SolarWerks/ Urban Renewable Energy	Chicago
41.	Sun Phocus	Chicago
42.	Tesla Solar Technologies	Chicago
43.	Trainor Solar	Chicago
44.	Unique Solar Solutions	Chicago
45.	UPC Solar	Chicago
46.	US Solar Power Corporation	Chicago
47.	Windfree	Chicago
48.	Windy City Renewable Energy	Chicago
49.	Building Energy Experts	Crystal Lake
50.	Integrated Design and Supply	Crystal Lake
51.	Kuchefski Heating and Air Conditioning	Danville
52.	GeoStar Mechanical	Davis
53.	WoodStar Energy	Des Plaines
54.	Robert Bair Plumbing Heating & Air	Downers Grove
55.	Day & Night Solar	Edwardsville
56.	Fluitecnik	ElK Grove
57.	Shamrock Green Electric	Elk Grove
58.	Home Patron	Elmwood Park
59.	Solar Energy of Illinois	Elmwood Park
60.	American Renewable Energy & Power	Evanston
61.	Pyramid Electrical Contractors	Fairview Heights
62.	Jansen Heating	Freeport
63.	Habi-Tek	Geneva
64.	WinSol Power Company	Glenview
65.	Guarantee Electrical	Granite City
66.	Unistrut Energy Solutions	Harvey
67.	Highland Park Electric	Highland Park
68.	Fanuc Robotics	Hoffman Estates
69.	Gere Marie	Lake Zurich
70.	Aldridge Electric	Libertyville
71.	Dersch Energies	Mount Carmel
72.	WCP Solar Services	Naperville
73.	MicroLink	Niles
74.	Solar Service	Niles
75.	Chicago Solar Technologies	Northbrook
76.	Pure Energy Alternatives	Northbrook
77.	Renewable Energy Alternatives	Northbrook
78.	Solar Xorce	Northbrook
79.	Fish Windows Cleaning	Northfield
80.	Angel Wind Energy	Onarga
81.	WindSolarUSA	Owaneco
82.	Schneider Electric	Palatine
83.	Millennium Electrical	Park Forest
84.	Wind and Solar by Blackshor	Peoria
85.	Advanced Enregy Solutions Group	Pomona
86.	Air Specialists	Quincy
87.	Solergy	Rockford
88.	Wanxiang New Energy	Rockford
89.	Energy 360 Solutions	Rolling Meadows
90.	Metropolitan Industries Inc	Romeoville
91.	Haenig Electric Company	Springfield
92.	SHARE Energy	St. Charles
93.	Mid America Advanced Power Solutions	Swansea
94.	Dahlquist Heating & Cooling	Sycamore
95.	Tick Tock Energy	Teutopolis
96.	Solar Electric	Thornton

Chicago: Wind Industry Corporate Headquarters

Chicago is home to at least 13 global or U.S. headquarters of major wind power companies. That is more headquarters than any other city in the United States. This critical mass, in turn, attracts more businesses to this headquarters city. Access to transatlantic and transpacific flights, a central location in the Midwest "wind belt," the availability of a multidisciplinary workforce and professional services and an attractive civic community have all combined to make Chicago a natural choice for many wind companies' headquarters.

The demand for legal, financial, insurance, real estate and other corporate headquarters-related services generates high-paying, high-skilled professional jobs for the City. Wind industry and supply chain companies with global and U.S. headquarters in the Chicago area include:

Acciona, a $7 billion Spanish-based multinational corporation, develops and manages clean energy projects, operates a turbine assembly and has its North American headquarters in Chicago. Acciona has ownership interests in seven North American wind farms.

Broadwind Energy, based in Naperville, is a wind industry holding company with four main businesses: turbine tower construction, precision gearing systems manufacturing, logistics, and technical and engineering services. Brad Foote Gear Works, a subsidiary company, is headquartered in Cicero.

E.On Climate and Renewables has its U.S. headquarters in Chicago and is one of the world's largest developers and owners of renewable power projects. E.On has developed 1,700 megawatts of wind projects in the U.S.

Fleming Energy, an Irish company with its U.S. headquarters in Chicago, is currently exploring wind investment opportunities here.

Goldwind, a Chinese turbine original equipment manufacturer, selected Chicago as its corporate headquarters in the Americas. The company is one of the largest turbine manufacturers in the world and is committed to growing its North American presence. Goldwind plans to build nacelle assembly facilities in the U.S.

Invenergy has its global headquarters in Chicago and develops, owns and operates large-scale renewable energy projects in North America and Europe. The company has developed 20 U.S. wind farms, two of which are in Illinois, making it one of the nation's largest independent wind energy producers. The company has expanded into solar energy and is developing a 20 MW project on the Southside of Chicago.

Lincoln Renewable Energy is headquartered in Chicago. This wind and solar developer has projects in active development in 11 states, representing total installed capacity of over 3,000 MW.

Midwest Wind Energy, headquartered in Chicago, is a utility-scale wind farm developer, with a current project portfolio of over 5,000 MW of power in Illinois and the Midwest.

Nordex is a German wind turbine manufacturer with its U.S. headquarters in Chicago. Nordex recently opened a domestic manufacturing facility in Arkansas.

NTN Bearing is one of the world's largest bearing producers, and its American headquarters is in Mt. Prospect. NTN manufactures bearings for wind turbine manufacturers, as well as for operations and maintenance providers.

PNE Wind is a German onshore and offshore wind developer with its U.S. headquarters in Chicago. PNE signed a joint venture agreement with Renewable Solutions to develop more than 300 MW of wind projects in Minnesota, North Dakota and South Dakota.

Suzlon, an Indian multinational company with 14,000 employees in 21 countries, is an integrated wind turbine manufacturer with its North American headquarters in Chicago. Suzlon manufactures turbine nose cones and rotor blades at its two Minnesota plants.

U.S. Mainstream Renewable Power, an Irish company with its U.S. headquarters in Chicago, plans to invest $1.6 billion over the next four years in three Illinois wind farm developments. The company has a development pipeline of over 800 MW with five wind farms in the U.S. and wind and solar projects with installed capacity of over 11,000 MW overseas. The company expects to generate enough clean energy from these projects to power 200,000 homes by 2013.

Wind Energy Businesses in Illinois

The Illinois wind industry includes turbine and tower makers; manufacturers of gears, couplings, bearings and fasteners; legal, financial, engineering and consulting firms; and diagnostic software designers. ELPC identified 150 Illinois companies involved in the wind industry and those featured below highlight the breadth of the types of businesses.

A. Finkl & Sons, Chicago, is one of the world's leading suppliers of specialty steels and custom open die forgings. The company is currently constructing a new manufacturing facility on Chicago's southside that will triple its current capacity. Wind energy is currently a small industrial sector for Finkl, but: "The new facility will allow the company to economically produce grades of steel that will meet the strict quality standards adopted by the wind energy industry," commented President Joe Curci. "The company can then compete at a global level for wind energy related components."

A. Lucas & Sons Steel, Peoria, is the oldest continually operating steel fabricator in the U.S. The company employs 22 people and expects wind industry work to comprise 25% of its business in the next few years.

Lucas received an American Recovery and Reinvestment Act (ARRA) grant and, as a result, has added 4 manufacturing and sales employees and is looking to fill additional positions. According to company President Margaret A. Hanley: "This grant will transform a marvelous old company into one of America's leading green manufacturers. The American people have put their faith in us to succeed and that is what we intend to do."

Brad Foote Gear Works, Cicero, is a national leader in large gearing systems for industrial markets, including steel mills, transportation and renewable energy. Brad Foote, in business since 1924, operates at three locations and employs 260 people. Wind turbine gears account for anywhere from 40% to 70% of the company's business since 2006. "A national Renewable Energy Standard would be very helpful to the industry," said VP of Human Resources Dennis Taggart. "Creating a climate that is conducive to the wind industry is key to increasing demand and green jobs in Illinois."

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With funds from an ARRA grant, Brad Foote purchased another large measuring machine, which will enable it to double its wind business. Brad Foote is now a subsidiary of Broadwind Energy in Naperville.

JP Morgan Capital Corporation Energy Investments, Chicago, is the leader in tax equity financing. This clean energy investment group includes 30 - 40 professionals and has been involved in many of the $2.7 billion in wind tax equity deals completed in 2010.

LB Steel, Chicago Heights and Harvey, is one of the largest processors of strip mill plate in North America. The company plans to expand its wind power business by taking a "Field of Dreams approach," according to John Faletti, Vice President of Sales. "We are building it in expectation of the business growing for us." LB Steel is expanding its Chicago Heights plant, hoping to grow from 20 employees to 35.

Navigant Consulting is an international consulting firm and the 270 employees in its Energy Practice focus on issues across the energy value chain. Navigant Consulting is headquartered in Chicago and has more than 40 offices around the world.

S&C Electric Company, in Chicago's Rogers Park neighborhood, has 100 years of experience in designing and manufacturing electric power switching and protection equipment and power quality products, primarily for application at high voltage. S&C now manufactures wind turbine switchgear, VAR compensation systems that help wind farms meet grid interconnection requirements, substation transformer protective devices, stored energy management systems, and related design, engineering and construction services.

Smart Signal, headquartered in Lisle, designs diagnostic software that helps improve turbine reliability and reduces maintenance costs. Smart Signal employs 100 people and has a dedicated wind industry group.

Stanley Machining and Tool, Carpentersville and Hampshire, has about 100 employees at its plants. The company has been manufacturing large-scale components for the wind industry for the past two decades. Stanley not only supplies the wind industry, but also sources 60% of its energy from renewable resources.

Winergy Drive Systems, Elgin, is the largest producer of gearboxes in the wind industry. Winergy recently opened its second turbine production facility in Elgin, one of the first LEED certified plants in Illinois. The expansion involves an investment of $20 million by the company and $5.7 million through the Illinois Department of Commerce and Economic Opportunity's business investment package. The new plant employs 350 people, leading to a total of 500 Winergy employees in Illinois.

Solar Energy Businesses in Illinois

ELPC identified 95 companies in the Illinois solar supply chain. Most of these solar companies are installers, however some offer consulting services or electrical contracting services.

Aldridge Electrical, Libertyville, is an electrical contractor with over 500 employees and 60 years of experience completing transportation, drilling, mass transit, renewable energy and utility projects. In the renewable energy sector, Aldridge performs a range of electrical work including wiring turbines, installing solar panels for utility scale installations, installing high voltage underground cables, building electrical substations and laying transmission lines. Aldridge completed the electrical work for the 10 MW Exelon solar installation on the south side of Chicago. The company started its renewable energy division five years ago.

Earth Wind & Solar Energy, Chicago, has been installing turnkey energy systems for five years. The company also designs both solar thermal and solar PV systems for residential and commercial. It sells both a horizontal axis wind turbine and a vertical axis wind turbine designed to be mounted on top of any building.

"For small business owners, State and Federal renewable energy incentives are crucial and much needed to create green jobs and business growth in Illinois. In a struggling economy it helps us to promote the affordability of these systems, while reducing our dependency on fossil fuels," stated Riana Caravette, Earth Wind & Solar co-owner.

Habi-Tek, Geneva, has designed and installed 40 photovoltaic energy systems on residential, commercial, institutional and educational buildings, totaling close to 300,000 watts of installed capacity, since 2001. The company has two full time employees and works with subcontractors as needed. "In order to grow the renewable energy industry in Illinois, the State needs more stable policies that emphasize energy conservation and a wider variety of renewable energy projects," commented Tom DeBase, founder of Habi-Tek. The company has installed PV school lighting systems in Haiti and Tanzania, as well as PV water pumping projects in Mexico.

Schneider Electric, Palatine, is a global specialist in energy management with operations in more than 100 countries and over 110,000 employees globally. Within its Renewable Energies business, Schneider specializes in a wide array of photovoltaic markets including solar farms, large commercial, residential, off-grid and backup power, with solutions ranging from inverters and switchgear to energy management monitoring and security products and services. Schneider also provides electrical infrastructure solutions and services for wind farms.

SoCore Energy, Chicago, is a commercial solar solutions provider with 17 employees. The company provides a full range of services including feasibility analysis, system design, securing financing and incentives, and managing turn-key solar installations. SoCore's systems are ballasted using its proprietary Sunlock™ racking system. Depending on customers' needs, SoCore sells, leases, or provides a power purchase agreement to finance its systems, which range in size from 50 KW to 5 MW.

SoCore has completed 10 installations, six of which are in Illinois. "Illinois' 40 KW net metering cap makes larger commercial solar installations much less financially viable than states without a similar cap," commented Greg Buzzell. "And because project size is limited in Illinois, so is economic development and subsequent job creation."

Solar Service, Niles, founded in 1977, designs and installs solar systems for schools, municipalities, multi-family buildings and not-for profit organizations. These projects include some of the largest solar thermal and solar electric arrays in Illinois. Solar Service's primary market is Illinois, but has also worked throughout the United States. "We are encouraged about the potential and viability of the renewable energy industry in Illinois," commented Brandon Leavitt, President, "And we are optimistic that supportive state policies and programs will create positive economic benefits for installers, consumers and communities."

Geothermal Businesses in Illinois

Geothermal systems operate by using the stable temperature of the earth to transfer heating and cooling into buildings. In winter, fluid circulating through pipes buried in the ground absorbs heat and carries it into the building. A heat pump in the building concentrates the thermal energy and transfers it to the interior space for warmth. When cooling is needed, heat is extracted from the air in the building and transferred to the piping, where it is carried back into the earth.

The geothermal industry is thriving especially in Central and Southern Illinois and the sector is beginning to see growth in the Northern part of the state as well. ELPC identified 89 businesses in Illinois' geothermal supply chain, including installers, drillers and several large-scale commercial geothermal businesses.

Adams Electric Cooperative, Camp Point, has 33 employees and serves over 8,500 members, maintaining over 2,220 miles of electric lines in parts of seven rural Illinois counties. Adams has several programs to support installation of geothermal systems, including lower electricity rates (to offset the cost of running the equipment) and a $500 rebate program for new installations. About 10% of Adams' members use geothermal for their heating and cooling needs, and 50% of new homes on Adams' lines install geothermal systems. "Members will often tell me they can't afford geothermal," stated Bill Stalder, Manager of Marketing and Member Services, "But I can emphasize that their increased mortgage payment will be more than offset by their energy cost savings. Geothermal makes sense both economically and for renewable energy development."

Althoff Industries, Crystal Lake, has 50 years of experience in plumbing, mechanical, electrical and control services, both in the residential and commercial/industrial sectors. In recent years, the company has worked to become a leader in geothermal HVAC systems for both residential and institutional/commercial facilities. The company has completed systems ranging from 6 tons to 420 tons.

Indie Energy, Evanston, was formed in 2006 to develop technology to make widespread geothermal heating and cooling more feasible through energy efficiency improvements and its Smart Geothermal™ technology. Indie works

with commercial, industrial, and multi-family clients and has completed over 2 million square feet of installations in the Chicago metropolitan area, including a 40-ton hybrid system at a LEED certified Walgreens in Oak Park.

Indie has 30 employees and is a vertically integrated company with in-house, technology systems, energy field engineering and drilling capabilities. Indie has experienced increased demand for geothermal installations, in part due to the meaningful Federal incentives available for systems.

Peters Heating and Air Conditioning, Quincy, has seven locations, three in Illinois and four in Missouri. Peters is the largest geothermal installer in the country. The company began working in geothermal in the 1970s and has grown to 180 employees, partly due to increased demand for geothermal systems. In 2010, Peters generated approximately $10 million in geothermal revenue and completed over 400 installations. The company cited a number of demand drivers, including partnering with utilities that offer lower electricity rates for geothermal customers and the higher reliability and lower maintenance cost of equipment. "We have seen steady geothermal demand even in the face of the recession," stated Marty Peters, President, "The rebates and tax credits have made a positive difference and have helped us keep people busy and employed."

Clean Tech Start-Ups in Illinois

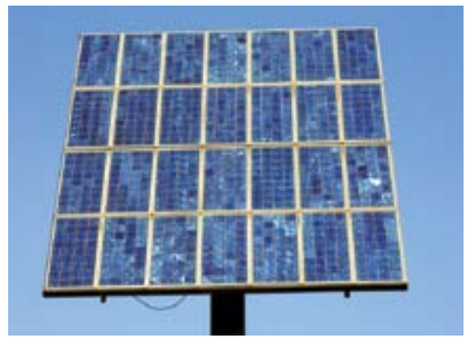
Not only is Illinois home to established solar and wind businesses, including manufacturers that have re-tooled from other industrial sectors, but the state also hosts early stage clean energy businesses. We profile four such companies below.

NextGen Solar, Chicago, is an early stage company wth a Cooperative Research Agreement with Argonne National Labs to further develop its three-dimensional solar panel technology. The NextGen solar panel will maximize the amount of solar energy capture in a limited footprint. NextGen's objective is to deliver higher (25%) efficiency, at lower (1/3) costs, as compared to most of the solar panels currently on the market. NextGen uses a technology platform that is different from other photovoltaic technologies. The company's goal is to have the first PV solar cell technology that combines the high efficiency of inorganic PV with the low costs and materials benefits of organic PV. The company was recently declared one of the winners of the Clean Energy Trust Challenge Finals.

PVPower, Chicago, is developing web-based solutions to improve the functionality of the residential solar market. "The market for residential solar isn't working" stated PVPower's President, Dan Kuthy. "The math and science behind solar are well-established, but residential adoption of the product is lagging." PVPower has a business-to-business solar equipment sales website and plans to roll out "SolarBear," a web-based platform that makes it simple for solar installers to design, sell and source their solar power projects. The site will also make is easier for home and business owners to understand and adopt solar power.

SunPhocus, Chicago, has developed a holographic concentrating film called HoloSun™ for building integrated photovoltaic (BIPV) application. BIPV products are multifunctional materials that perform the traditional function of building products while simultaneously generating electricity. HoloSun™ is a thin holographic coating that can be applied to glass surfaces and works as a solar concentrator. HoloSun™ can be used in windows, skylights, and glass curtain walls to collect solar radiation for electricity generation. The holographic material is transparent, which means it does not impact the ability to see through the window.

SunPhocus has three employees and is currently in the process of fundraising and developing its prototype for HoloSun™.



Solar Xorce, Northbrook, designs, integrates, and will manufacture Concentrating Solar Thermal Power receivers and critical system components for industrial and commercial clients. Their products can operate at very high temperatures and can cut the cost of installed systems by 50% while providing industrial process heat, hot air and water, and power for thermally-activated air conditioning and refrigeration.

Policy Makes the Difference

Federal and state policies are key to encouraging investment that can grow the wind power and solar energy industries, and thereby create more jobs and economic growth.

Federal Policies

Federal Renewable Electricity Standard: This proposed federal legislation would require all electric utilities, which act as collective power purchasing agents for consumers, to buy a growing percentage of their electricity from renewable energy resources. Creating a federal renewable electricity floor would drive more demand nationally and in Illinois for wind and solar generated electricity.

Production Tax Credit (PTC), Investment Tax Credit (ITC) & 1603 Tax Credit: The PTC offers a credit of 2.1 cents per kilowatt hour, which is effective through 2012. Wind developers have been able to take a 30% ITC in lieu of a PTC for facilities placed into service before 2012 as long as construction began before the end of 2010. Through the Section 1603 Treasury Grant Program, the ITC is convertible into a cash grant that helps developers who do not have enough tax liability to effectively utilize the tax credit. More than 11,000 megawatts of power were developed through the Section 1603 cash grant program as of June 2011.

Qualifying Advanced Energy Manufacturing Investment Tax Credit: Through ARRA, renewable energy manufacturers were able to take a 30% Federal Investment Tax Credit. The program expired in 2009 and should be considered for renewal.

Accelerated Depreciation: Allowing wind and solar generation assets to be depreciated over six years can create additional value. However, the depreciation credit may be hard for some developers to use unless they can offset it with significant income.

Residential Renewable Energy Tax Credit: Homeowners can receive a personal income tax credit for up to 30% of the cost of a solar thermal, photovoltaic or wind system installed on their primary residence. The credit expires in 2016 and is limited to $500 per 0.5 kilowatt of power capacity.

Illinois Policies

Illinois Renewable Electricity Standard: Illinois' electric utilities are required to purchase a percentage of their electricity from renewable energy sources. The percentage increases annually from 5% in 2010 to reach 25% by 2025. Of that total, 75% of the renewable energy must come from wind power. The solar "carve-out" in the legislation requires that by 2015, 6% of the total renewables purchased will be from solar power.

Sales Tax Incentive: A business establishing a new wind power facility in Illinois may be eligible for designation as a "High Impact Business," which exempts the wind equipment owner from paying state and local sales taxes for building materials.

State Bond Program: The Illinois Finance Authority can issue tax-exempt bonds and credit enhancements for renewable energy projects that meet eligibility criteria and provide significant public benefits for the citizens of Illinois.

Property Tax Consistency: The Illinois property tax code provides enhanced tax certainty for wind farms by keeping the property tax assessment of wind energy devices uniform in counties across the state. Previously, property tax assessments for wind farms varied widely across the state.

Proposed - Distributed Generation Carve-Out: Proposed state bill HB1943 would provide a clear path for distributed systems, like roof-top solar on a home or business, to participate in the state's Renewable Portfolio Standard. The legislation would provide that a minimum amount of the power procured by the Illinois Power Authority (IPA) comes from distributed renewable energy generation devices, ratcheting up to 1% by June 2015. It also states that half of the distributed generation energy comes from devices of less than 25 kilowatts in nameplate capacity, if available.

Proposed - Net Metering Legislation: Proposed state bill HB 1913 would increase the current 40kW net metering system size cap, allowing businesses to earn full retail credit for energy sent back to the grid. While Illinois' current net-metering law has helped generate some demand for residential and small business roof-top systems, a stronger standard would help make renewable energy generation more affordable for larger businesses and industrial customers. Sixteen other states have a 2MW or higher system size cap and 37 other states have a higher net metering system size cap than the one currently in Illinois.

Proposed - Economic development for supply chain and solar businesses: As Illinois improves its policies and programs aimed at increasing demand for distributed renewable energy generation, businesses in the state will have an opportunity to expand to meet that demand. However, without targeted supply chain and local business development it is possible that some of the higher demand could be met by businesses in neighboring states. State-sponsored programs could help ensure that Illinois benefits directly from the likely increased economic development and jobs that result from further renewable energy development in the state.

Environmental Law & Policy Center

The Environmental Law & Policy Center is the Midwest's leading public interest environmental legal advocacy and eco-business innovation organization. We develop and lead successful strategic advocacy campaigns to improve environmental quality and protect our natural resources. We are public interest environmental entrepreneurs who engage in creative business dealmaking with diverse interests to put into practice our belief that environmental progress and economic development can be achieved together. ELPC's multidisciplinary staff of talented and experienced public interest attorneys, environmental business specialists, public policy advocates and communications specialists brings a strong and effective combination of skills to solve environmental problems.

ELPC's vision embraces both smart, persuasive advocacy and sustainable development principles to win the most important environmental cases and create positive solutions to protect the environment. ELPC's teamwork approach uses legal, economic and public policy analysis, and communications advocacy tools to produce successes. ELPC's strategic advocacy and business dealmaking involves proposing solutions when we oppose threats to the Midwest environment. We say "yes" to better solutions; we don't just say "no."

ELPC was founded in 1993 and has achieved a strong track record of successes on national and regional clean energy development and pollution reduction, transportation and land use reform, and natural resources protection issues. ELPC's creative public advocacy effectively links environmental progress and economic development together and improves the quality of life in our Midwestern communities.

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