The Wind Coalition

Kansas Wind Energy

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SENATE UTILITIES COMMITTEE

JANUARY 2016

Policy Stability Key to Future

Experience confirms that policy stability is critical to the growth and overall success of any industry – wind energy included

- Federal
  - PTC Phased out by 2019
    - Gradual 20% annual reductions in PTC value
    - PTC helped quadruple America's installed wind power from 16,702 MW in 2008 to 69,470 MW by the third quarter of 2015 … enough power to supply over 18 million American homes.
- Kansas
  - RPS
  - Excise Tax
  - Siting
  - Transmission

Kansas' opportunity to supply the US with power and the Americas perhaps the world with component parts

Policy Stability Key to Future

TP&L (Transportation Partners and Logistics) yard on Jennie Barker Road and U.S. Highway 50 in Garden City, TP&L is an off-loading and distribution site for wind generation components that operates a section of rail near its yard that ships wind generation components.

“We have 3,000 pieces sitting on the ground right now, and that’s the highest we’ve ever had,” said Billy Brenton, vice president and co-owner of TP&L. “We probably put 15,000 pieces through our yard last year.”

“We’re in the center of the U.S. from the plants, so it makes sense for them to ship the parts here, and then we can provide what they call last-mile trucking,” Brenton said.

All of the parts that make up the giant windmills — blades, hubs, the machine heads that turns the rotors, and tower pieces — are delivered from the site via trucks to wind farms under construction in Kansas, Colorado, Nebraska and as far away as Wisconsin.

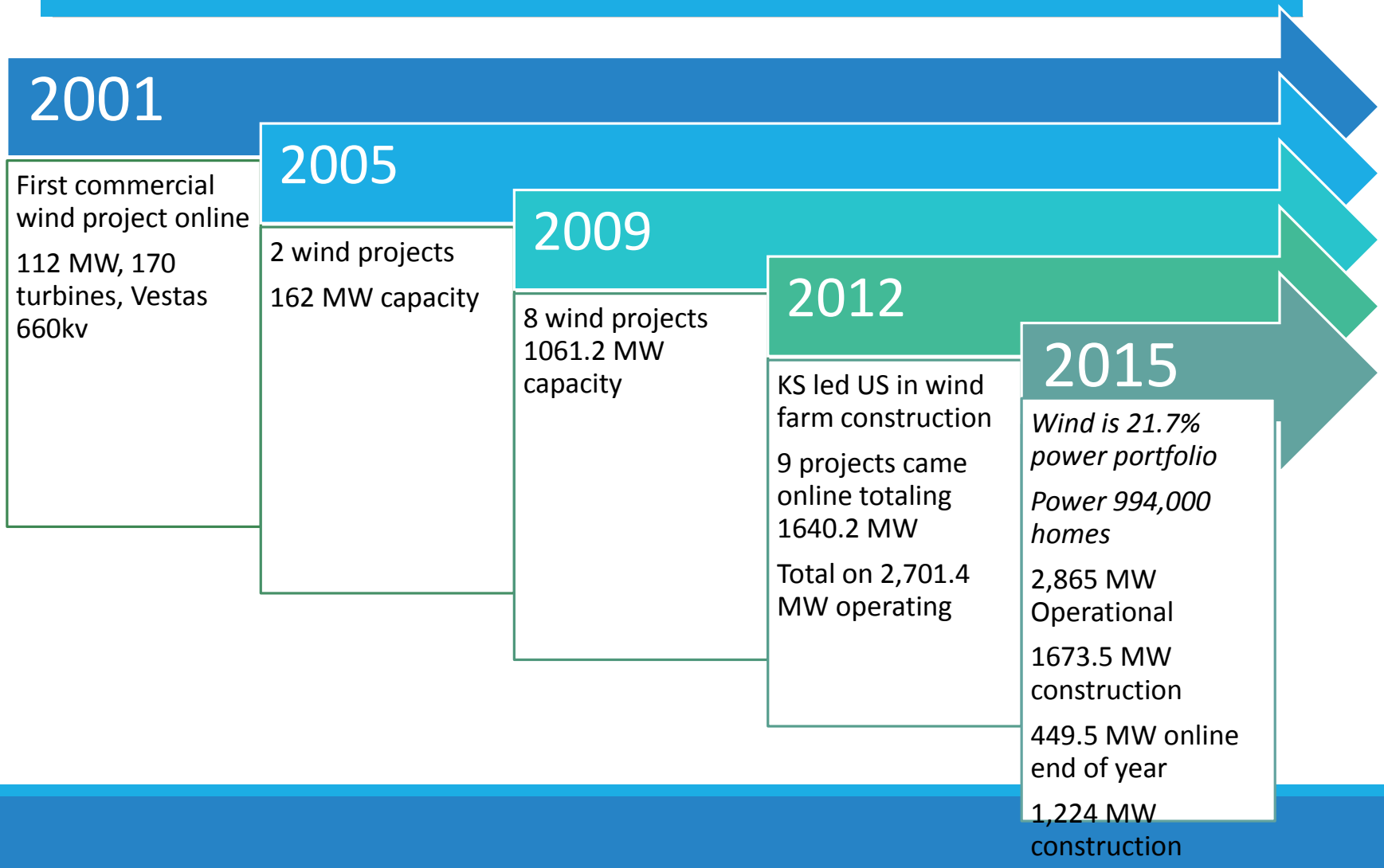
The pieces currently being stored at the TP&L yard are destined to four wind projects under construction.

With the recent passage of the federal production tax credit extension through Dec. 31, 2019, Brenton doesn’t expect business to slow down any time soon.

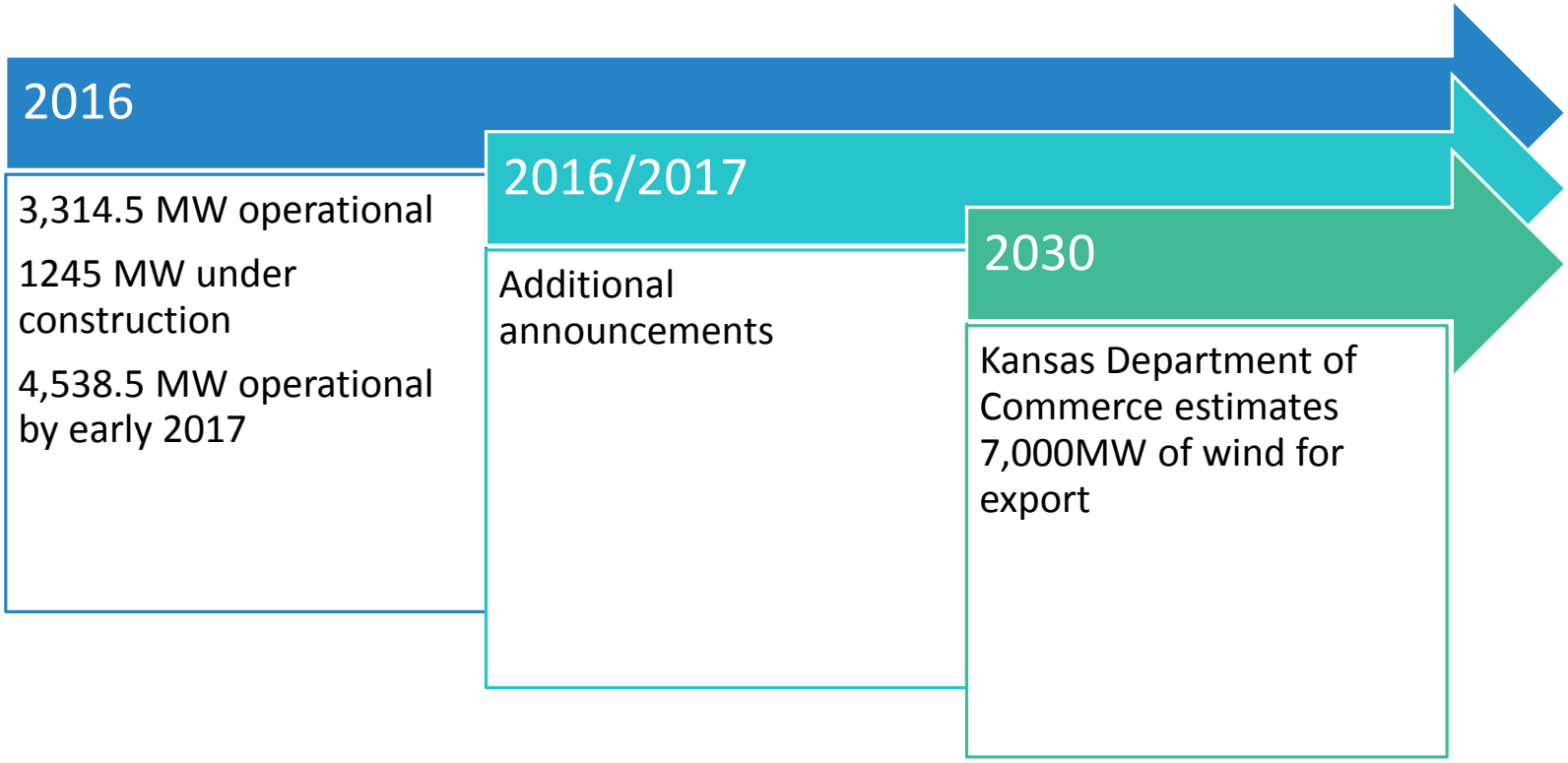
“Passing that tax just secured business for us in Garden City for the next seven years.”

- Garden City Telegram January 10, 2016

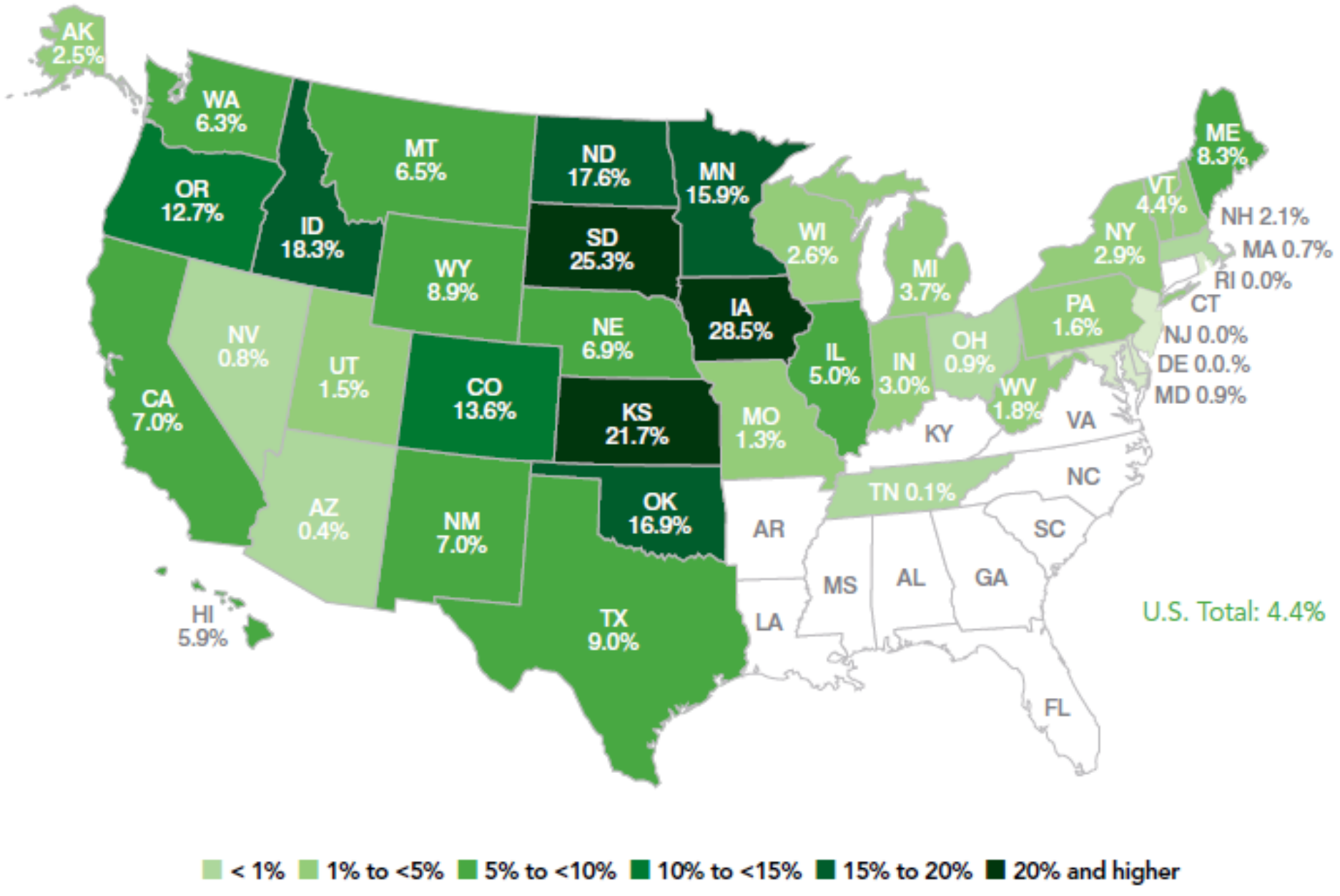
Kansas Wind: Vision For the Future



Kansas Wind: Vision for the Future

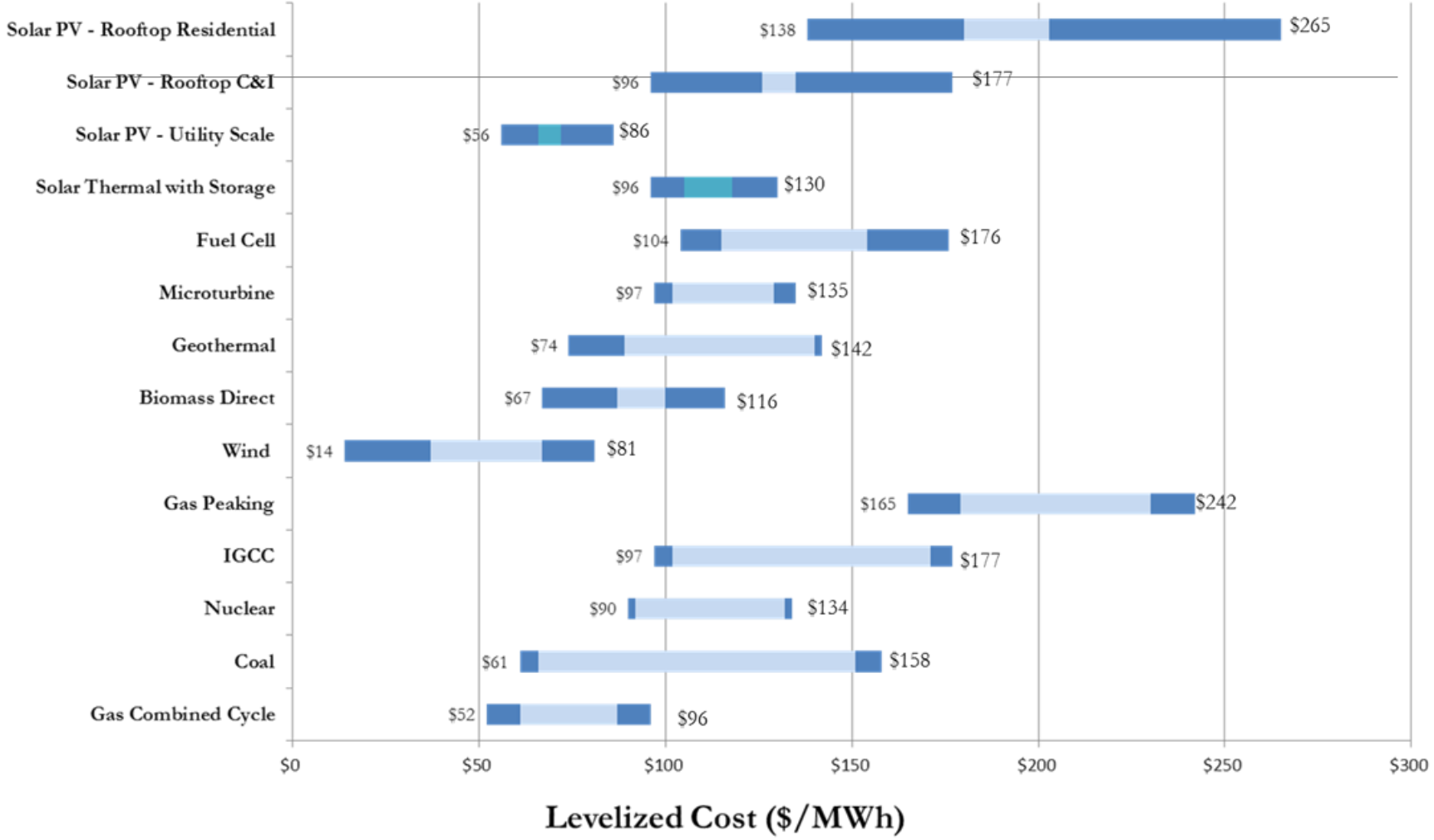


U.S. Wind Energy Share of Electricity Generation, by State



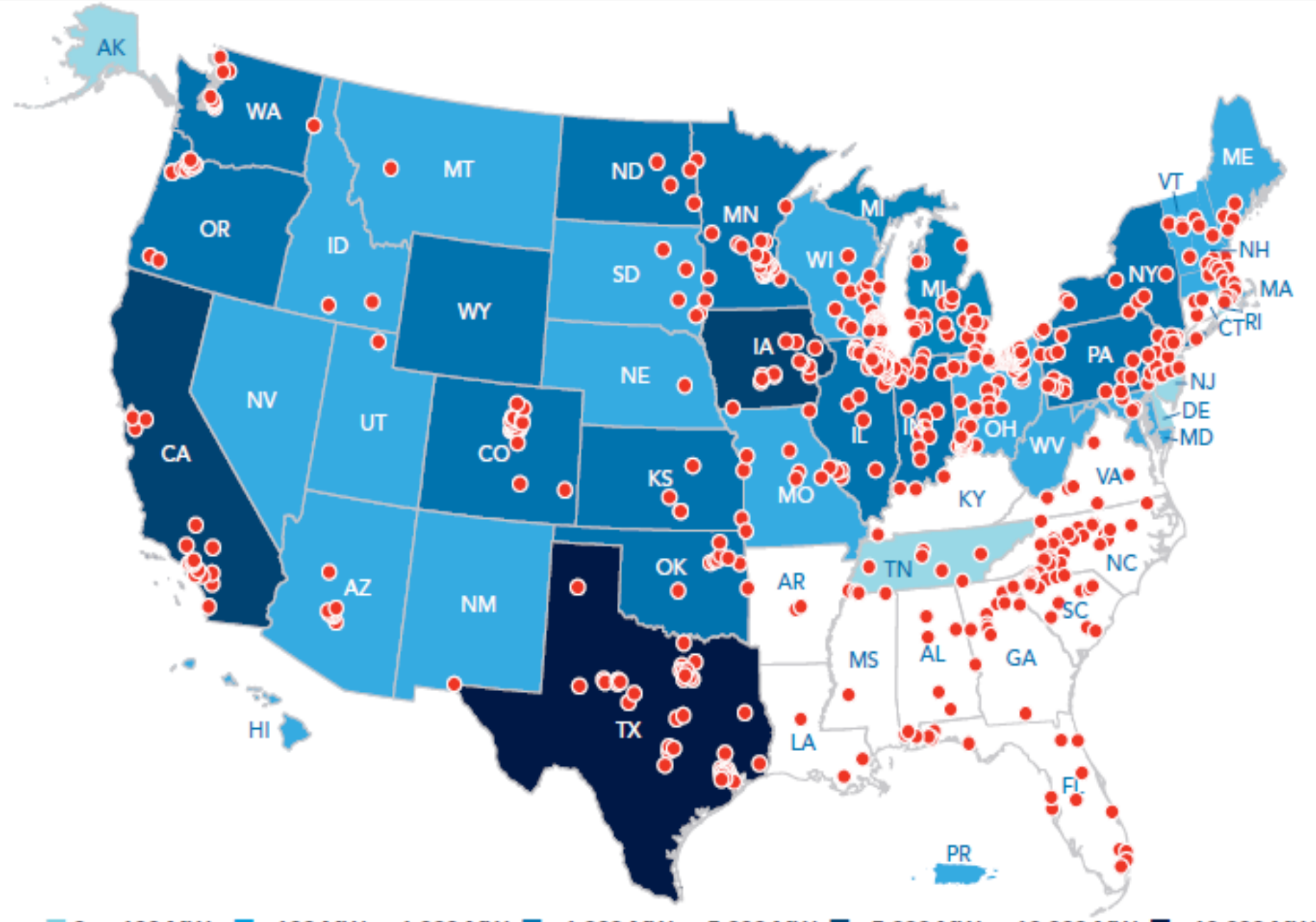
Comparative cost of generating technologies, fuel price risk

Comparison below show the range of renewable energy costs with and without federal production or investment tax incentives compared to generating technologies that have fuel price risk.

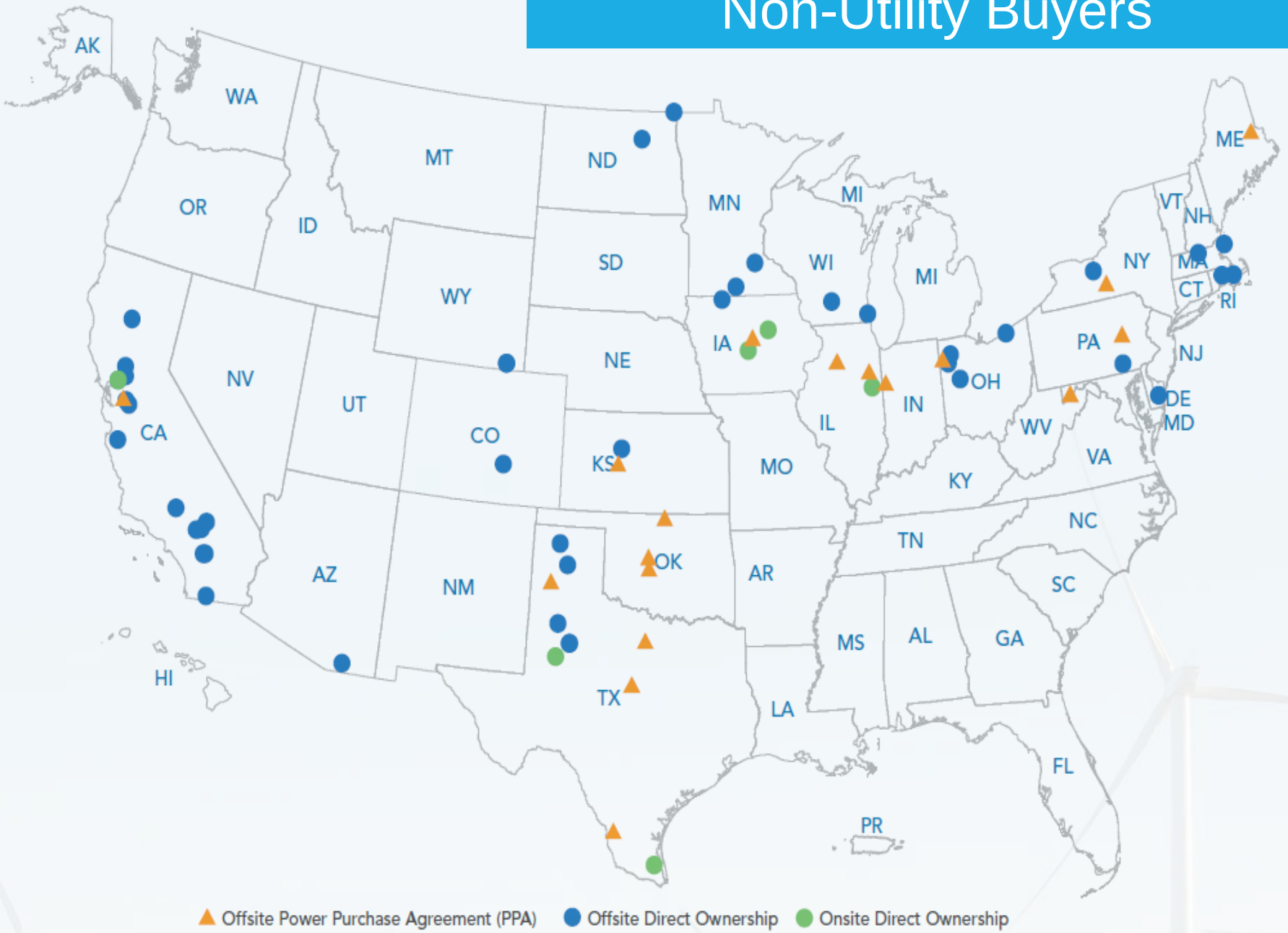


Source: AWEA combination of data from multiple charts in Lazard's Levelized Cost of Energy Analysis – Version 8.0, available at:
http://www.lazard.com/pdf/levelized%20cost%20of%20energy%20-%20version%208.0.pdf

Active Wind-related Manufacturing Facilities at end of 2014



Non-Utility Buyers



CORPORATE RENEWABLE ENERGY BUYERS' PRINCIPLES:
INCREASING ACCESS TO RENEWABLE ENERGY

Source:
http://www.wri.org/sites/default/files/corporate_renewable_energy_buyers_principles_1.pdf

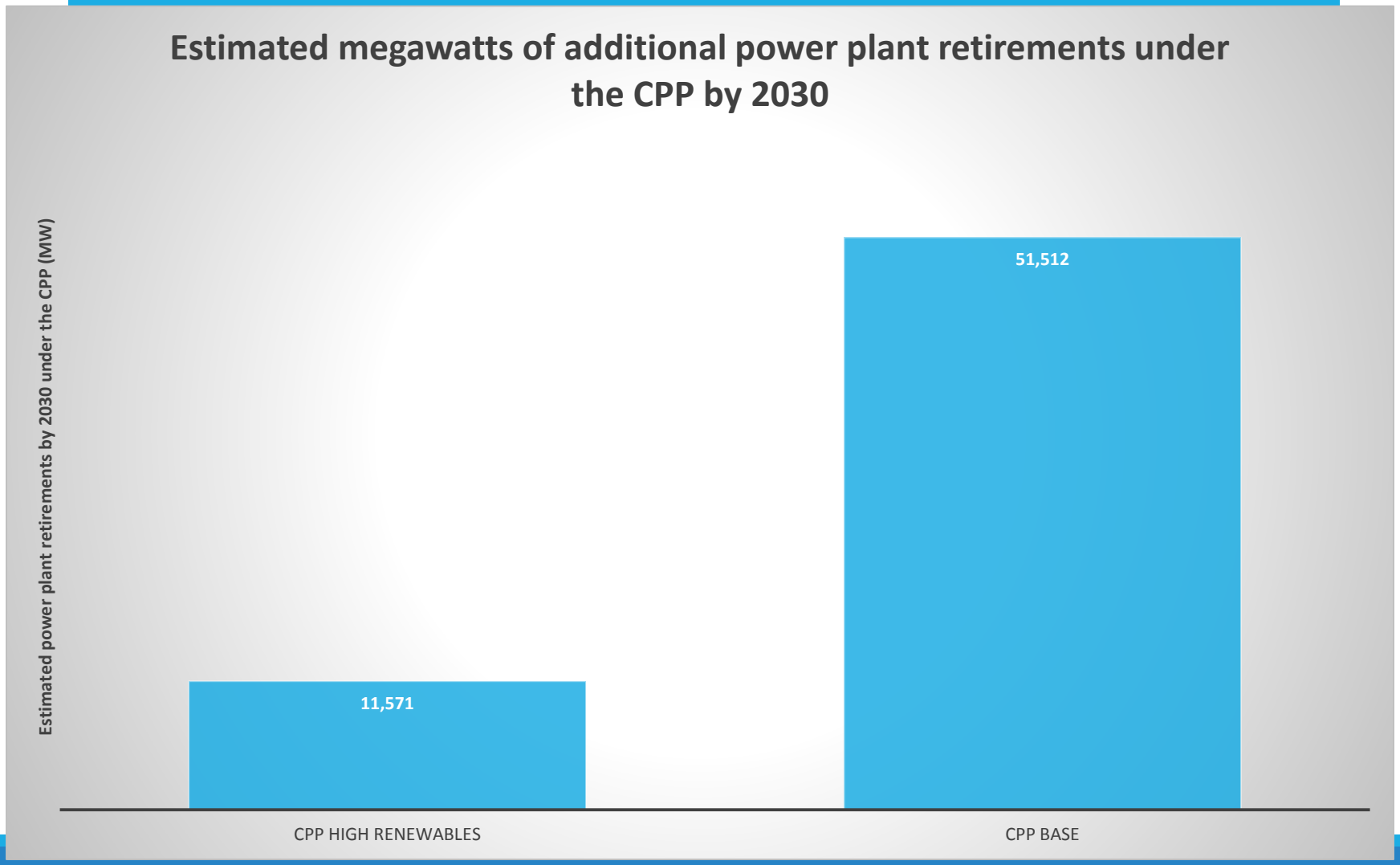
Clean Power Plan

Wind plays a key role in CPP compliance because:

1. Widely-available
2. Economic
3. Fixed price contracts – last decades
4. Fuel is free
5. Diversify utility's energy mix
6. Creates jobs / boosts state and local economies

Modeling demonstrates: Economic analyses and real-world examples demonstrate that when wind energy is generated, overall electric rates drop and consumers benefit.

Clean Power Plan



Operating Kansas Wind Projects

Prepared by The Wind Coalition

Project Name	County	Developer	Size (MW)	Power Offtaker	Turbine Type (MW)	Installed Turbines	In-Service Year
Gray County	Gray	NextEra Energy Resources LLC	112	MKEC KCP&L	Vestas 660kW	170	2001
Elk River	Butler	Iberdola	150	Empire	GE 1.5	100	2005
Spearville Spearville II	Ford	enXco	100.4 48	KCP&L	GE 1.5	67 48	2006 2010
Smoky Hills Phase I	Lincoln/ Ellsworth	TradeWind Energy	100.8	Sunflower – 50 KCBPU- 25 Midwest Energy – 24	Vestas 1.8	56	2008
Smoky Hills Phase II	Lincoln/ Ellsworth	TradeWind Energy	150	Sunflower – 24 Midwest – 24 IP&L – 15 Springfield -50	GE 1.5	99	2008
Meridian Way	Cloud	EDP Renewables	201	Empire – 105 Westar - 96	Vestas 3.0	67	2008
Flat Ridge	Barber	BP Wind Energy	100	Westar	Clipper 2.5	40	2009
Central Plains	Wichita	RES Americas	99	Westar	Vestas 3.0	33	2009
Greensburg	Kiowa	John Deere/ Exelon	12.5	Kansas Power Pool	Suzlon 1.2	10	2010
Caney River	Elk	TradeWind Energy	200	Tennessee Valley Authority (TVA)	Vestas 1.8	111	2011

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Post Rock	Ellsworth Lincoln	Wind Capital Group Pattern	201	Westar	GE 1.5MW	134	2012
Ironwood	Ford Hodgeman	Infinity Duke Energy/ Sumitomo Corp. of America	168	Westar	Siemens 2.3MW	73	2012
Cimarron I	Gray	Competitive Power Venture (CPV) NextEra Energy Resources LLC	165	Tennessee Valley Authority (TVA)	Siemens 2.3MW	72	2012
Cimarron II	Gray	CPV Duke Energy/ Sumitomo	131	KCP&L	Siemens 2.3MW	57	2012
Shooting Star	Kiowa	Infinity	105	Mid-Kansas Electric Coop	GE 1.6MW	65	2012
Flat Ridge 2	Barber, Kingman, Harper & Sumner	BP Wind Energy	470.4	AECI – 310.4 Arkansas Electric - 51.2 SWEPCO -108.8	GE 1.6MW	294	2012
Spearville 3	Ford	EDF Renewable Energy	100.8	KCP&L	GE 1.6MW	63	2012
Ensign	Gray	NextEra Energy Resources LLC	99	KCP&L	Siemens 2.3M	43	2012
Buffalo Dunes	Finney, Grant, Haskell	TradeWind Energy	250	Alabama Power	GE 1.8 MW	135	2013

Wind Projects Operating Or Under Construction in Kansas

Prepared by The Wind Coalition

Project Name	County	Developer	Size (MWs)	Power Offtaker	Turbine Type (MW)	Installed Turbines	In-Service
Marshall Wind	Marshall	RPM Access Wind Development	74	MJMEUC KPP KMEA	Vestas V110-2.0 MW	36	2015
Buckeye Wind	Ellis	Invenergy	200	Lincoln Electric System & SPP	GE 1.79MW	111	2015
Western Plains	Ellis	Infinity	400	Westar (250)	Siemens	TBD	2016
Alexander Wind	Rush	NJR Clean Energy Ventures	49.5	KCBPU & Yahoo!	Siemens 2.3 MW	21	2015
Waverly Wind	Coffey	EDP Renewables	200	KCP&L	Gamesa 2.0 MW	95	2016
Slate Creek Wind	Sumner	EDF Renewable Energy	150	Great Plains Energy	Vestas 2.0 MW	75	2015
Cedar Bluff Wind	Ness & Trego	NextEra Energy Resources LLC	200	Westar	GE 1.79 MW	111	2015
Ninnescah	Pratt	NextEra Energy Resources LLC	200	Westar	GE 2.0 MW	100	2016
Kingman County Wind	Kingman	NextEra Energy Resources LLC	200	Westar	GE 1.79 MW GE 1.715 MW	120	2016

Questions?