

American Wind Energy Association

U.S. Wind Industry Third Quarter 2016 Market Report

A product of AWEA Data Services

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The U.S. wind industry installed 895 megawatts (MW) during the third quarter of 2016, bringing year-to-date installations to 1,725 MW. The U.S. now has an installed capacity of 75,716 MW.

Project developers reported over 20,000 MW of wind capacity under construction or in advanced development, with more than 3,700 MW of new announcements made during the third quarter. There are now 13,563 MW under construction and 6,717 MW in advanced development.

Nearly 3,200 MW of power purchase agreements (PPA) have been signed since the beginning of 2016.

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Wind Power Projects Under Construction	Full Version Only
New Power Purchase Agreements	Full Version Only
New Project Acquisition Activity	Full Version Only
Electric Utility Requests for Proposals (RFPs)	Full Version Only

Key Takeaways

2016 Wind Project Installations

- The U.S. wind industry installed 895 MW of wind capacity during the third quarter of 2016, bringing year-to-date installations to 1,725 MW.
- The industry installed 390 wind turbines across seven states during the third quarter. Texas led the country with 620 MW of wind capacity installed, becoming the first state to surpass 18,000 MW of installed wind capacity.
- Wind projects were also commissioned in Minnesota (200 MW), Maine (43 MW), Rhode Island (12 MW), Oregon (10 MW), Massachusetts (8 MW), and Utah (2 MW).
- There are now 75,716 MW of installed wind capacity in the United States, with more than 49,000 wind turbines operating in 40 states, plus Guam and Puerto Rico.
- GE Renewable Energy and Vestas installed a combined 98% of the 895 MW commissioned during the third quarter.

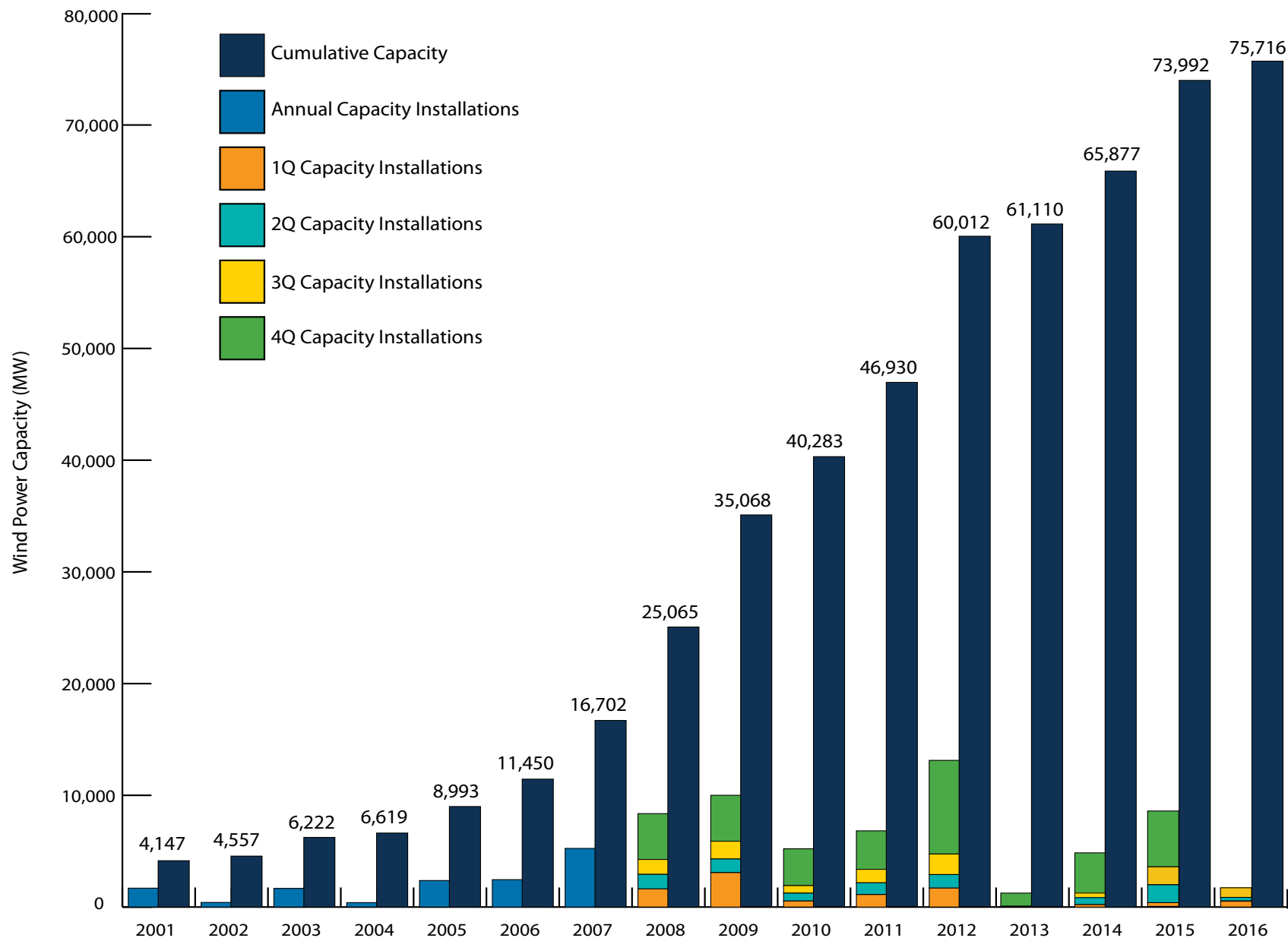
Wind Capacity Under Construction or in Advanced Development

- Project developers reported 13,563 MW under construction and 6,717 MW in advanced development, a combined 20,280 MW of wind capacity.
- Since the beginning of 2016, combined under construction and advanced development capacity has averaged 15% growth quarter over quarter.
- Project developers reported 2,501 MW in new construction announcements. Texas led the nation with 895 MW in new announcements.
- The industry also reported 1,216 MW in new advanced development announcements, including Alliant Energy's planned 500 MW Whispering Willow expansion in Iowa.

Strong Power Purchaser Activity

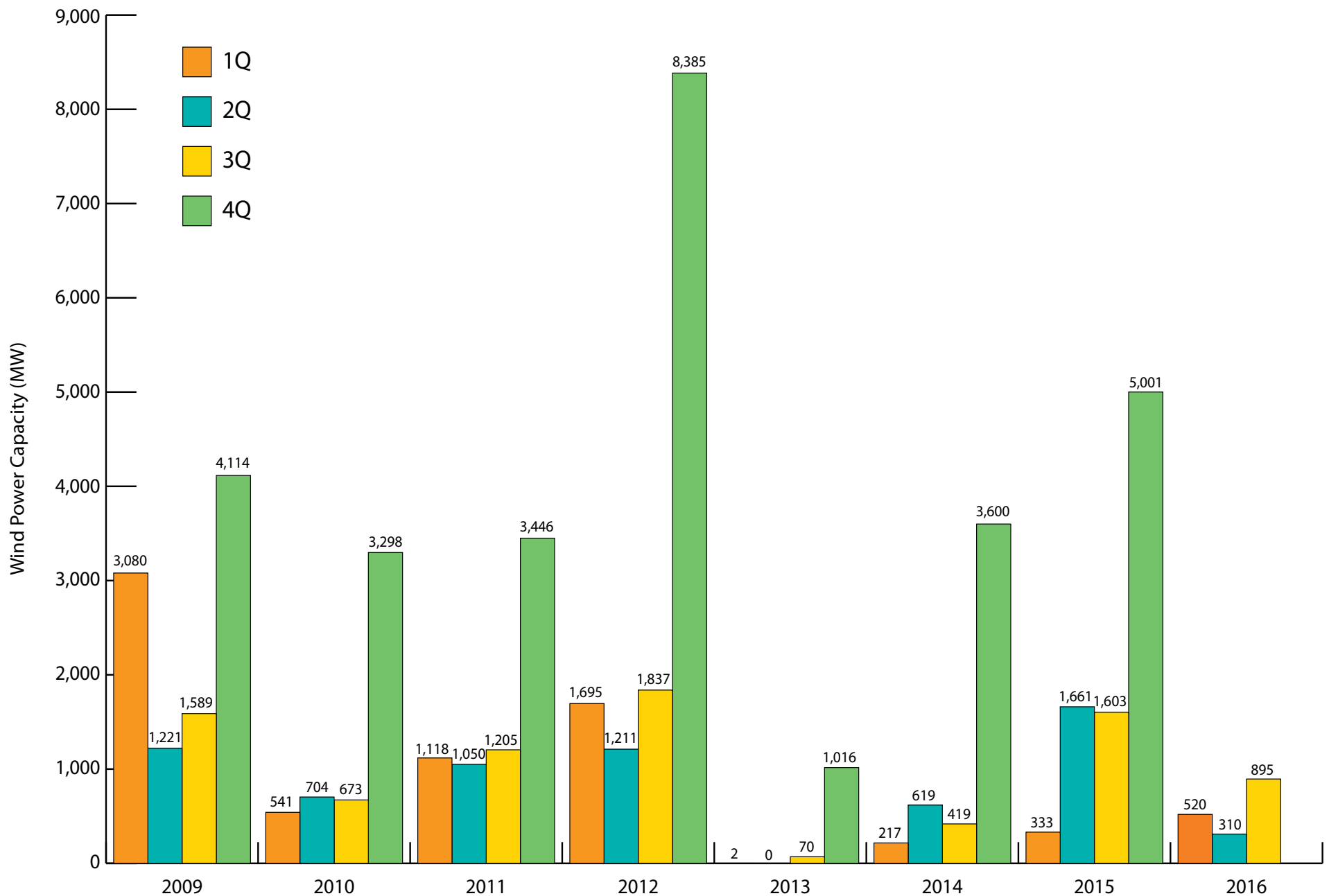
- Project developers signed 729 MW of PPAs during the third quarter, including 458 MW signed by corporate and other emerging customers of wind. For the year, non-utility purchasers represent 33% of total project capacity contracted.
- The 3,193 MW in year-to-date signed PPAs represent a 39% increase in activity compared to the same time period last year.
- 20 electric utilities released wind-eligible requests for proposals (RFPs) year-to-date, with nine RFPs released specifically for wind energy capacity. Three open RFPs are currently seeking up to 1,800 MW of wind capacity.

U.S. Annual and Cumulative Wind Power Capacity Growth

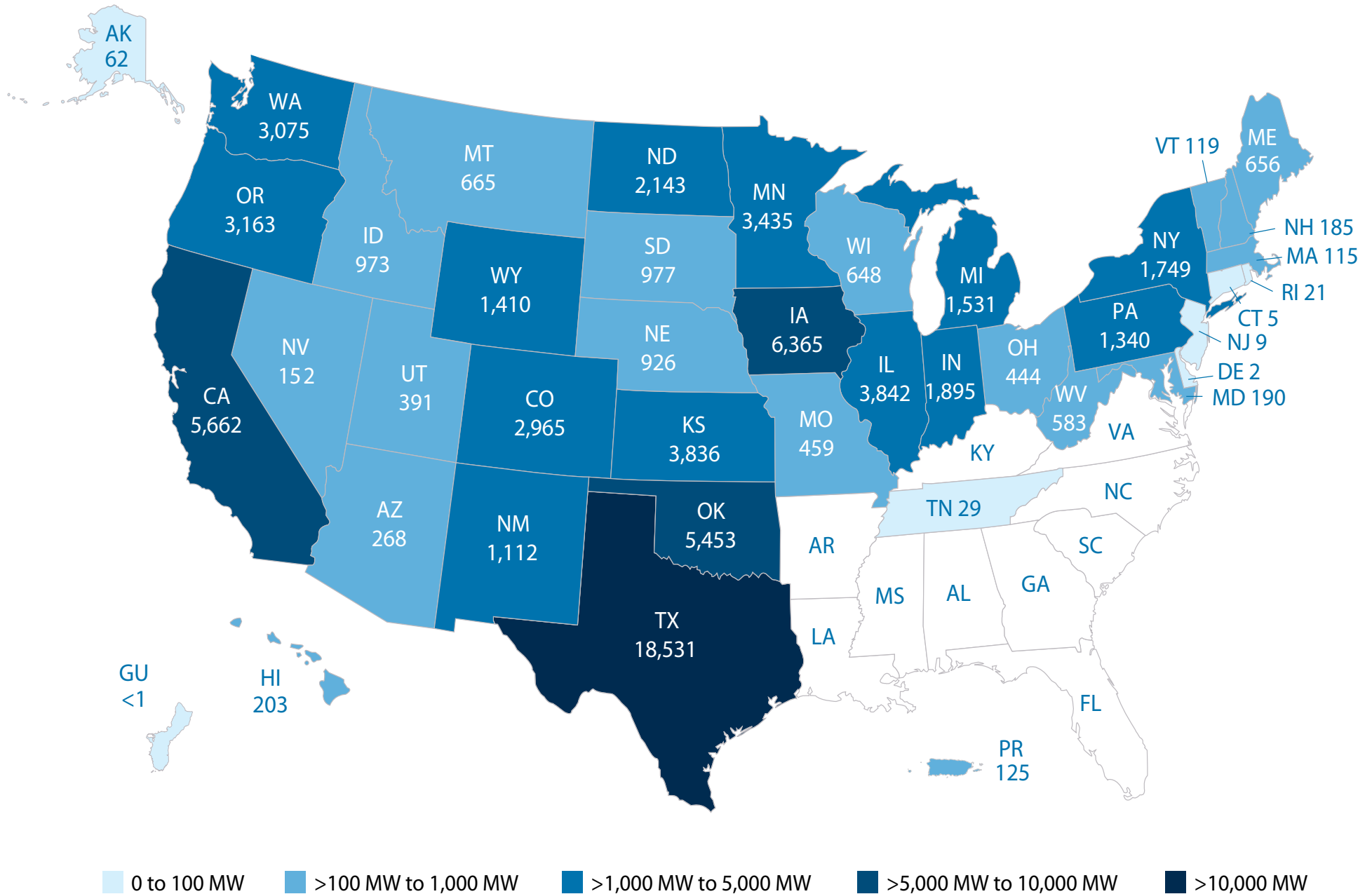


Note: Utility-scale wind capacity includes installations of wind turbines larger than 100-kW for the purpose of the AWEA U.S. Wind Industry Quarterly Market Reports. Annual capacity additions and cumulative capacity may not always add up due to decommissioned, uprated and repowered wind turbines. Wind capacity data for each year is continuously updated as information changes.

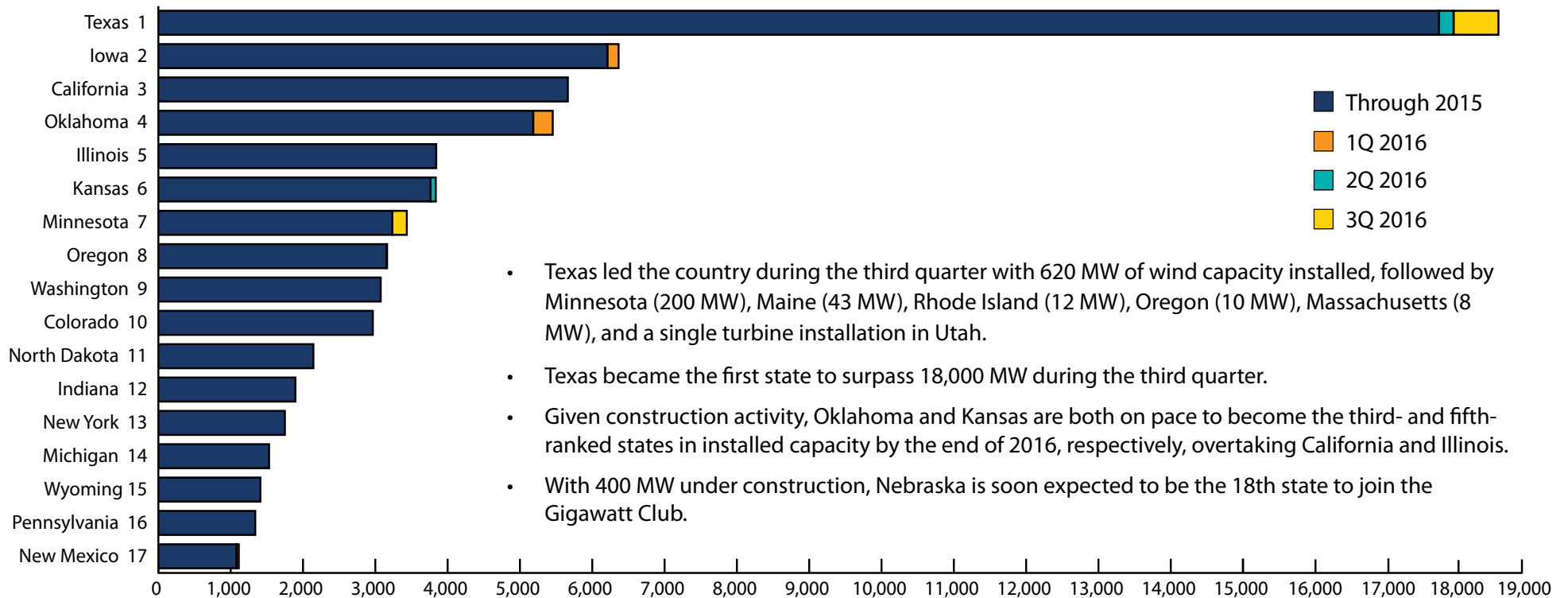
U.S. Wind Power Capacity Installations, by Quarter



U.S. Installed Wind Power Capacity, by State



U.S. Installed Wind Power Capacity, Top States

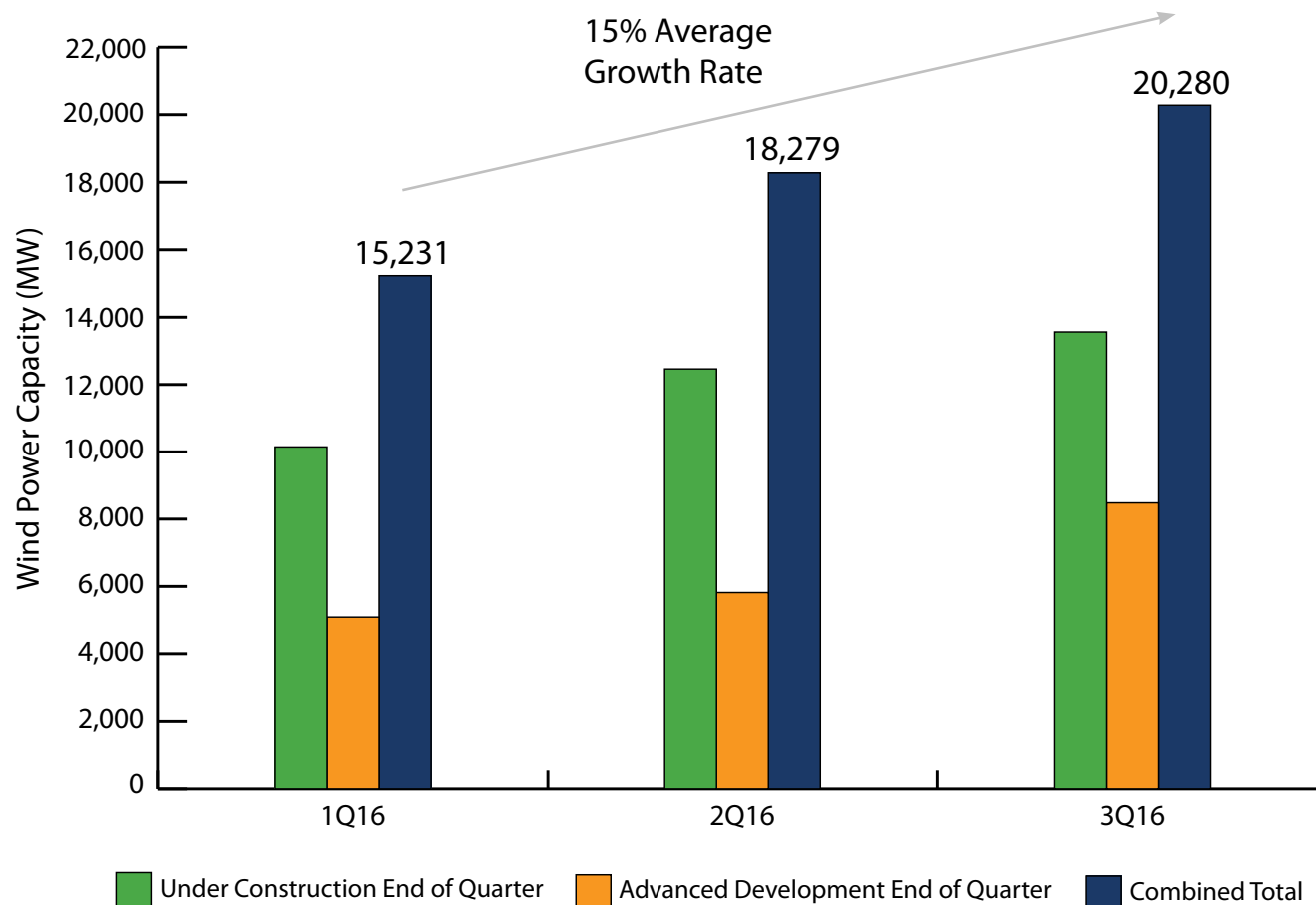


Top Five States with Wind Power Capacity Additions (MW) during 2016

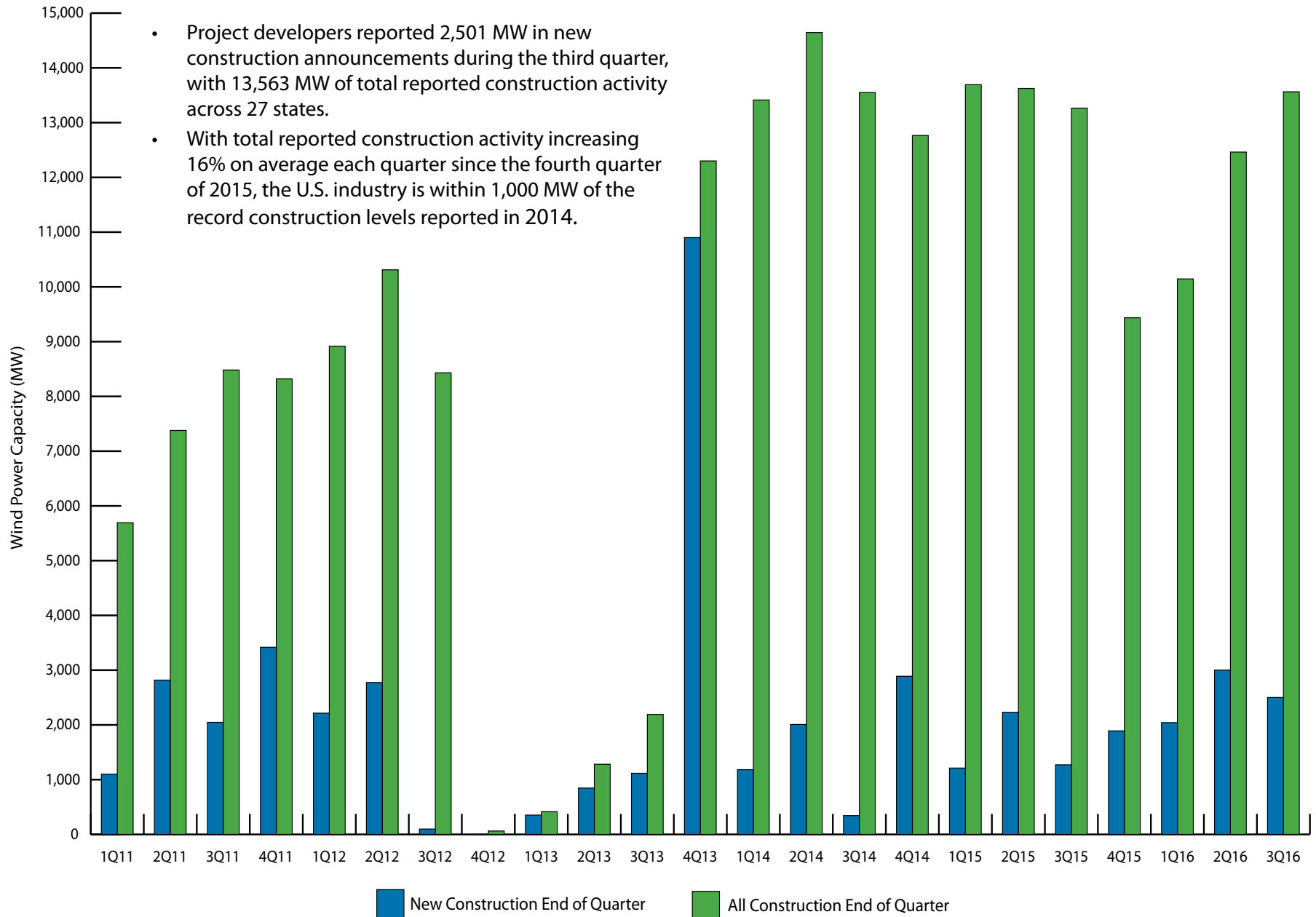
State	3Q 2016	2016 Total
Texas	620	821
Oklahoma	0	270
Minnesota	200	200
Iowa	0	156
Kansas	0	72

Wind Power Capacity Under Construction or in Advanced Development

- Project developers reported a combined 20,280 MW of wind power capacity in two development stages during the third quarter, with 13,563 MW reported under construction and 6,717 MW reported in advanced development.
- Since AWEA began tracking advanced development activity in the first quarter of 2016, combined under construction and advanced development capacity has averaged 15% growth quarter over quarter.
- The combined 20,280 MW of wind power capacity is spread across 147 wind projects in 32 states. Projects in these two categories can be reasonably expected to be completed in the near term.

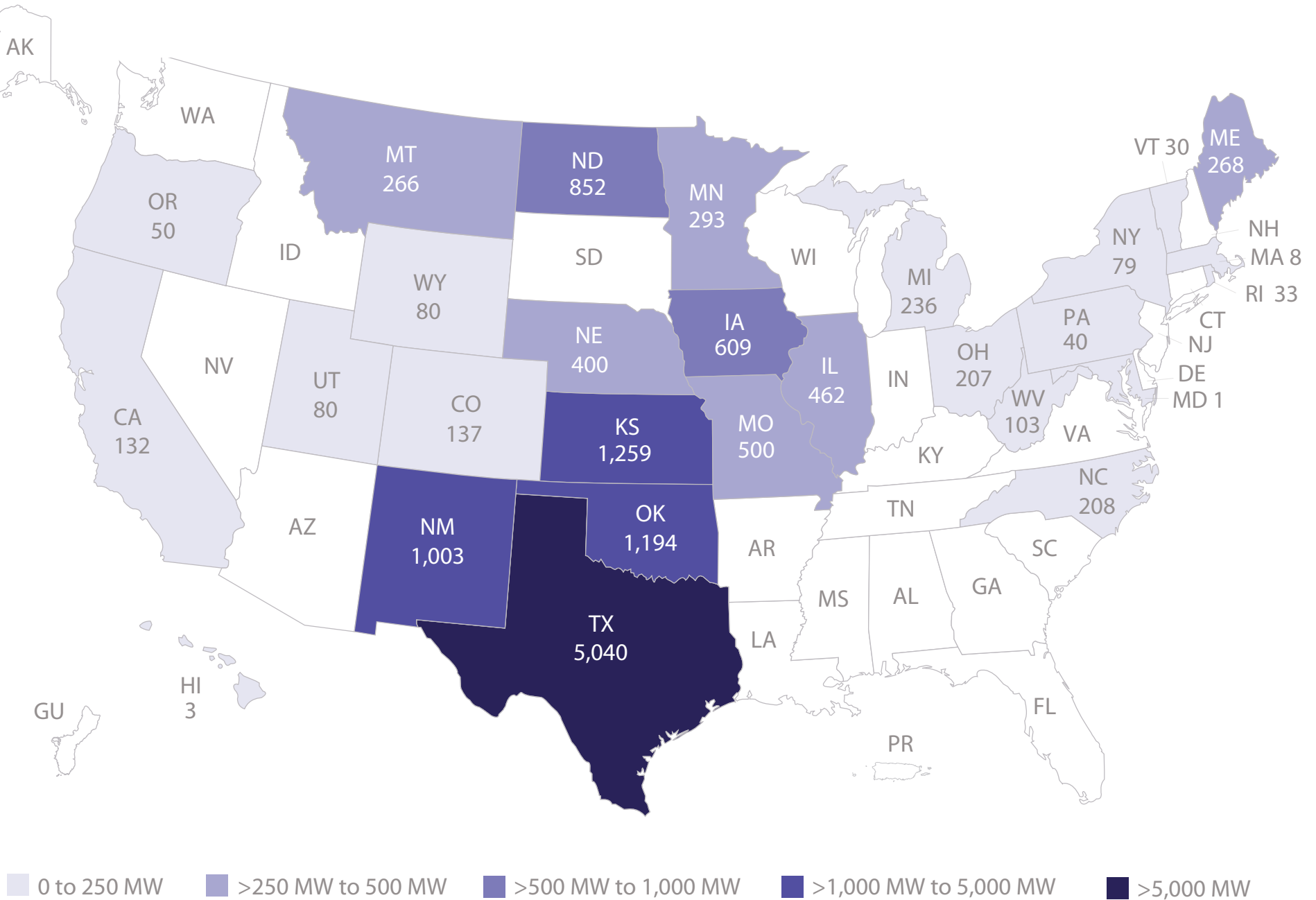


Wind Power Capacity Under Construction



Note: Projects reported as under construction are presumed to have taken steps to qualify for the PTC through safe harbor or physical construction.

Map of Wind Power Capacity Under Construction



Utility-Scale Wind Projects Completed during 2016

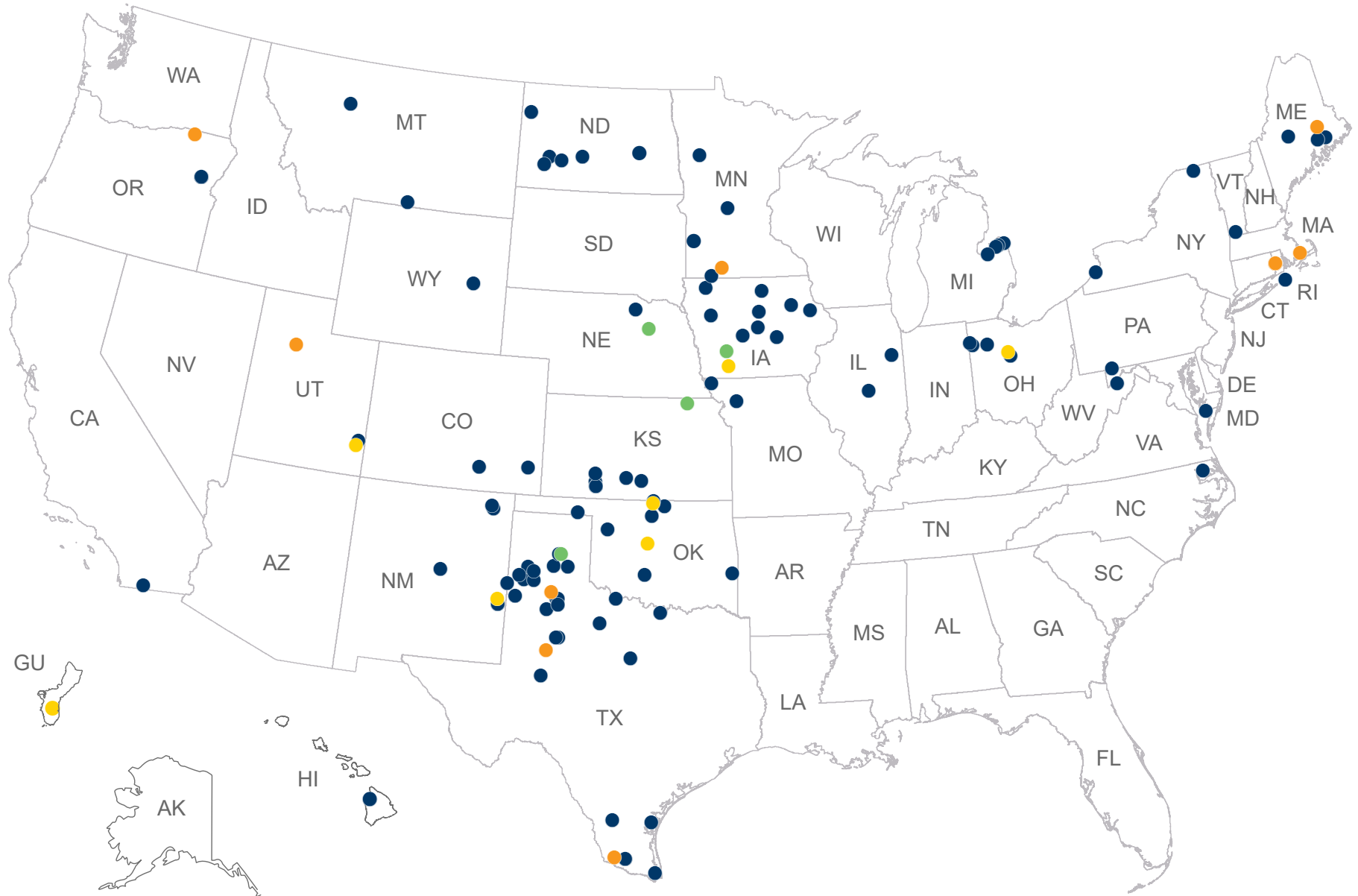
State	Project Name	Project Capacity (MW)	Turbine OEM	Turbine Model	Project Developer	Project Owner	Power Purchaser
First Quarter 2016							
GU	Guam Power Authority Wind Turbine	0.28	Vergnet	GEV MP-C	Guam Power Authority	Guam Power Authority	Guam Power Authority
IA	Adams	154.30	Siemens	SWT-2.3-108	MidAmerican Energy	MidAmerican Energy	MidAmerican Energy
NM	Milo	31.65 (of 49.50)	Vestas	V100-2.0	EDF Renewable Energy; Infinity Wind Power	EDF Renewable Energy; BlackRock	Merchant (SPP)
OH	Harpster Wind	1.50	Goldwind	GW87/1500	One Energy LLC	One Energy LLC	AEP Ohio
OK	Grant Wind	151.80	Siemens	SWT-2.3-108	Apex Clean Energy	Southern Power	ETEC (50.6 MW); NTEC (50.6 MW); Western Farmers Electric Cooperative (50.6 MW)
OK	Kingfisher Wind	118.00 (of 298.00)	Vestas	V100-2.0	Apex Clean Energy	First Reserve	Merchant Hedge Contract
UT	Latigo	62.10	GE Renewable Energy	2.3-116	Sustainable Power Group	Sustainable Power Group	PacifiCorp
Second Quarter 2016							
TX	Colbeck's Corner	200.48	GE Renewable Energy	1.7-100	E.ON Climate & Renewables	E.ON Climate & Renewables	Undisclosed
IA	Green Energy Machine	1.79	GE Renewable Energy	1.7-100	Greenfield Wind Power LLC	Community	Central Iowa Power Cooperative
KS	Marshall Wind Energy	72.00	Vestas	V110-2.0	BHE Renewables; RPM Access Wind Development	BHE Renewables	City of Independence (20 MW); KMEA (7 MW); Kansas Power Pool (25 MW); MJMEUC (20 MW)
NE	Prairie Breeze III	36.00	GE Renewable Energy	1.7-100	Invenergy	Invenergy	City of Grand Island
Third Quarter 2016							
MA	Future Generation Wind	8.00	Gamesa	G97-2.0	ConEdison Solutions	ConEdison Solutions	City of New Bedford, Others
ME	Passadumkeag	42.90	Vestas	V112-3.3	Quantum Utility Generation	Southern Power	WMECO (38.46 MW); Merchant (4.44 MW)
MN	Odell	200.00	Vestas	V110-2.0	Geronimo Energy	Algonquin Power	Xcel Energy
OR	Chopin	9.90	GE Renewable Energy	1.7-103	BayWa r.e. Wind	BayWa r.e. Wind	PacifiCorp
RI	WED Coventry 2	4.50	VENSYS	VENSYS 82	Wind Energy Development LLC	Wind Energy Development LLC	Town of West Warwick

Utility-Scale Wind Projects Completed during 2016

State	Project Name	Project Capacity (MW)	Turbine OEM	Turbine Model	Project Developer	Project Owner	Power Purchaser
RI	WED Coventry 3	1.50	VENSYS	VENSYS 82	Wind Energy Development LLC	Wind Energy Development LLC	Narragansett Bay Commission
RI	WED Coventry 4	1.50	VENSYS	VENSYS 82	Wind Energy Development LLC	Wind Energy Development LLC	Narragansett Bay Commission
RI	WED Coventry 6	4.50	VENSYS	VENSYS 82	Wind Energy Development LLC	Wind Energy Development LLC	National Grid
TX	Gunsight	119.93	GE Renewable Energy	1.7-100	Invenergy	Invenergy	3M
TX	Los Vientos IV	200.00	Vestas	V110-2.0	Duke Energy	Duke Energy	Austin Energy
TX	South Plains II	300.30	Vestas	V117-3.3	Westerly Wind, Tri Global Energy	Novatus Energy	Hewlett-Packard Company (112 MW); Merchant Hedge Contract (188.3 MW)
UT	Tooele Army Depot II	1.79	GE Renewable Energy	1.7-103	U.S. Army Corps of Engineers	U.S. Army Corps of Engineers	U.S. Army

Map of Projects Online & Under Construction during 2016

● Projects Online 1Q 2016 ● Projects Online 2Q 2016 ● Projects Online 3Q 2016 ● Projects Under Construction

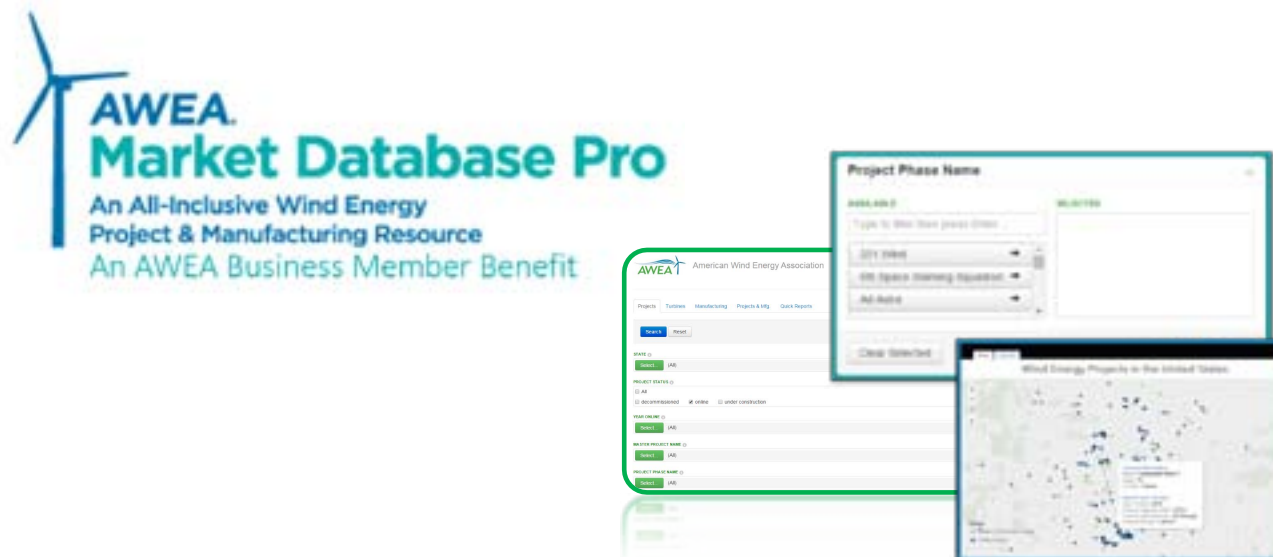


AWEA Industry Data & Analysis

For additional AWEA industry data & analysis, please visit www.awea.org/marketreports where you can download previous versions of the Quarterly Market Reports and the latest Annual Market Report.

The AWEA U.S. Wind Industry Third Quarter 2016 Market Report can be accessed at www.awea.org/3Q2016.

Access AWEA Market Database Pro at www.awea.org/database for a comprehensive database of all online, under construction, and advanced development wind projects, turbine-level data, and active wind-related manufacturing facilities.



For a spreadsheet with underlying data or with any corrections, please contact Hannah Hunt at hhunt@awea.org.

AWEA Industry Data & Analysis

New to Market Database Pro this Quarter!

AWEA continues to expand its data services with the Market Database Pro Interactive Web Map.

This interactive web map allows AWEA members to visually and geospatially explore the comprehensive data available in Market Database Pro on wind projects and wind-related manufacturing facilities across the U.S.

The new mapping tool also includes summary maps, boundaries for electricity regions, and political boundaries across individual states.

Members can now map the footprint of a wind turbine manufacturer, explore the wind projects of a particular owner, find the closest blade manufacturer to a project site, or highlight the projects in a particular Congressional District.

AWEA Members can access the Market Database Pro Interactive Web Map by clicking the “Interactive Map” icon on the home page of Market Database Pro.

