

# American Wind Energy Association

## U.S. Wind Industry Second Quarter 2017 Market Report

A product of AWEA Data Services

Released July 27, 2017

The U.S. wind industry reported 25,819 megawatts (MW) of wind capacity under construction or in advanced development as of the end of the second quarter of 2017, a 41% year-over-year increase.

Project developers installed 357 MW during the second quarter, bringing year-to-date installations to 2,357 MW. There are now 84,405 MW of installed wind capacity in the United States.

Power purchase agreements (PPA) representing 1,697 MW were signed during the second quarter, contributing to a total of 3,443 MW of PPAs announced in 2017. Six corporate purchasers signed wind PPAs for the first time.

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New Power Purchase Agreements	Full Version Only
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# Key Takeaways

## 2017 Wind Project Installations

- The U.S. wind industry installed 357 MW of wind capacity during the second quarter, bringing year-to-date installations to 2,357 MW.
- Four states commissioned a total of 143 turbines across six projects during the second quarter. Kansas led with 178 MW, followed by North Dakota (150 MW), Iowa (22 MW), and Nebraska (7 MW).
- Kansas became the fifth state in the U.S. to surpass 5,000 MW installed capacity.
- There are now 84,405 MW of installed wind capacity in the United States, with more than 52,000 wind turbines operating in 41 states plus Guam and Puerto Rico.
- GE Renewable Energy, the newly merged Siemens Gamesa Renewable Energy, and Vestas installed a combined 97% of the 2,357 MW commissioned during the first half of 2017.

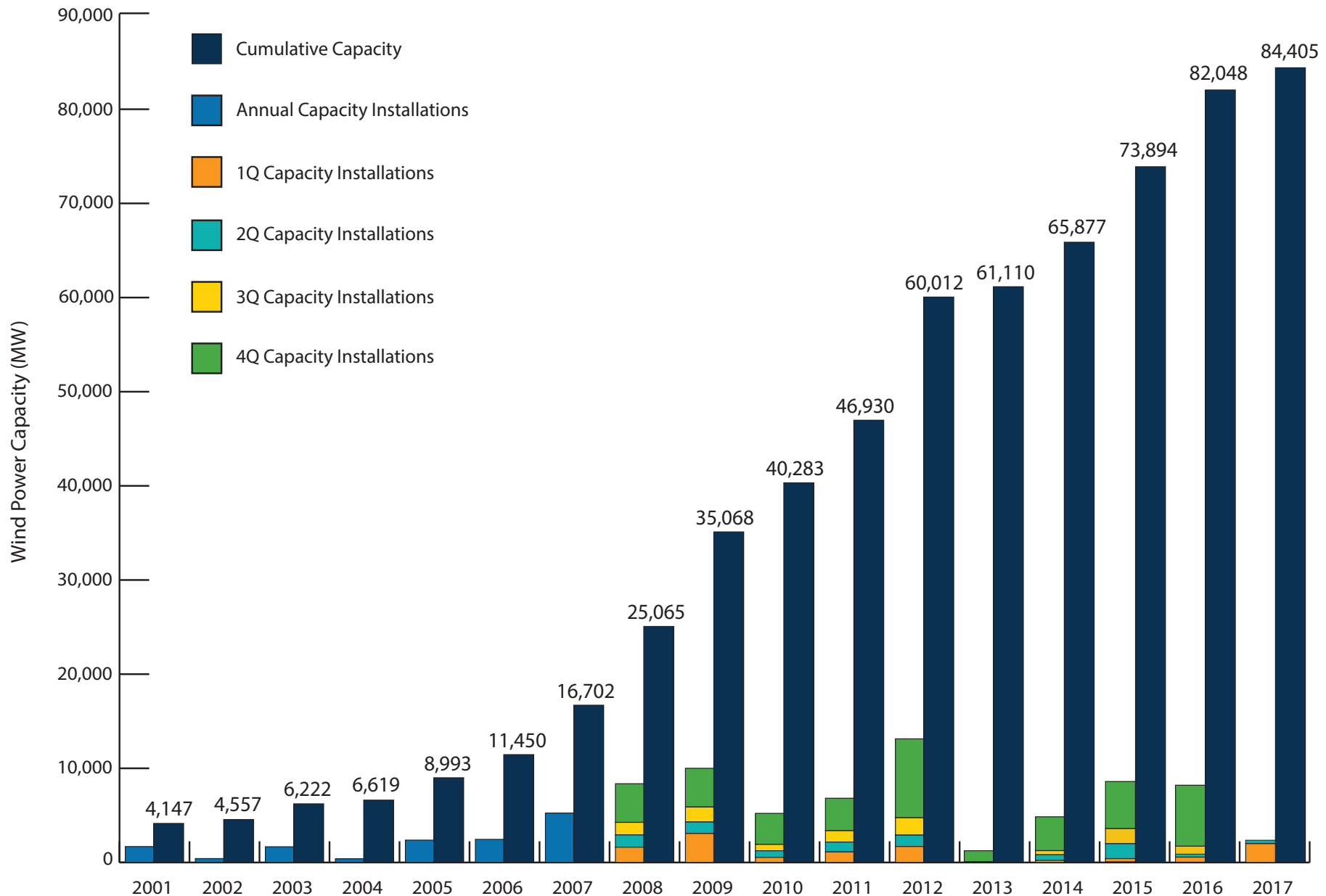
## Wind Capacity Under Construction or in Advanced Development

- There are now 14,004 MW under construction and 11,815 MW in advanced development, a combined 25,819 MW of wind capacity, a 41% year-over-year increase and the highest level since AWEA began tracking both categories at the beginning of 2016.
- Project developers announced 2,495 MW in new construction activity and 1,346 MW in new advanced development activity during the second quarter, a combined 3,841 MW.
- 30% of combined activity is located in the Midwest, with an additional 27% located in Texas, and 22% in the Mountain West.

## Wind Power Procurement Activity

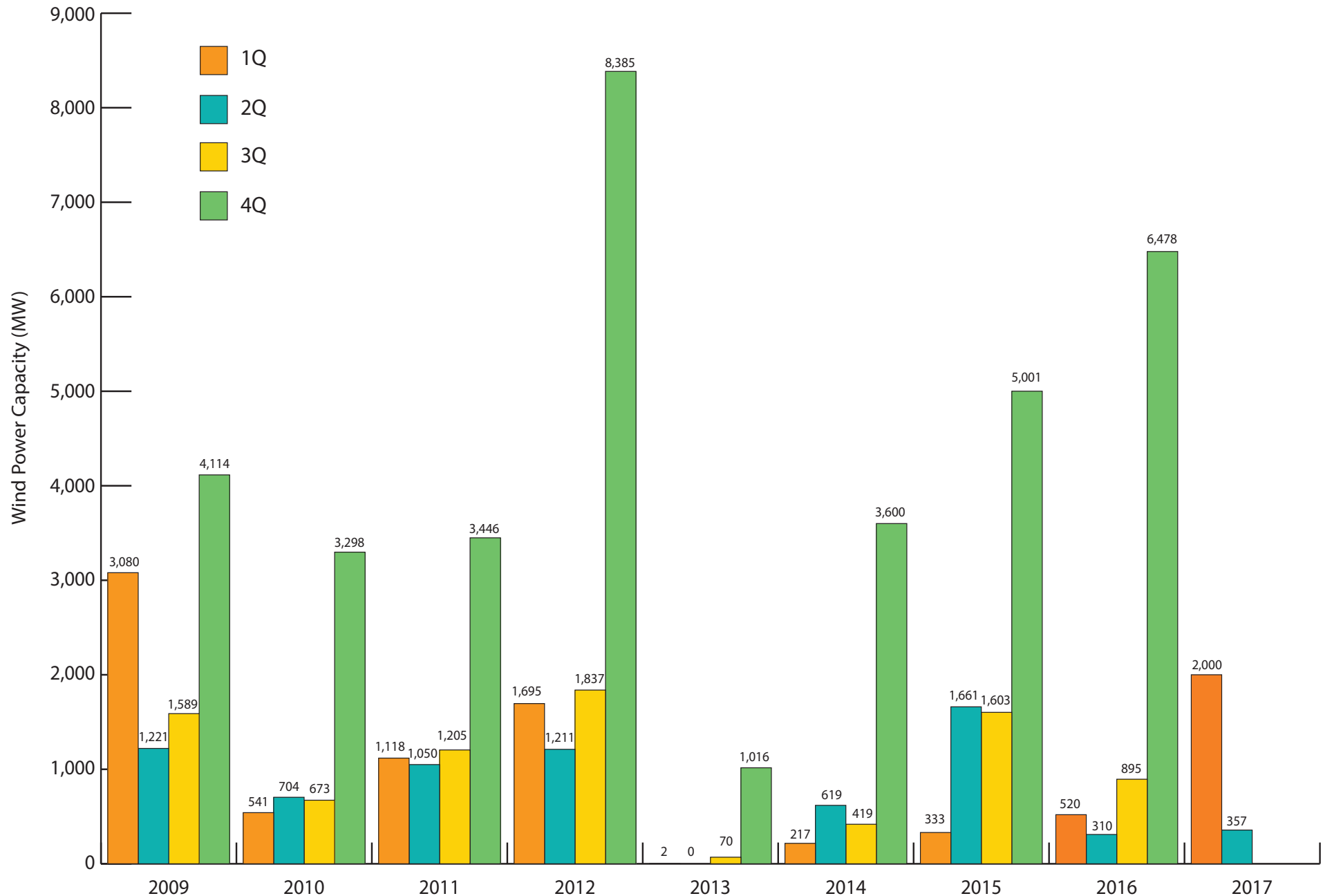
- Project developers signed 1,697 MW of PPAs during the second quarter, contributing to a total of 3,443 MW of PPAs signed during 2017. PPA volume for the year is outpacing each of the last four years.
- Corporate customers represent 37% of total project capacity contracted during the second quarter (632 MW). All six companies, including Akamai Technologies, Apple, General Mills, Goldman Sachs, Partners HealthCare, and T-Mobile, signed U.S. wind PPAs for the first time.
- The remaining 1,065 MW of PPAs include the Maryland Public Service Commission (PSC) offshore renewable energy credit (OREC) orders awarded to two planned offshore wind energy projects for 20-year terms.
- Six requests for proposals (RFP) were released during the second quarter for up to 1,450 MW of wind-eligible capacity, including the state of Massachusetts' request for a minimum of 400 MW (up to 800 MW) of offshore wind capacity.

# U.S. Annual and Cumulative Wind Power Capacity Growth

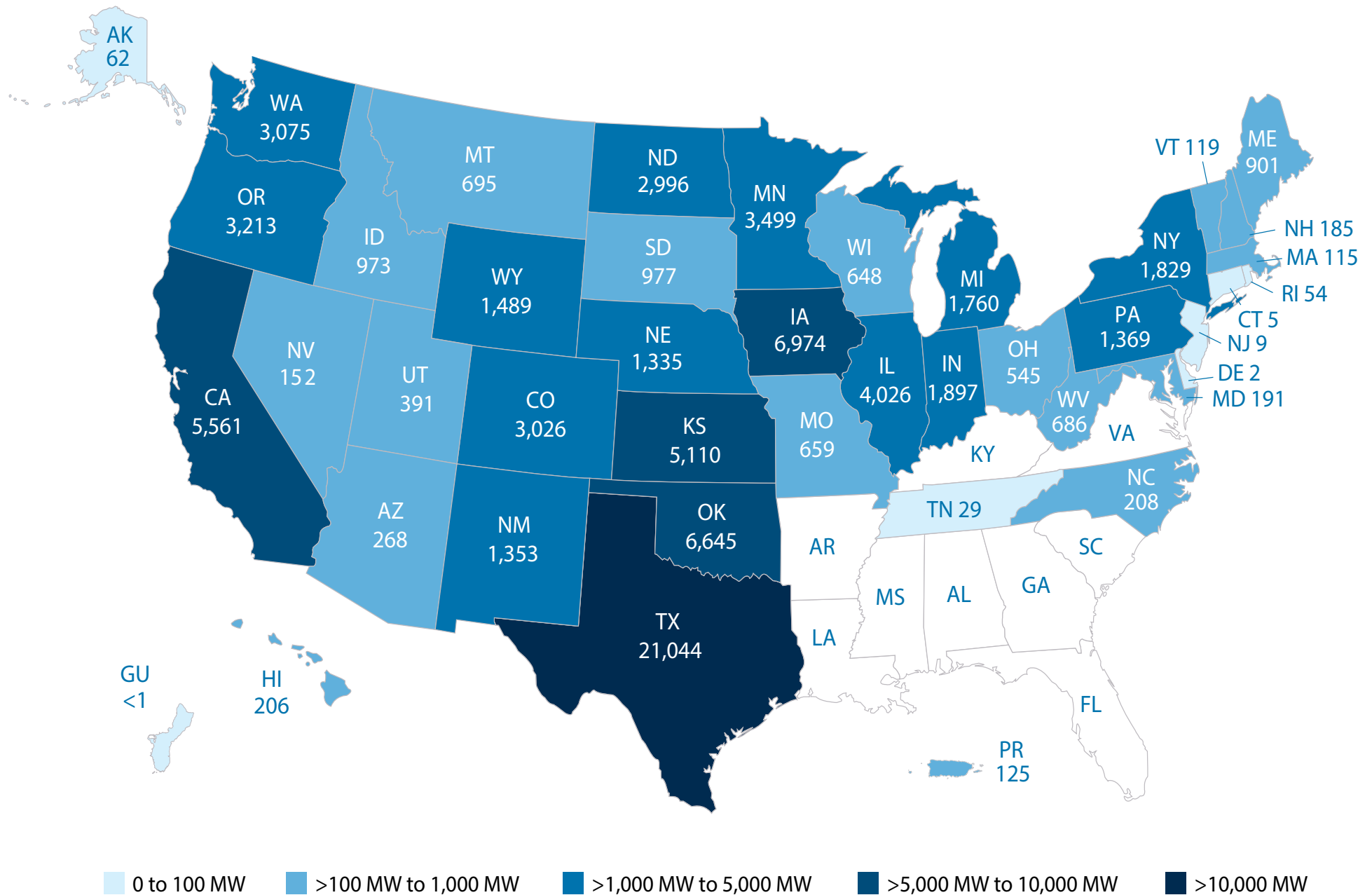


Note: Utility-scale wind capacity includes installations of wind turbines larger than 100-kW for the purpose of the AWEA U.S. Wind Industry Quarterly Market Reports. Annual capacity additions and cumulative capacity may not always add up due to decommissioned and repowered wind capacity. Wind capacity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

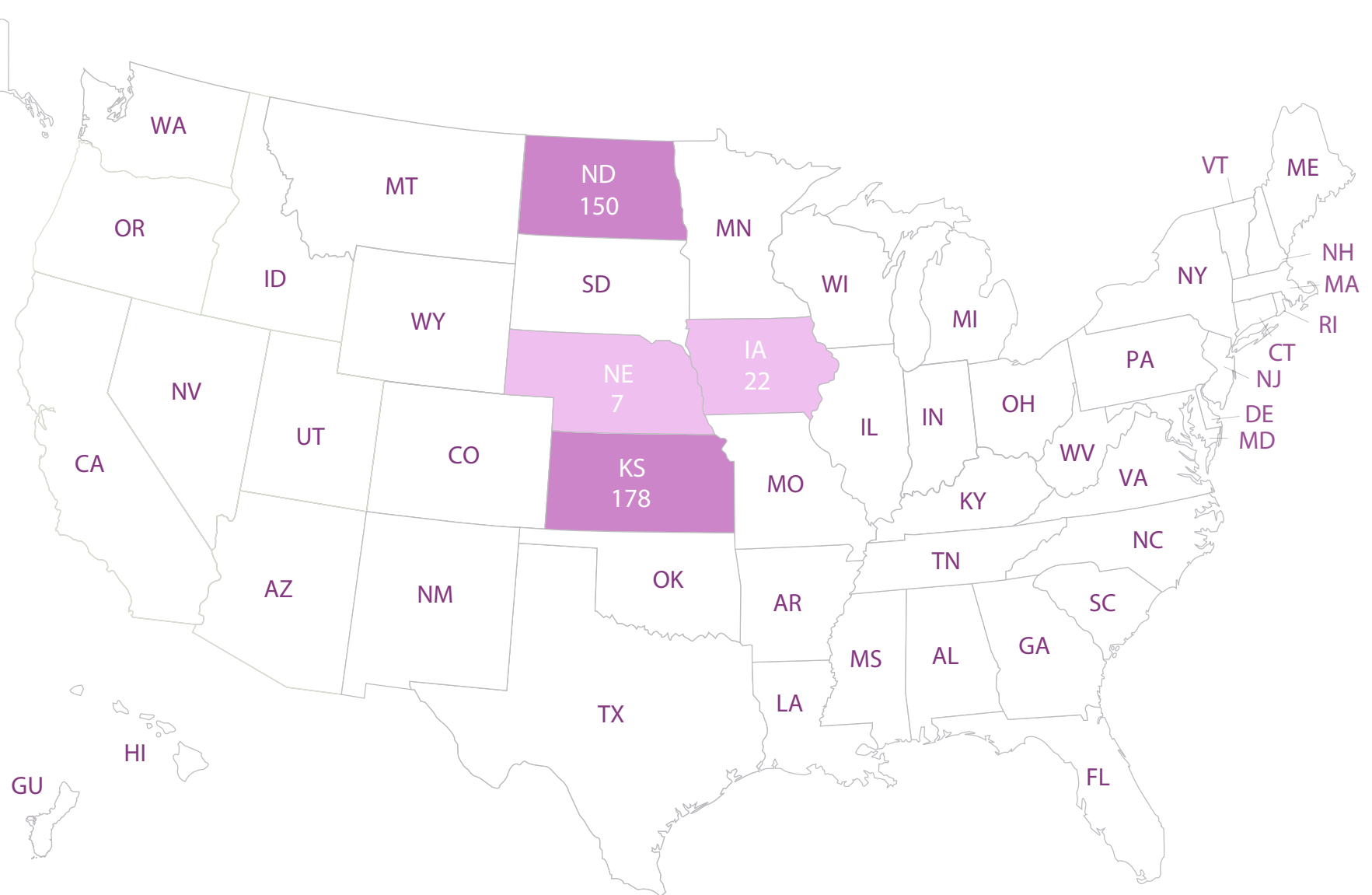
# U.S. Wind Power Capacity Installations, by Quarter



# U.S. Installed Wind Power Capacity, by State



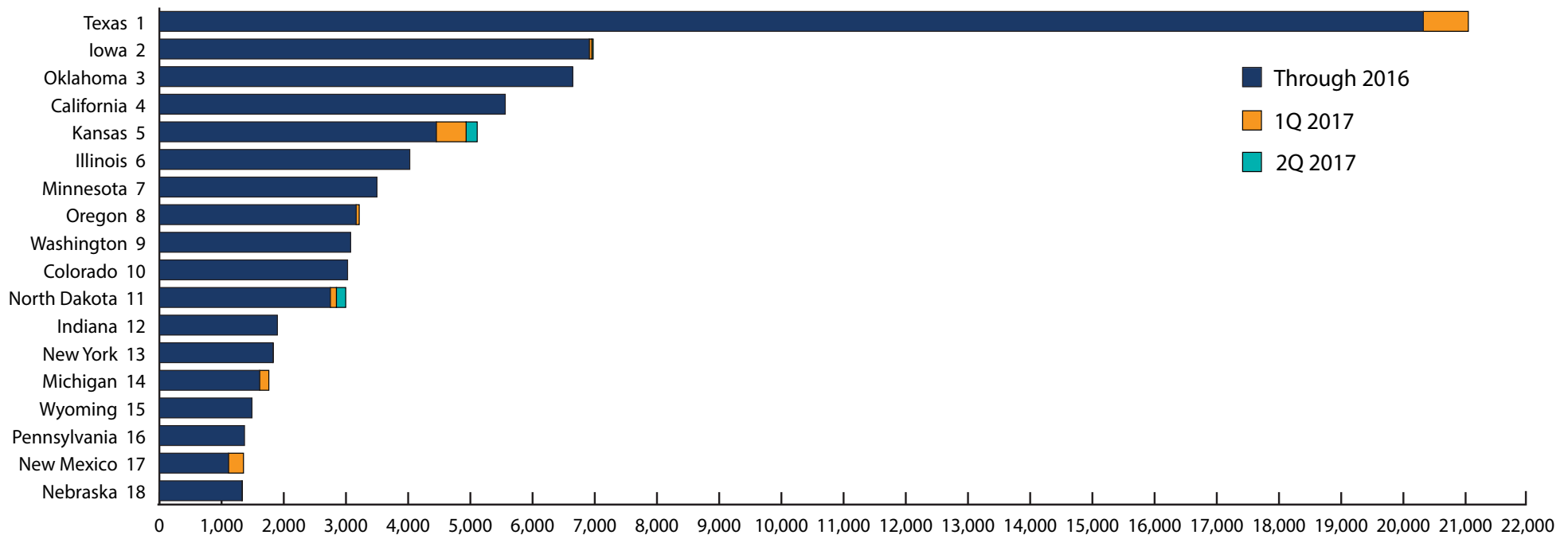
# U.S. Wind Power Capacity Installed during Second Quarter 2017, by State



0 to 100 MW    >100 MW to 250 MW    >250 MW to 500 MW    >500 MW to 1,000 MW    >1,000 MW



# U.S. Installed Wind Power Capacity, Top States



Top Five States with Wind Power Capacity Additions (MW)

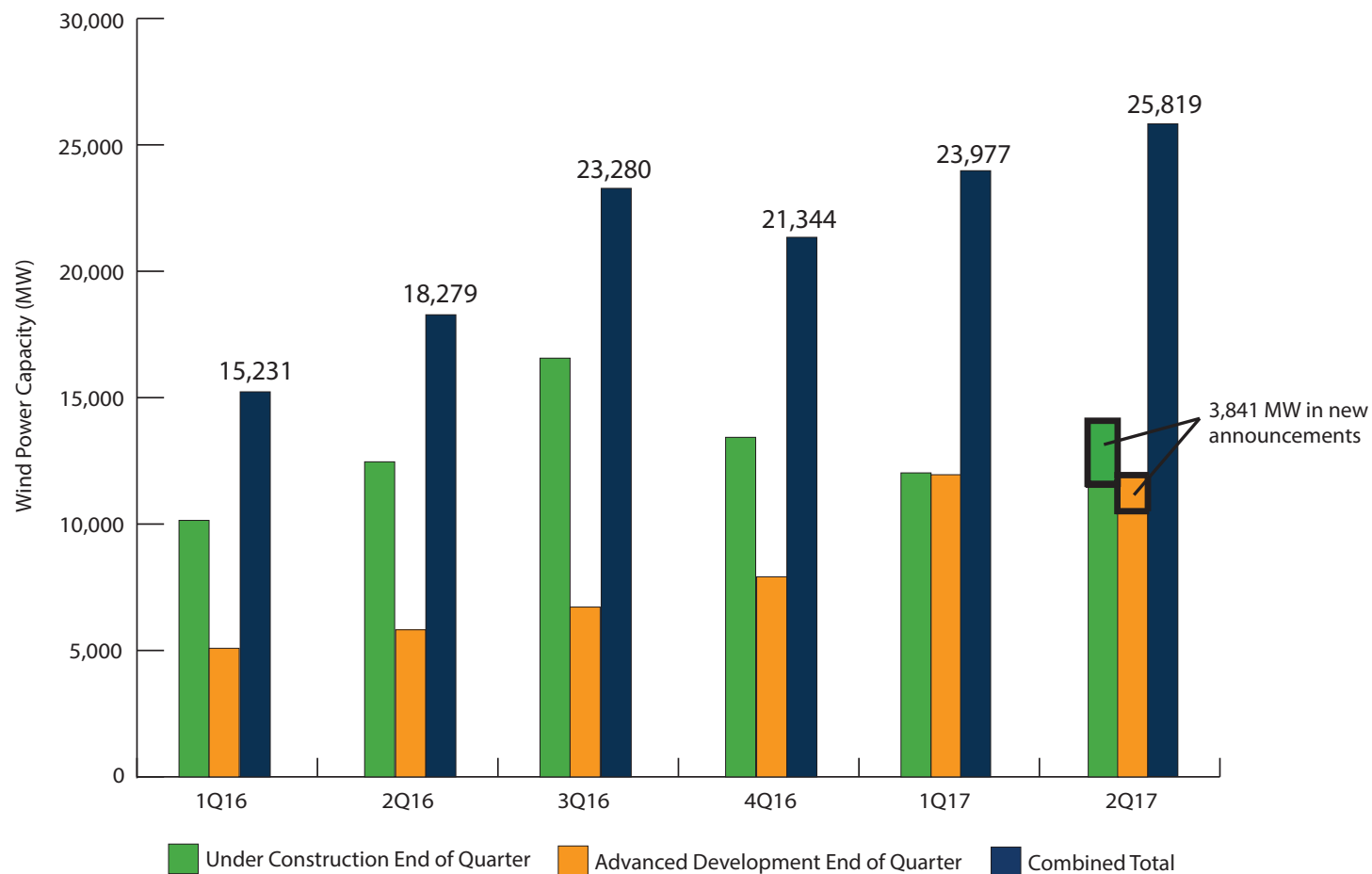
State	1Q 2017	2Q 2017	2017 Total
Texas	724	0	724
Kansas	481	178	659
North Dakota	99	150	249
New Mexico	242	0	242
North Carolina	208	0	208

- Kansas became the fifth state in the U.S. to surpass 5,000 MW installed capacity.
- Four states commissioned a total of six projects (327 MW) during the second quarter. Kansas led with 178 MW, followed by North Dakota (150 MW), Iowa (22 MW), and Nebraska (7 MW).
- Texas continues to lead the nation with 21,044 MW of installed capacity, more than triple the installed capacity of any other state.
- Given construction activity, Oklahoma is on pace to overtake Iowa to become the second-ranked state in installed capacity by the end of 2017.



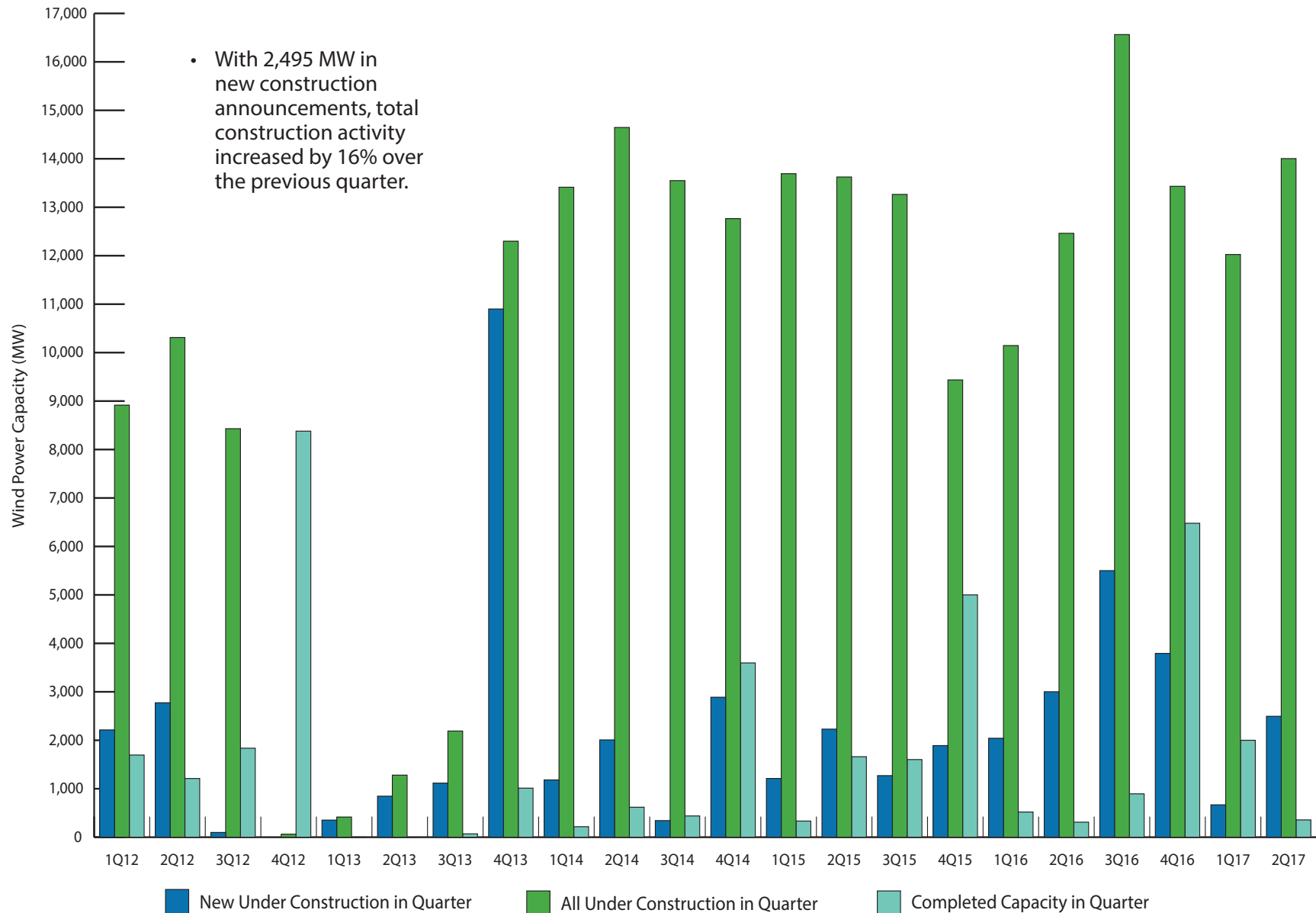
# Wind Power Capacity Under Construction or in Advanced Development

- There are now 25,819 MW of wind power capacity under construction (14,004 MW) or in advanced development (11,815 MW), a 41% year-over-year increase.
- Project developers announced 3,841 MW in combined new activity during the second quarter, including 2,495 MW in new construction announcements and 1,346 MW in new advanced development announcements.
- The 25,819 MW is spread across 143 projects in 29 states. 30% of all activity is located in the Midwest, with an additional 27% located in Texas, 22% in the Mountain West, and 11% in the Plains states.



Note: Project developer reported in second quarter of 2017 that the Chokecherry and Sierra Madre Wind Energy Project started construction in the third quarter of 2016. Historical construction levels have been adjusted accordingly.

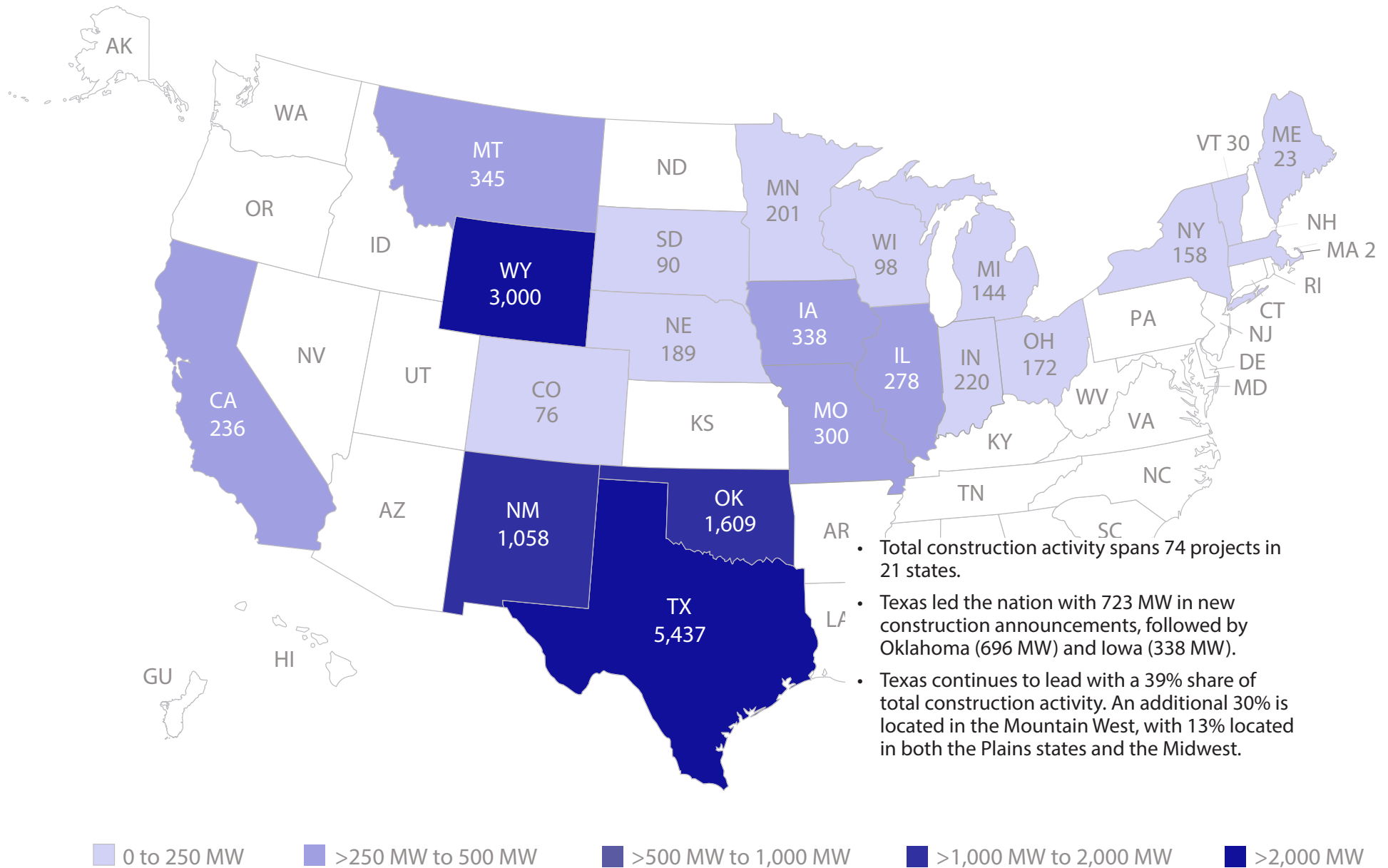
# Wind Power Capacity Under Construction



Note: Project developer reported in second quarter of 2017 that the Chokecherry and Sierra Madre Wind Energy Project started construction in the third quarter of 2016. Historical construction levels have been adjusted accordingly.

Note: Project developers self-report projects as under construction. The AWEA under construction definition is at the discretion of the project developer and may be different from the start construction definition under IRS Notices 2013-29 and 2013-60; projects are presumed to have taken steps to qualify for the PTC through safe harbor or physical construction.

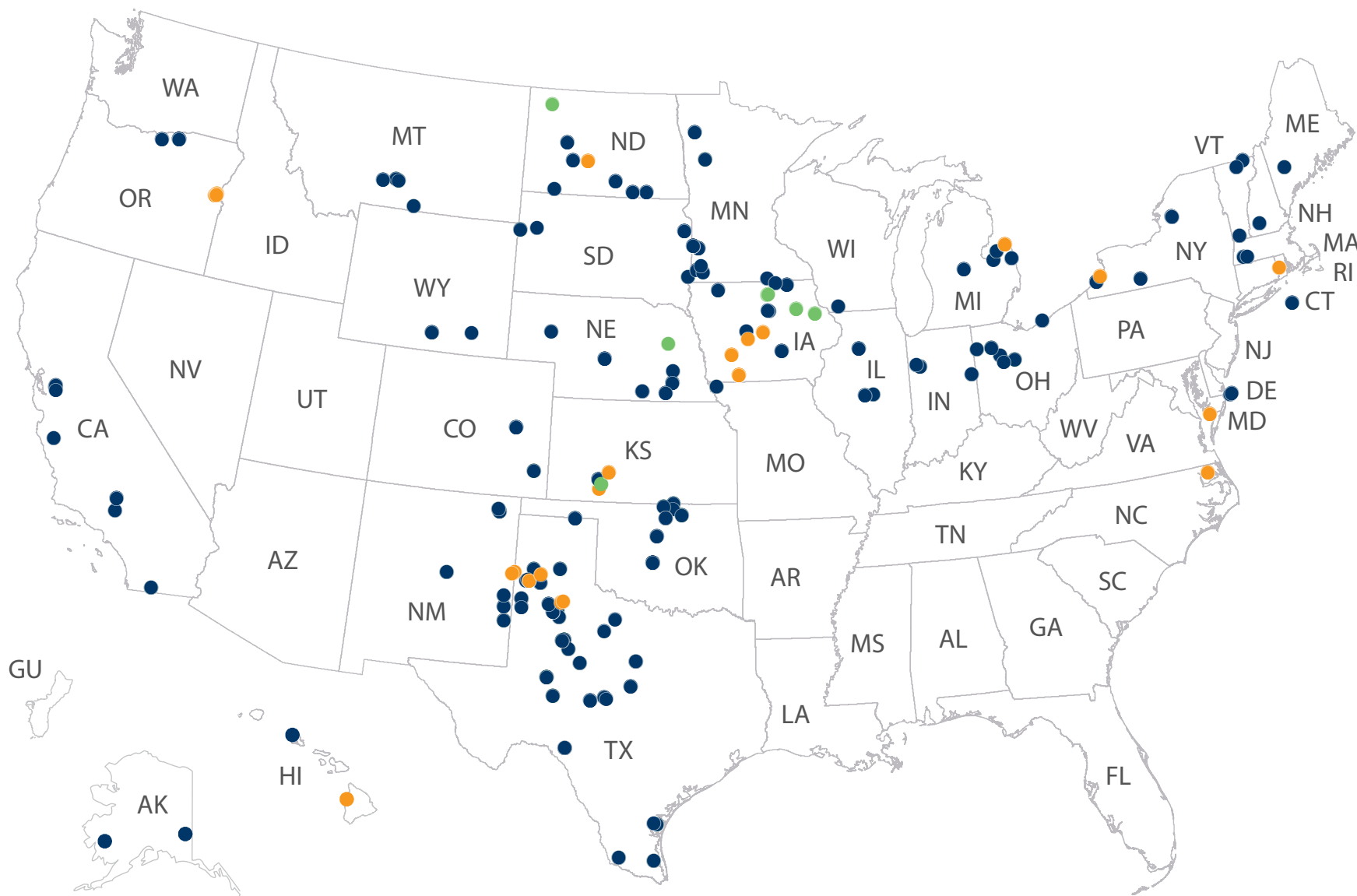
# Map of Wind Power Capacity Under Construction



Note: Project developers self-report projects as under construction. The AWEA under construction definition is at the discretion of the project developer and may be different from the start construction definition under IRS Notices 2013-29 and 2013-60; projects are presumed to have taken steps to qualify for the PTC through safe harbor or physical construction.

# Map of Projects Online during 2017, Under Construction, or in Advanced Development

● Projects Online 1Q 2017    ● Projects Online 2Q 2017    ● Projects Under Construction or in Advanced Development



# Utility-Scale Wind Projects Completed during 2017

State	Project Phase Name	Project Capacity (MW)	Turbine OEM	Turbine Model	Project Developer	Project Owner	Power Purchaser
First Quarter 2017							
HI	Lalamilo Wells Repowering	3.30	Vestas	V47	Lalamilo Wind Company LLC	Lalamilo Wind Company LLC	Hawaii County Department of Water Supply
IA	30 MW Iowa DG Portfolio	30.00	Nordex USA	AW125/3000	Optimum Renewables	Building Energy Wind Iowa	Interstate Power & Light
IA	August Wind Energy LLC	1.79	GE Renewable Energy	1.7-100	Greenfield Power	August Wind Energy LLC	Central Iowa Power Cooperative
IA	Birch Power LLC	1.79	GE Renewable Energy	1.7-100	Greenfield Power	Birch Power LLC	Central Iowa Power Cooperative
IA	Mason Wind LLC Perry	6.00	HZ Windpower	H111-2000	Mason Wind LLC	Mason Wind LLC	Interstate Power & Light
IA	Roseman Energy LLC	1.79	GE Renewable Energy	1.7-100	Greenfield Power	Roseman Energy LLC	Central Iowa Power Cooperative
KS	Cimarron Bend II	200.00	Vestas	V110-2.0	Enel Green Power North America; Tradewind Energy	Enel Green Power North America; GE Energy Financial Services	Kansas City Board of Public Utilities
KS	Western Plains	280.60	Siemens	SWT-2.3-108	Infinity Wind Power	Westar Energy	Westar Energy
MD	Crisfield Waste Water Treatment Plant	0.75	Aeronautica	54-750	Crisfield Wastewater Treatment Plant	Crisfield Wastewater Treatment Plant	Crisfield Wastewater Treatment Plant, Excess to Delmarva Power
MI	Deerfield	149.00	Vestas	V110-2.0	Algonquin Power; RES Americas	Algonquin Power	Wolverine Power Supply
NC	Amazon Wind Farm US East	208.00	Gamesa	G114-2.0	Avangrid Renewables	Avangrid Renewables	Amazon Web Services
ND	Oliver III	99.25	GE Renewable Energy	1.7-100; 2.0-116	NextEra Energy Resources	NextEra Energy Resources	Minnkota Power
NM	Broadview Energy JN LLC	98.90 (of 181.70)	Siemens	SWT-2.3-108	National Renewable Solutions; Pattern Energy Group LP	Pattern Energy Group LP	Southern California Edison
NM	Broadview Energy KW LLC	142.60	Siemens	SWT-2.3-108	National Renewable Solutions; Pattern Energy Group LP	Pattern Energy Group LP	Southern California Edison
NY	Seneca Nation	1.50	VENSYS	VENSYS 82	Seneca Nation of Indians	Seneca Nation of Indians	Seneca Nation of Indians, Excess to National Grid
OR	Benson Creek	10.00	GE Renewable Energy	2.0-116	Oregon Windfarms LLC	Oregon International Holdings LLC	Idaho Power
OR	Durbin Creek	10.00	GE Renewable Energy	2.0-116	Oregon Windfarms LLC	D. E. Shaw Renewable Investments LLC	Idaho Power
OR	Jett Creek	10.00	GE Renewable Energy	2.0-116	Oregon Windfarms LLC	Homestead Windfarm LLC	Idaho Power
OR	Prospector	10.00	GE Renewable Energy	2.0-116	Oregon Windfarms LLC	D. E. Shaw Renewable Investments LLC	Idaho Power
OR	Willow Spring	10.00	GE Renewable Energy	2.0-116	Oregon Windfarms LLC	8030 Companies Inc.	Idaho Power
RI	WED Coventry 5	1.50	VENSYS	VENSYS 82	Wind Energy Development LLC	Wind Energy Development LLC	National Grid

# Utility-Scale Wind Projects Completed during 2017

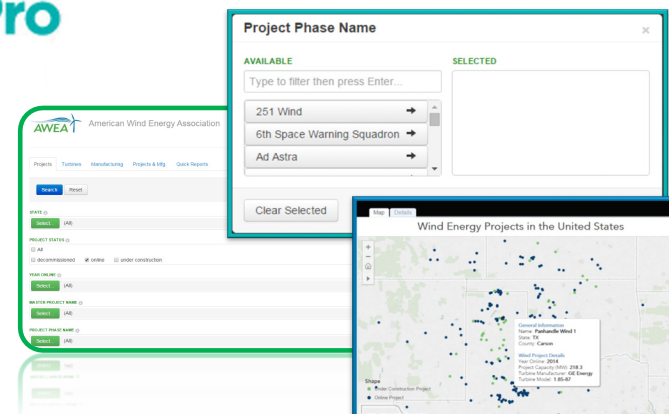
State	Project Phase Name	Project Capacity (MW)	Turbine OEM	Turbine Model	Project Developer	Project Owner	Power Purchaser
TX	Bethel	276.00	GE Renewable Energy	2.3-116	Invenergy; Orion Energy	Southern Power	Google Energy (225 MW); Merchant (51 MW)
TX	Broadview Energy JN LLC	82.80 (of 181.70)	Siemens	SWT-2.3-108	National Renewable Solutions; Pattern Energy Group LP	Pattern Energy Group LP	Southern California Edison
TX	Cotton Plains Wind	50.40	GE Renewable Energy	2.4-107	Apex Clean Energy	Northleaf Capital Partners	Defense Logistics Agency
TX	Falvez Astra	163.20	GE Renewable Energy	2.4-107	WindHQ	WindHQ	Merchant (ERCOT)
TX	Old Settler Wind	151.20	GE Renewable Energy	2.4-107	Apex Clean Energy	Northleaf Capital Partners	Allianz Risk Transfer
Second Quarter 2017							
IA	Mason Wind LLC Dyersville	6.00	HZ Windpower	H111-2000	Mason Wind LLC	Mason Wind LLC	Interstate Power & Light
IA	Mason Wind LLC Fairbank	6.00	HZ Windpower	H111-2000	Mason Wind LLC	Mason Wind LLC	Interstate Power & Light
IA	Mason Wind LLC Mason City	10.00	HZ Windpower	H111-2000	Mason Wind LLC	Mason Wind LLC	Interstate Power & Light
KS	Bloom	178.20	Vestas	V117-3.3	Capital Power	Capital Power	Microsoft
ND	Lindahl	150.00	Vestas	V100-2.0	Enel Green Power North America; Tradewind Energy	Enel Green Power North America; GE Energy Financial Services	Basin Electric Power Cooperative
NE	Creston Ridge Expansion	6.90	GE Renewable Energy	2.3-116	Bluestem Energy Solutions	Bluestem Energy Solutions	Loup River Public Power District

# AWEA Industry Data & Analysis

For additional AWEA industry data & analysis, please visit [www.awea.org/marketreports](http://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 Second Quarter 2017 Market Report can be accessed at [www.awea.org/2Q2017](http://www.awea.org/2Q2017).

Access AWEA Market Database Pro at [www.awea.org/database](http://www.awea.org/database) for a comprehensive database of all online, under construction, and advanced development wind projects with 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](mailto:hhunt@awea.org).



# AWEA Industry Data & Analysis

## New Data Products in 2017

AWEA released its ninth annual “U.S. Wind Industry Annual Market Report Year Ending 2016” on April 11th, 2017.

The 164-page report provides a comprehensive review of U.S. wind industry trends, detailed market rankings, wind project activity, jobs growth, economic benefits, manufacturing data, and more.

Members can download the report for free and non-members can purchase the report at <http://www.awea.org/amr2016>.

AWEA’s new report “Property Tax Treatment of Commercial Wind Energy Projects” provides a comparative overview of state property tax treatment in the 40 states with operational wind projects at the end of 2016.

Created in partnership with the law firm Polsinelli, the report is designed to help AWEA members navigate the complex and varying property tax structures among different states and localities, and act as an educational tool for state level policy advocacy.

Members can download the report for free at <http://www.awea.org/propertytax>.

