

American Wind Energy Association U.S. Wind Industry Fourth Quarter 2018 Market Report

A product of AWEA Data Services

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The U.S. wind industry installed 5,944 megawatts (MW) in the fourth quarter of 2018, the third highest quarter on record for new installations. Wind developers added 7,588 MW for the year, bringing total U.S. installed capacity to 96,488 MW.

Corporate and non-utility wind procurement set a new record in 2018 with a total of 4,203 MW signed, a 66% increase over the previous record set in 2015. Total PPA volumes reached 8,507 MW in 2018, the highest level on record. This includes 1,589 MW of PPAs signed in the fourth quarter.

Project developers reported a combined 35,095 MW of wind capacity under construction or in advanced development as of the end of the fourth quarter, with 5,786 MW in new activity during the last three months.

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Fourth Quarter Highlights

2018 Wind Project Installations

- The U.S. wind industry installed 5,944 MW of new wind power capacity in the fourth quarter of 2018, the third-strongest quarter for installations on record. In total, the industry commissioned 7,588 MW of wind power capacity in 2018, an 8% increase over 2017.
- A total of 47 new wind projects were commissioned across 17 states during the fourth quarter. Texas led with 1,479 MW installed, followed by Iowa (1,116 MW), Colorado (600 MW), Kansas (543 MW), and Nebraska (521 MW).
- In addition to new capacity additions, developers completed 909 MW of partial repowerings in the fourth quarter. For the year, developers completed 1,237 MW of partial repowerings and 107 MW of full repowerings.
- There are now 96,488 MW of cumulative installed wind capacity in the United States, with more than 56,800 wind turbines operating in 41 states plus Guam and Puerto Rico.

Wind Capacity Under Construction or in Advanced Development

- At the end of 2018 there were 16,521 MW of wind capacity under construction and 18,574 MW in advanced development. The combined 35,095 MW is a decline from the recent high in the third quarter due to the large volume of projects entering commercial operation, but still represents a 22% year-over-year increase.
- Projects totaling 2,379 MW started construction and a further 3,419 MW entered advanced development during the fourth quarter, for a combined 5,786 MW in new announcements.
- Texas currently hosts 20% of combined activity, followed by Wyoming (13%), Iowa (9%), South Dakota (6%), and New Mexico (6%).
- The majority (39%) of capacity in the pipeline has a PPA in place, while 23% is proceeding under direct utility ownership.

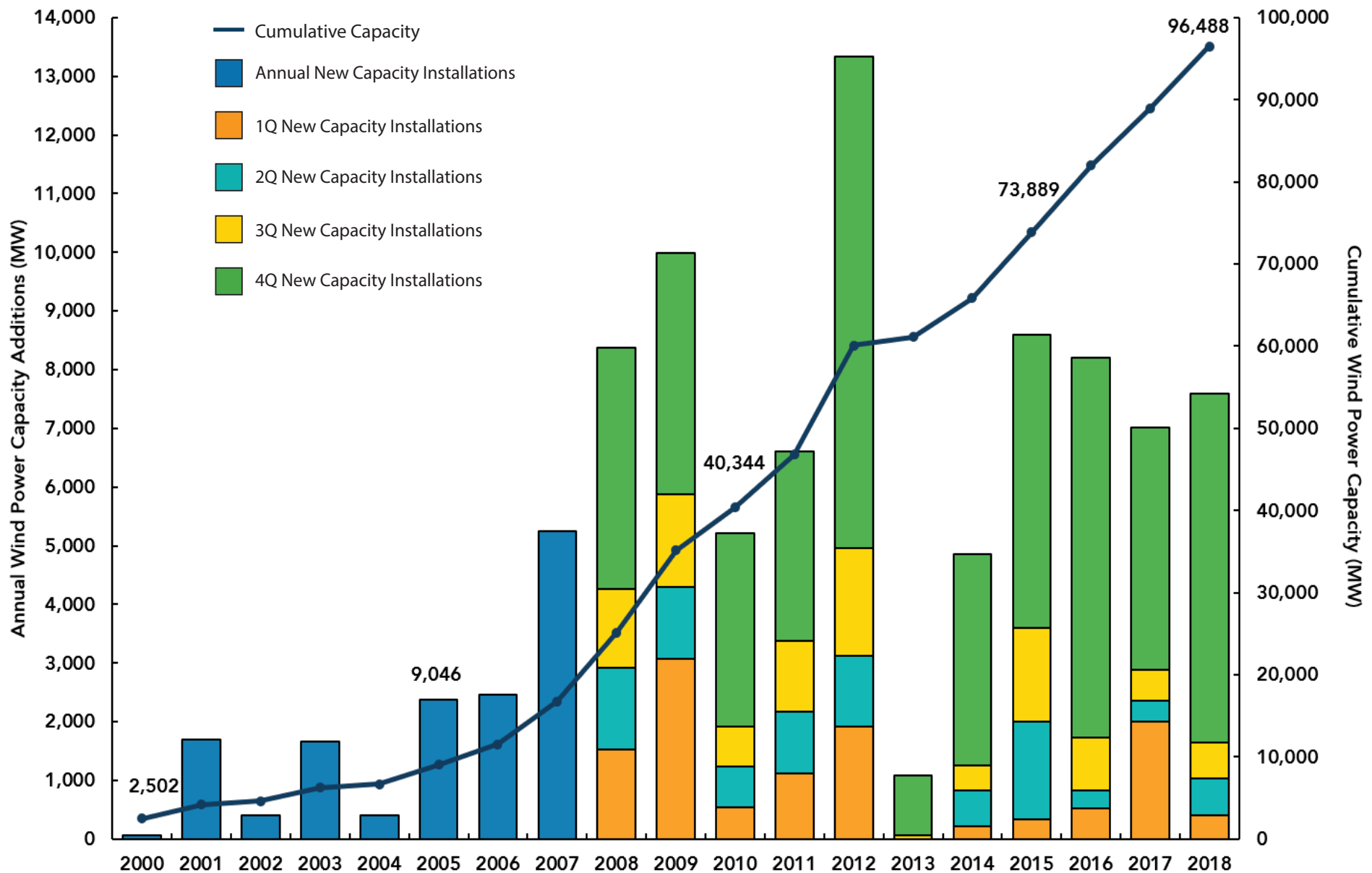
Wind Power Procurement Activity

- Project developers announced 1,589 MW of new PPAs in the fourth quarter, bringing total 2018 activity to 8,507 MW. This marks the highest volume of wind PPAs on record.
- Corporate and other non-utility customers signed 75% (1,177 MW) of capacity contracted in the fourth quarter, including 7 first time wind buyers. 2018 was the most active year for corporate and non-utility PPAs with a total of 4,203 MW signed, a 66% increase over the previous record set in 2015.
- Utilities signed 412 MW of PPAs and announced plans to develop and own 697 MW of rate-based wind capacity during the fourth quarter. In total, utilities signed contracts for 4,304 MW of wind capacity and announced plans to add 3,111 MW under direct ownership throughout 2018.

Turbine Technology Trends

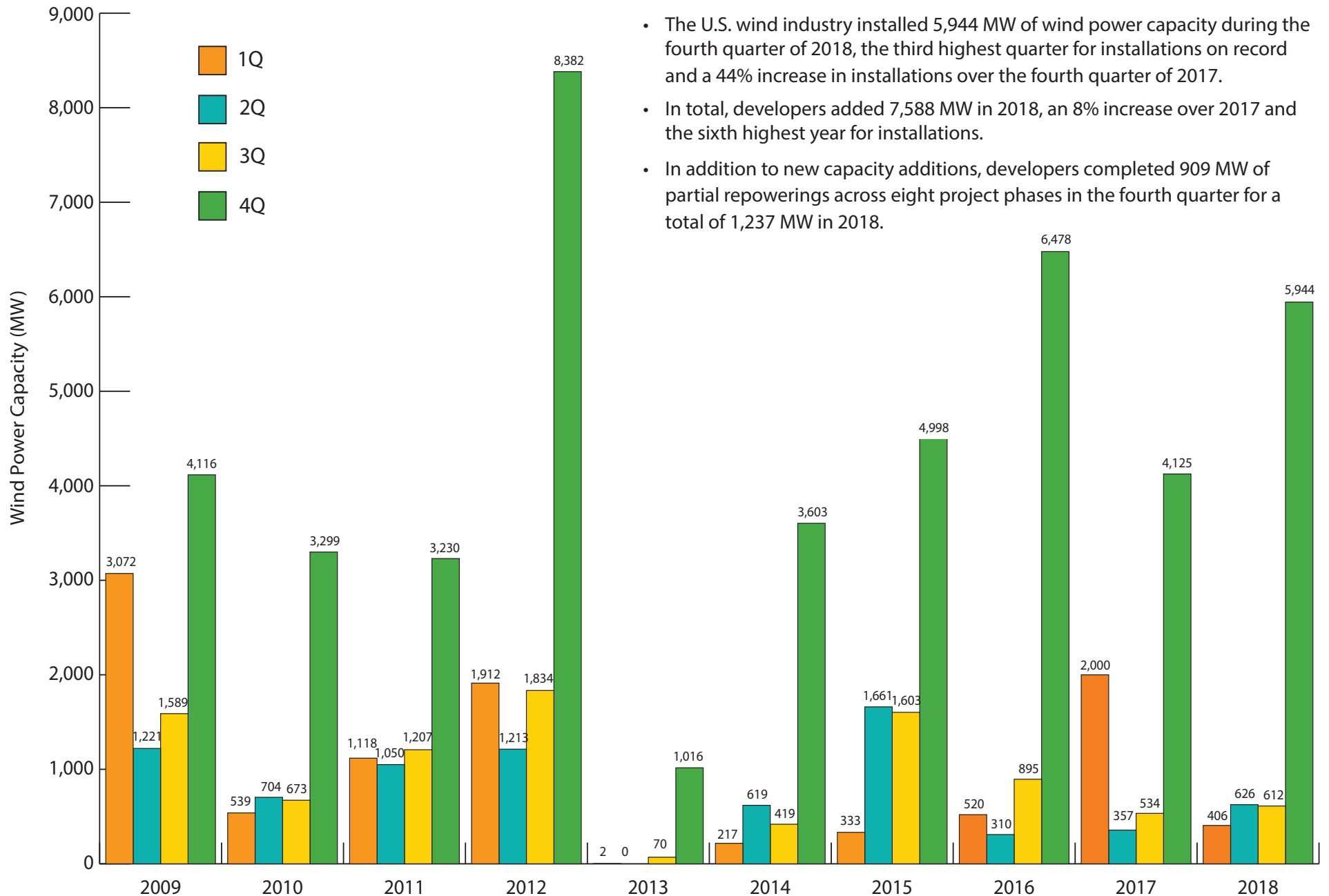
- GE Renewable Energy reclaimed the top spot for turbine manufacturers in 2018, capturing 40% of U.S. wind turbine capacity installations. Vestas followed with 38% of the market, Nordex USA captured 11%, and Siemens Gamesa Renewable Energy represented 8% of installations.
- The majority of turbines commissioned in 2018 have a nameplate capacity between 2 MW and 3 MW, while 24% of projects are using turbines rated 3 MW and above.

U.S. Annual and Cumulative Wind Power Capacity Growth



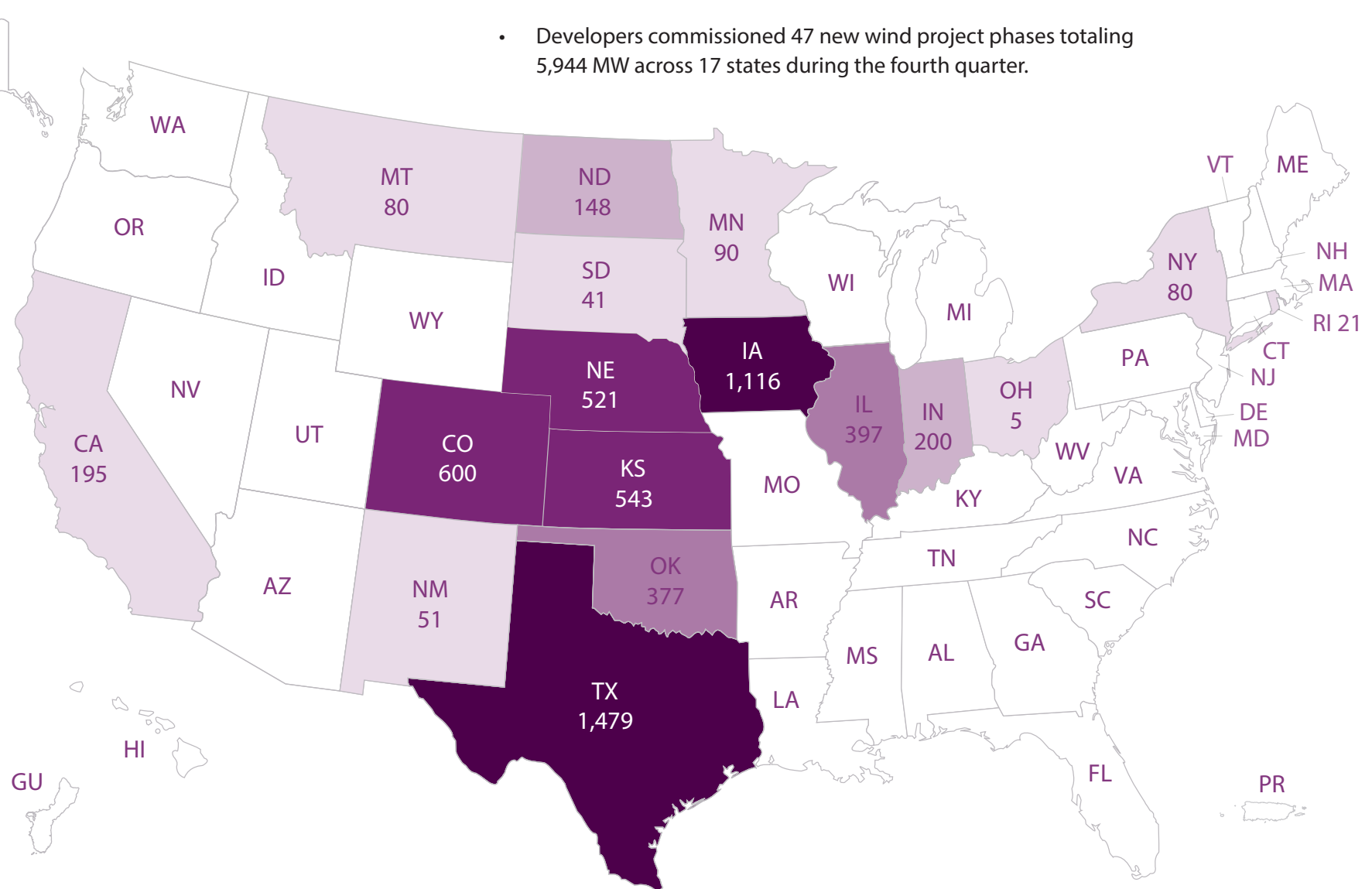
Note: Utility-scale wind capacity includes installations of wind turbines larger than 100-kW for the purpose of the AWEA U.S. Wind Industry Quarterly Market Reports. Annual capacity additions and cumulative capacity may not always add up due to decommissioned and repowered wind capacity. Wind capacity data for each year is continuously updated as information changes. AWEA did not track quarterly activity prior to 2008.

Quarterly U.S. Wind Power Capacity Installations



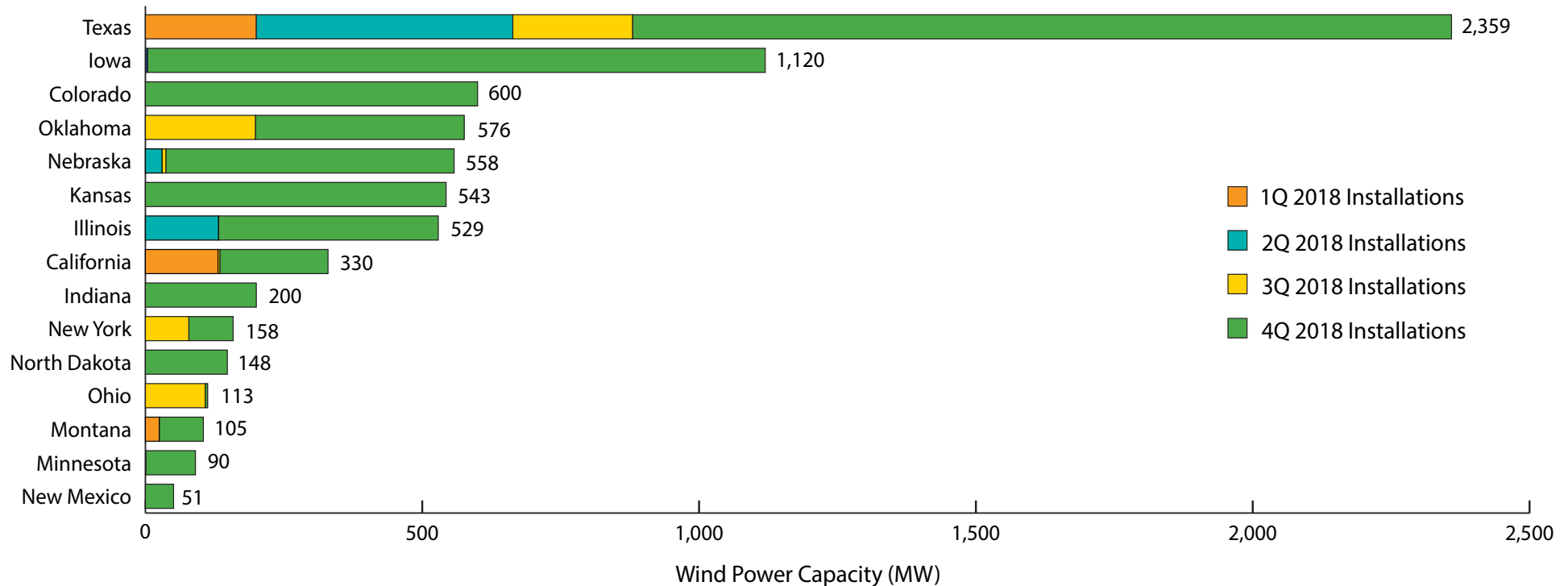
New Wind Power Capacity Installations in Fourth Quarter 2018, by State

- Developers commissioned 47 new wind project phases totaling 5,944 MW across 17 states during the fourth quarter.



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

2018 Wind Power Capacity Installations, Top States

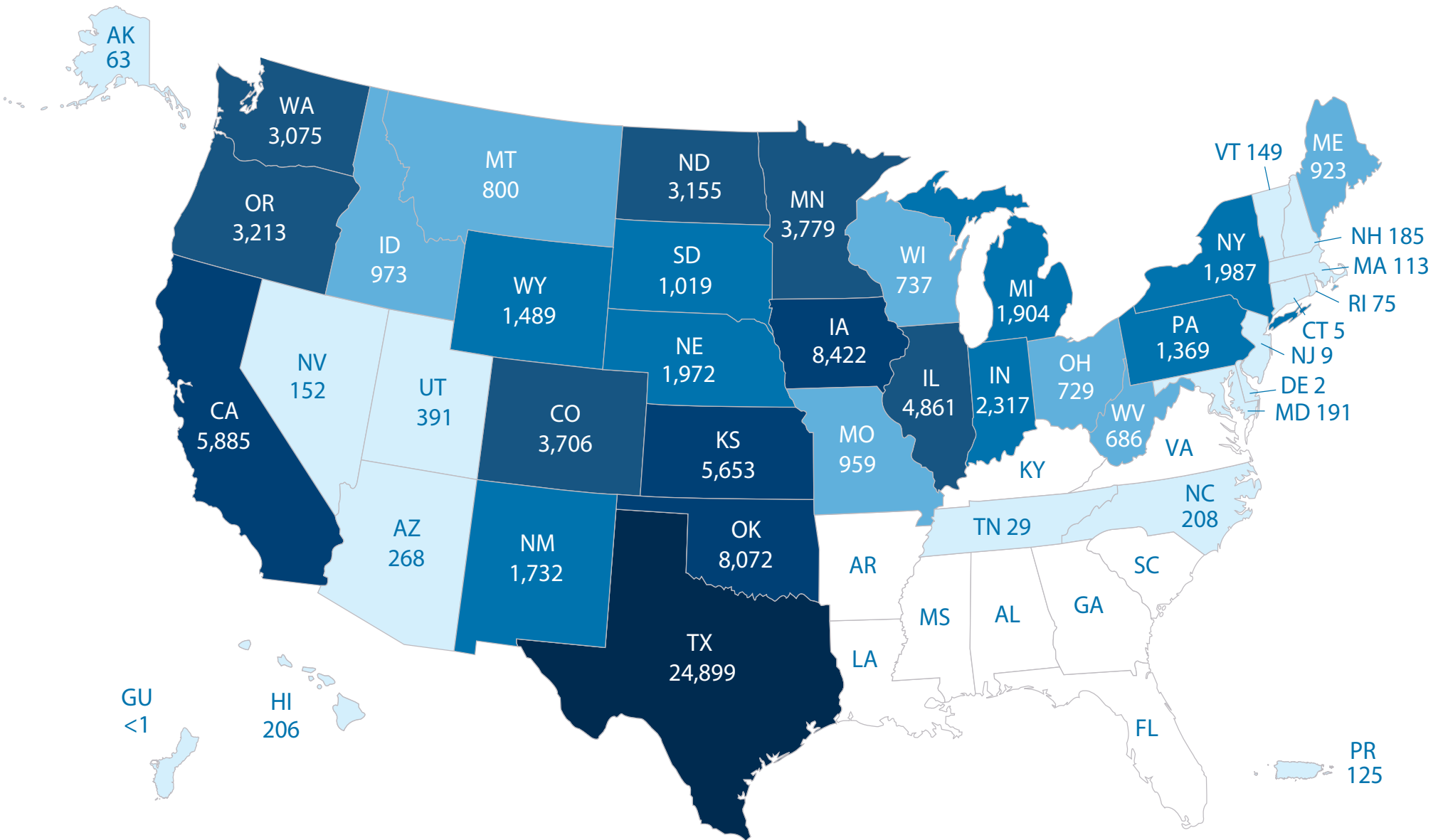


Top Five Owners of
New Wind Capacity Installed in 2018

Company	Capacity Added in 2018 (MW)
NextEra Energy Resources	1,406
Berkshire Hathaway Energy	1,329
Enel Green Power North America	802
Xcel Energy	600
EDP Renewables North America	317

- Texas led in fourth quarter installations with 1,479 MW, followed by Iowa (1,116 MW), Colorado (600 MW), Kansas (543 MW), and Nebraska (521 MW).
- A total of 20 states added wind capacity in 2018. Texas, Iowa, Colorado, Oklahoma, and Nebraska led in installations for the year, each adding over 500 MW.
- Iowa surpassed Oklahoma in the fourth quarter to reclaim the second spot for cumulative installations. Texas continues to lead the nation with 24,899 MW of cumulative installed capacity.
- Iowa and Oklahoma became the second and third states to exceed 8,000 MW of installed wind capacity, while South Dakota became the 19th state to surpass 1,000 MW.
- NextEra Energy Resources added the most new wind capacity last year, commissioning a total of 1,406 MW. Berkshire Hathaway Energy claimed the second spot and Enel Green Power North America ranked third, both adding over 800 MW.

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

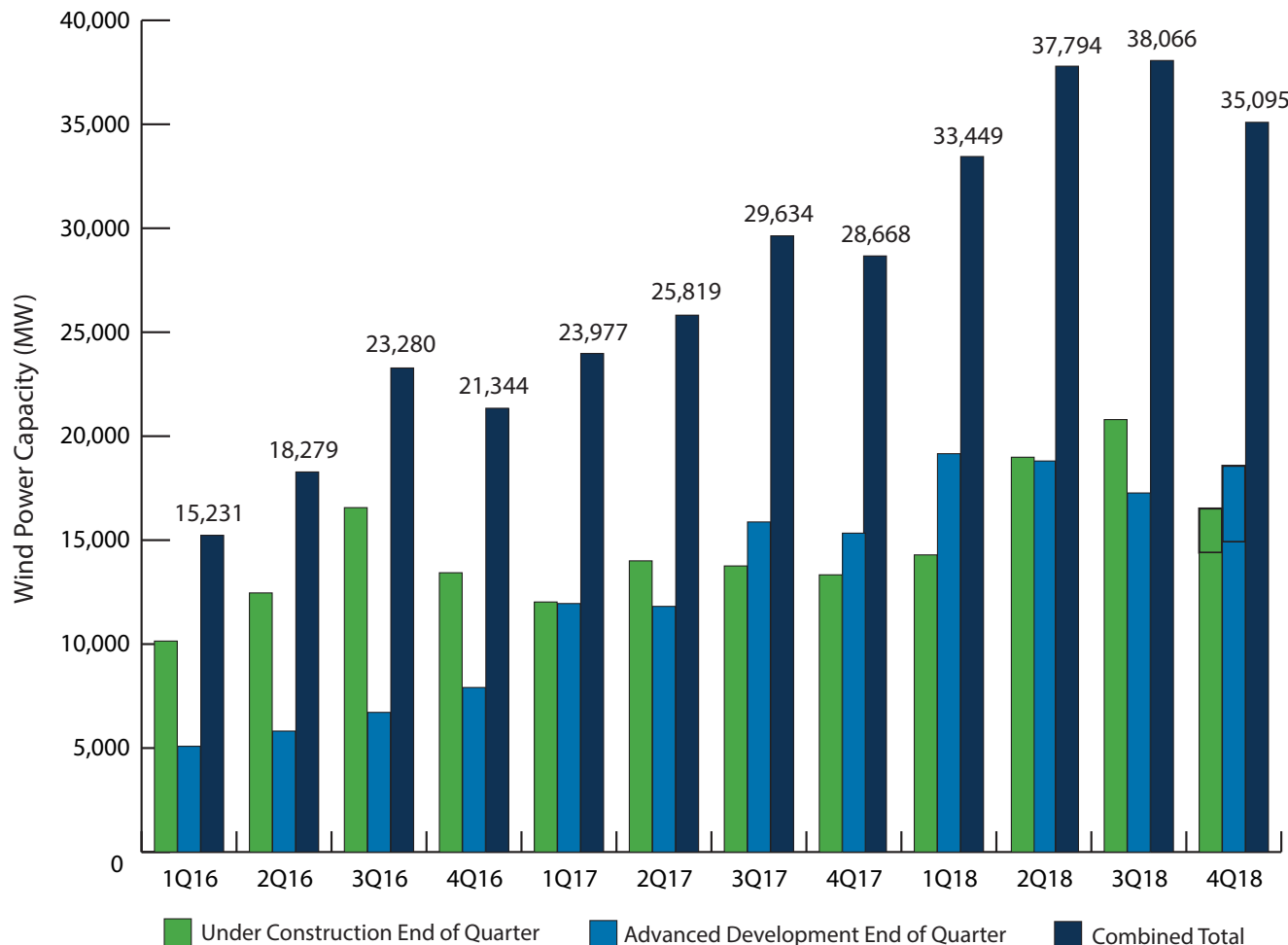


0 to 500 MW >500 to 1,000 MW >1,000 to 2,500 MW >2,500 to 5,000 MW >5,000 to 10,000 MW >10,000 MW

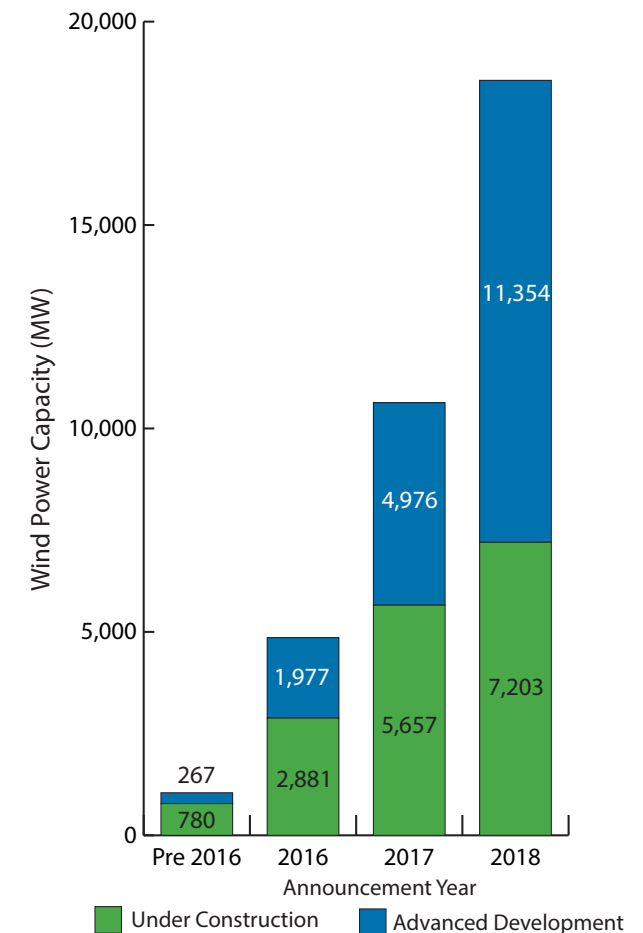
Wind Power Capacity Under Construction or in Advanced Development

- At the end of 2018 there were 35,095 MW of wind power capacity either under construction (16,521 MW) or in advanced development (18,574 MW). Combined activity decreased quarter over quarter due to the large volume of projects commissioned in the fourth quarter, but still represents a 22% year-over-year increase.
- Project developers announced 5,786 MW in combined new activity during the fourth quarter of 2018, with projects totaling 2,125 MW starting construction and 3,661 MW entering the advanced development phase. New announcements were up 26% over the previous quarter.
- Wind projects currently under construction have been underway for an average of three quarters, while projects in advanced development have been underway for an average of one year. Over 50% of the 35,095 MW underway started construction or entered advanced development in 2018.

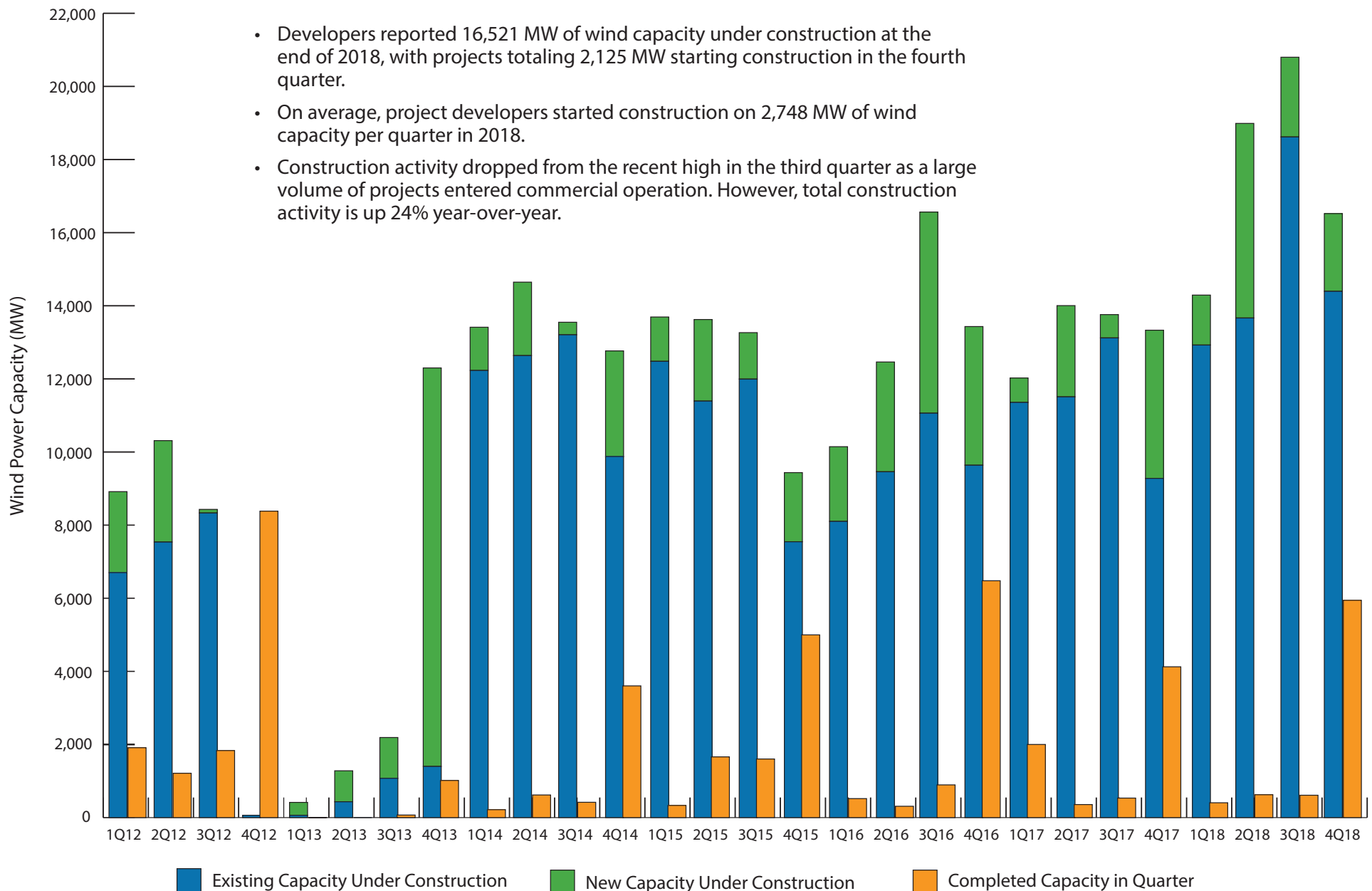
Construction and Advanced Development Activity over Time



Current Construction and Advanced Development Pipeline by Announcement Year

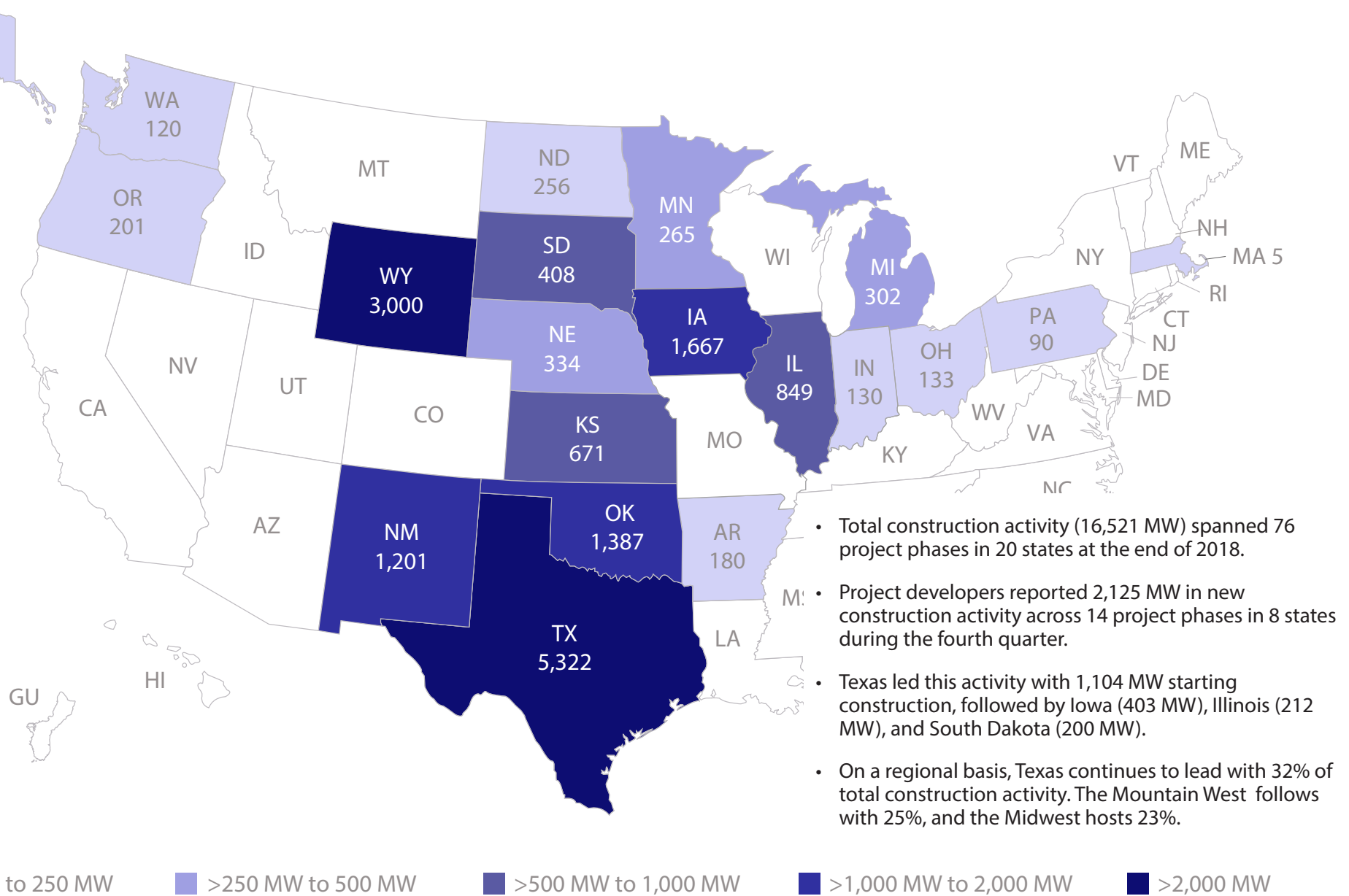


Wind Power Capacity Under Construction



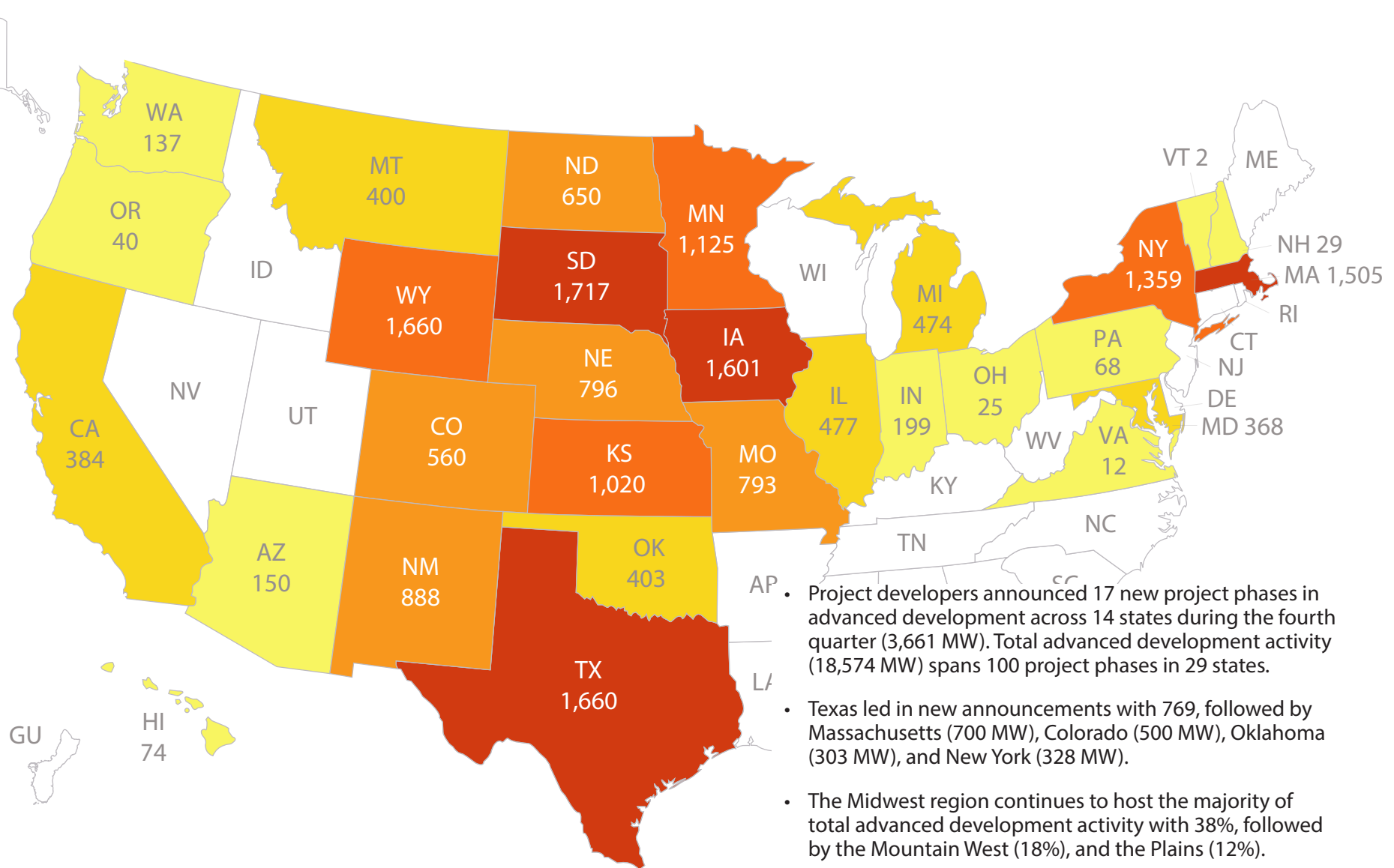
Note: Project developers self-report projects as under construction. The AWEA under construction definition is at the discretion of the project developer and may be different from the start construction definition under IRS Notices 2013-29 and 2013-60; projects are presumed to have taken steps to qualify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

Wind Power Capacity Under Construction, by State



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.

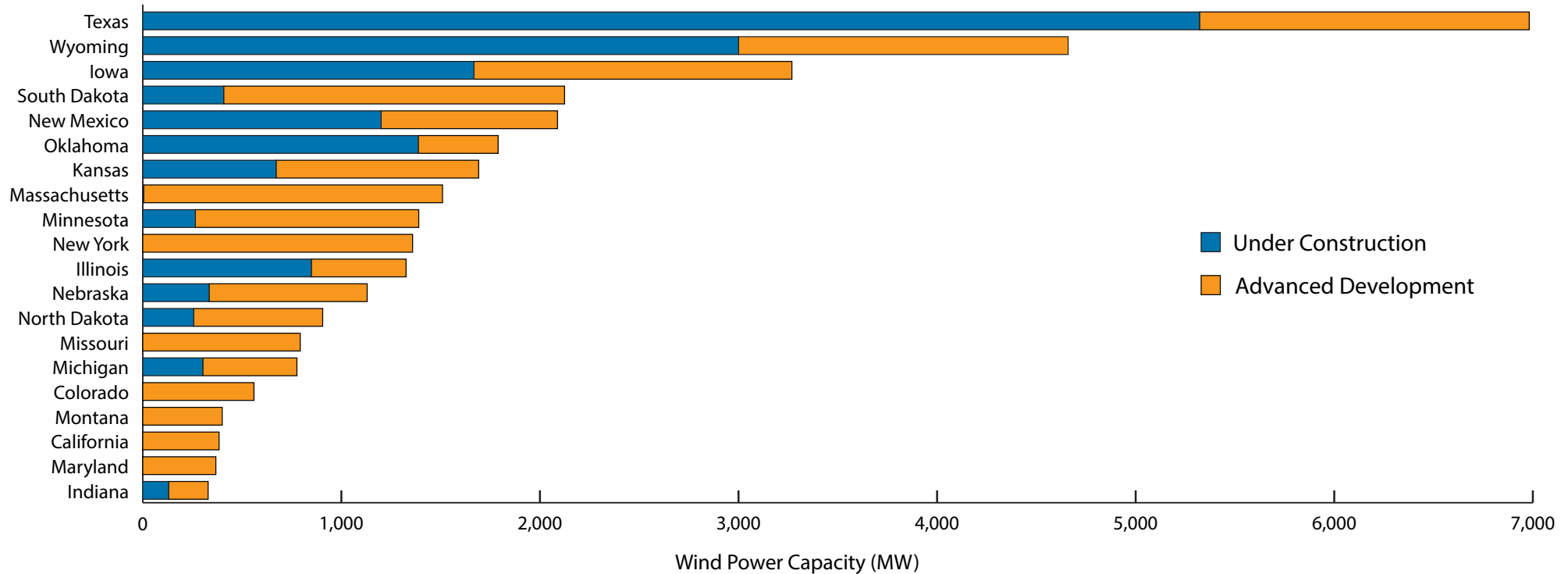
Wind Power Capacity in Advanced Development, by State



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

Note: AWEA defines a project as in advanced development if it has not yet started construction but has either signed a PPA (or similar long-term contract), announced a firm turbine order, or been announced to proceed under utility ownership.

Wind Power Capacity Under Construction or in Advanced Development, Top States



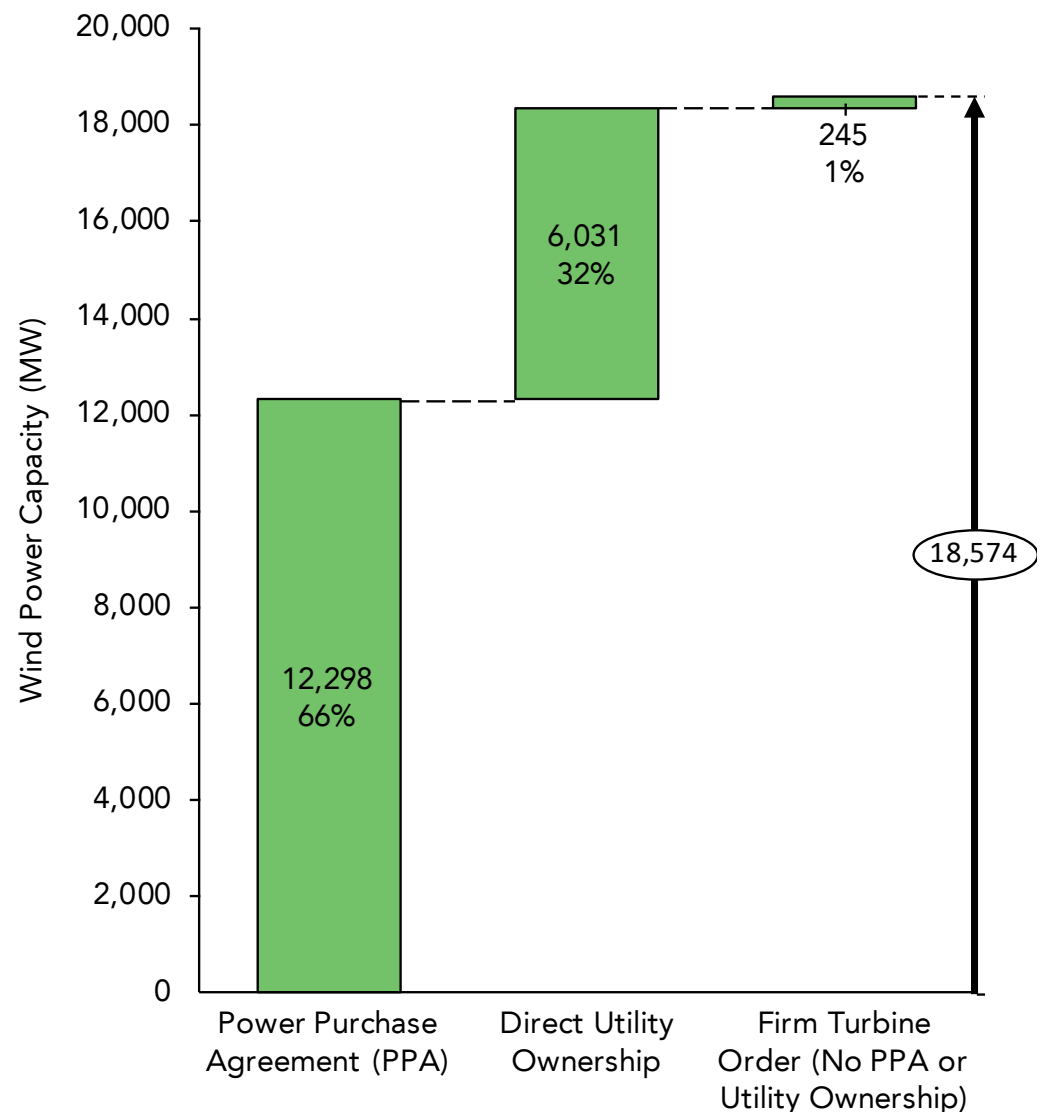
- The 35,095 MW of combined construction and advanced development activity are spread across 176 project phases in 31 states.
- Texas currently hosts the most activity (20%), followed by Wyoming (13%), Iowa (9%), South Dakota (6%), and New Mexico (6%).
- A total of 12 states have over 1,000 MW of wind capacity in the pipeline.
- Twelve states have enough capacity underway to grow their installed bases by 50% or more, and 20 states have enough to grow by 25% or more.
- At a regional level, the majority (31%) of all activity is located in the Midwest region. The Mountain West hosts 21% of combined activity, followed by Texas (20%) and the Plains states (13%).
- NextEra Energy Resources is currently the top developer of projects under construction or in advanced development, followed by Invenergy and Power Company of Wyoming.

Top Five Developers for Projects Under Construction and in Advanced Development

Developer	Combined Project Capacity (MW)
NextEra Energy Resources	4,160
Invenergy	3,308
Power Company of Wyoming	3,000
Tri Global Energy	2,689
Scout Clean Energy	2,083

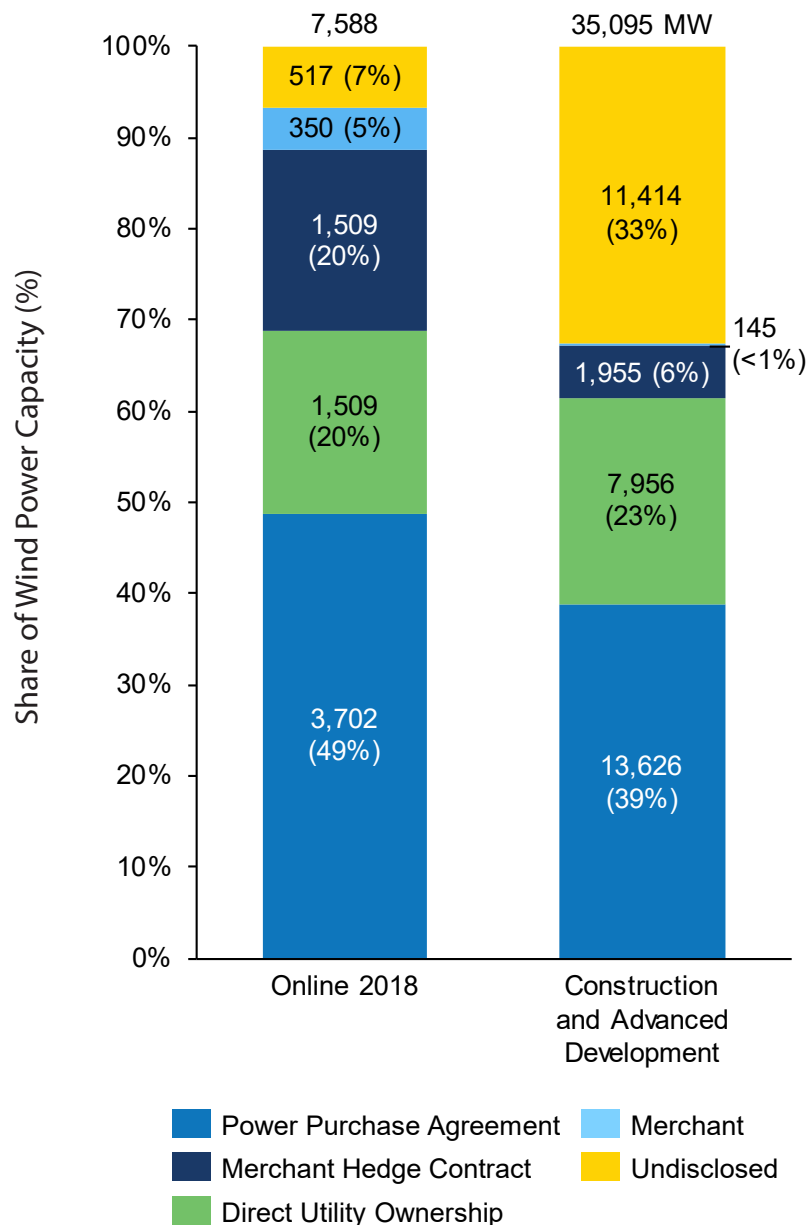
Wind Power Capacity in Advanced Development

- Project developers reported a total of 18,574 MW of wind capacity in advanced development at the end of the fourth quarter, including 3,419 MW of new announcements.
- Total advanced development capacity increased 8% over the previous quarter and is up 21% year-over-year thanks to strong PPA and utility ownership activity, RPS solicitations in New York and Illinois, and offshore wind solicitations.
- PPA announcements continue to fuel advanced development activity, with two thirds of advanced development capacity holding a signed PPA for at least a portion of the project's total capacity.
- Roughly one third of advanced development capacity is proceeding under direct utility ownership, reflecting a trend of utility announcements to own and rate-base significant amounts of wind capacity in recent years.
- Utilities announced plans to develop and own 697 MW of rate-based wind capacity in the fourth quarter, including Xcel Energy (500 MW) and Ameren Missouri (157 MW). For the year, utilities announced plans to own 3,111 MW of wind power. While down 25% from 2017 announcements, it marks continued utility appetite to own and rate-base wind projects.
- The remaining 1% of advanced development capacity has reported a firm turbine order, but not yet announced an offtake agreement.



Note: AWEA defines a project as in advanced development if it has not yet started construction but has either signed a PPA (or similar long-term contract), announced a firm turbine order, or been announced to proceed under utility ownership.

Wind Power Capacity Offtake Status



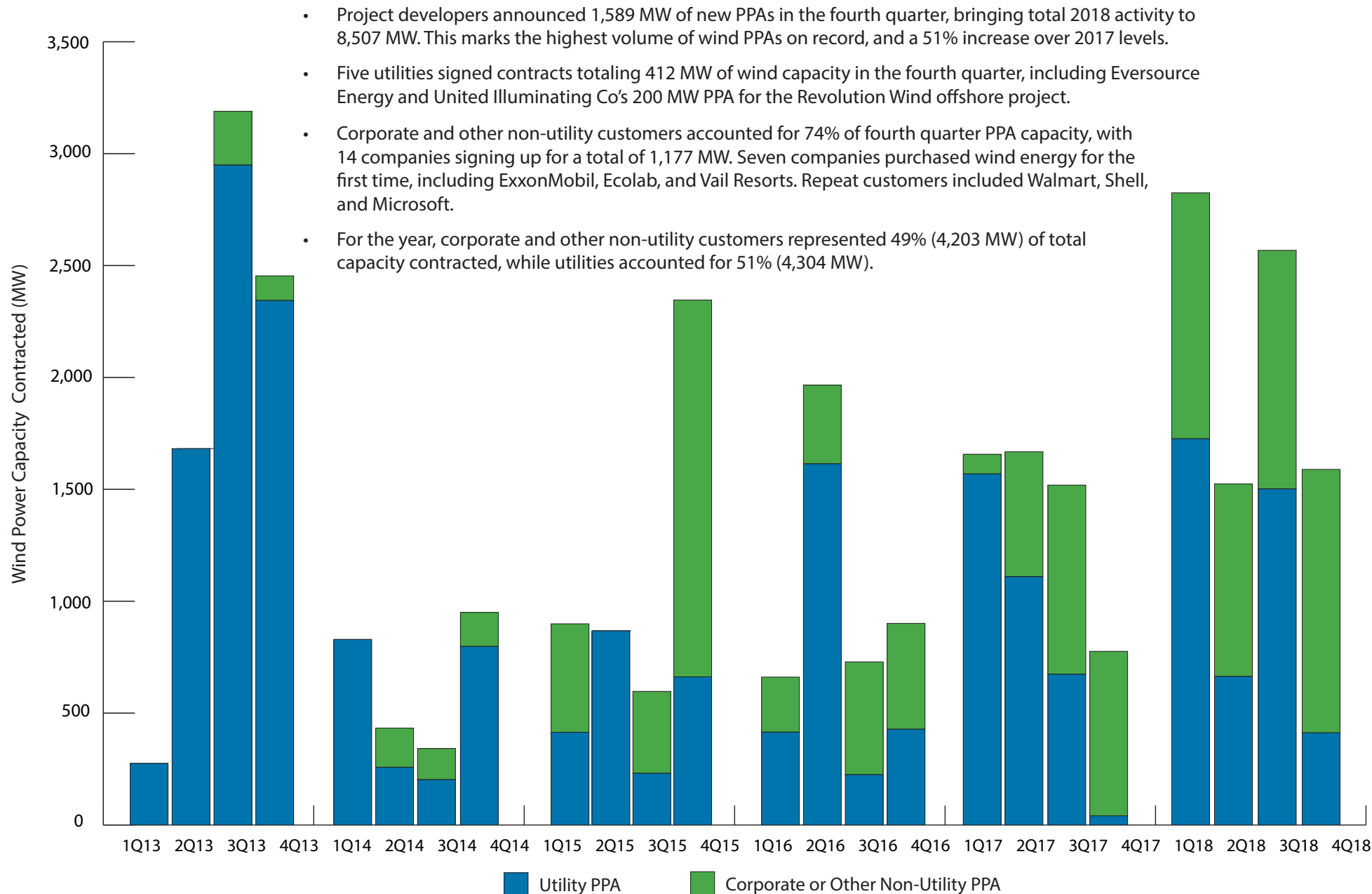
- PPAs continue to be the preferred offtake for wind projects, with 49% of capacity built in 2018 selling power under a long-term contract.
- Utilities directly own 1,509 MW (20%) of the capacity commissioned in 2018, more than double the amount this group installed in 2017. MidAmerican Energy commissioned 817 MW of its Wind XI projects in Iowa, while Xcel Energy commissioned the 600 MW Rush Creek project in CO.
- Another 20% of capacity commissioned last year has a merchant hedge contract in place, with projects concentrated in ERCOT and SPP.
- Corporate and other non-utility buyers are purchasing 26% of the capacity installed in 2018. AT&T (399 MW), Facebook (318), and the U.S. General Services Administration (140 MW) are all buying power from projects installed in the fourth quarter.
- Project developers continue to find offtake for new projects. The share of capacity with a PPA in place and capacity under direct utility ownership stayed constant from the previous quarter, even as nearly 5,800 MW in new projects entered the pipeline. The share of capacity with undisclosed offtake increased slightly from 31% to 33%.
- Sixteen utilities currently have directly-owned wind capacity under construction or in advanced development. Xcel Energy currently has the most wind capacity in the pipeline after Berkshire Hathaway and Xcel Energy each commissioned hundreds of megawatts and Xcel announced a new 500 MW project in the fourth quarter.

Top Five Utilities with Construction and Advanced Development Project Capacity (MW)

Company	Direct Ownership	Long-Term Contracts	Total Capacity
Xcel Energy	2,950	557	3,507
Berkshire Hathaway Energy	2,390	200	2,590
Alliant Energy	1,230	0	1,230
Ameren Missouri	557	0	557
Basin Electric Power Coop	0	420	420

Note: Offtake status of under construction and advanced development capacity is not necessarily reflective of final offtake status. For example, developers may still be finalizing offtake agreements.

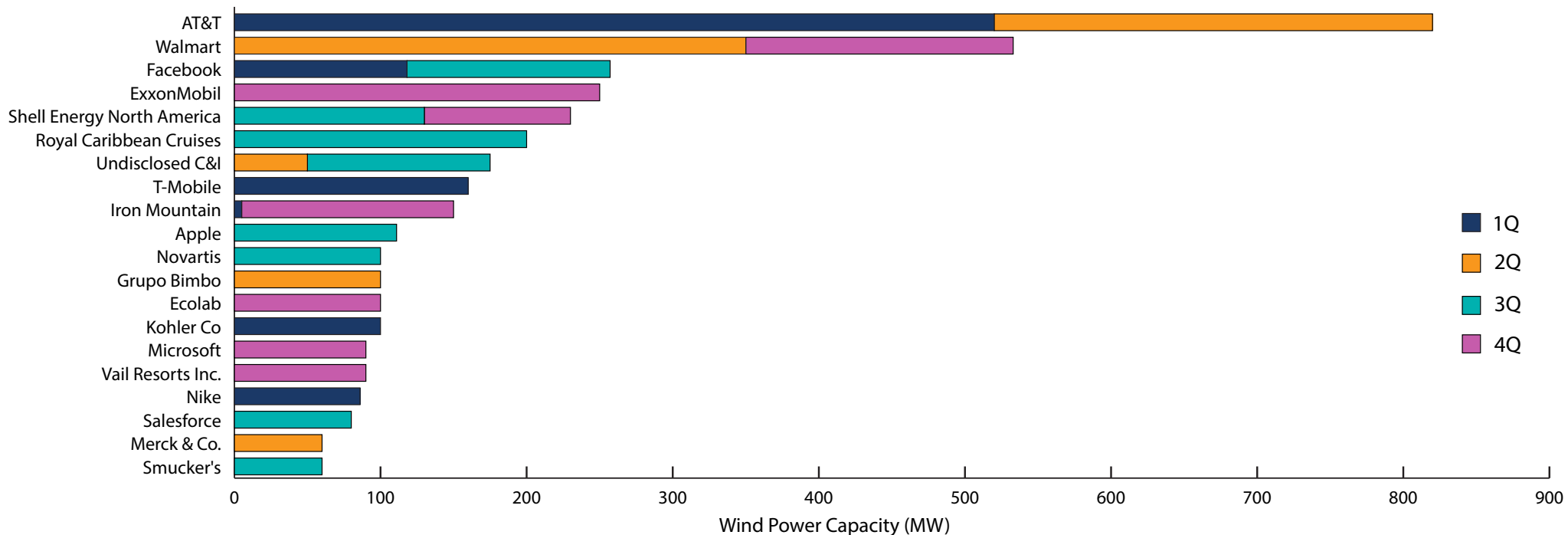
Quarterly Wind Power Purchase Agreements



- Project developers announced 1,589 MW of new PPAs in the fourth quarter, bringing total 2018 activity to 8,507 MW. This marks the highest volume of wind PPAs on record, and a 51% increase over 2017 levels.
- Five utilities signed contracts totaling 412 MW of wind capacity in the fourth quarter, including Eversource Energy and United Illuminating Co's 200 MW PPA for the Revolution Wind offshore project.
- Corporate and other non-utility customers accounted for 74% of fourth quarter PPA capacity, with 14 companies signing up for a total of 1,177 MW. Seven companies purchased wind energy for the first time, including ExxonMobil, Ecolab, and Vail Resorts. Repeat customers included Walmart, Shell, and Microsoft.
- For the year, corporate and other non-utility customers represented 49% (4,203 MW) of total capacity contracted, while utilities accounted for 51% (4,304 MW).

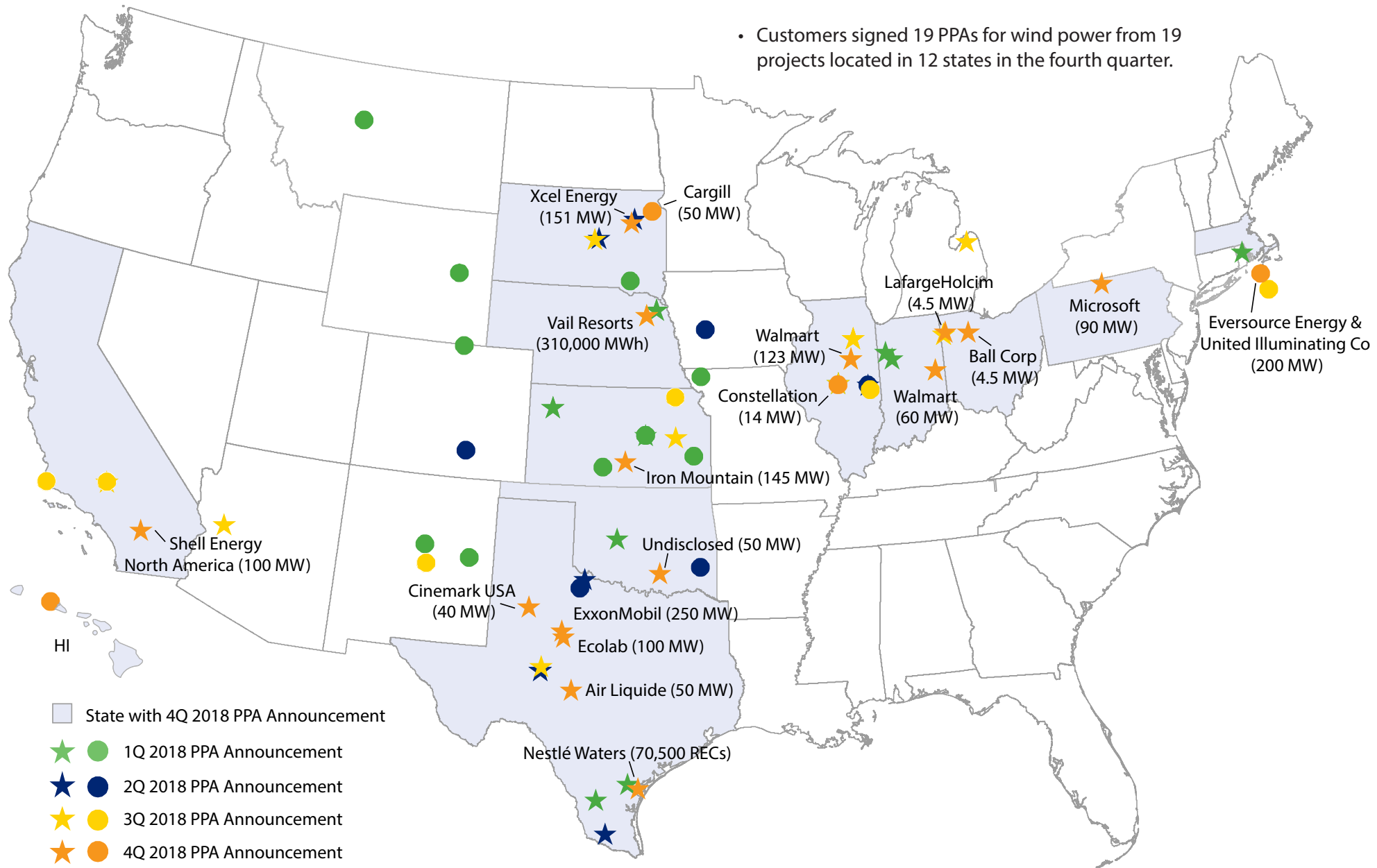
Note: PPA totals reflect the original offtaker and do not include sleeved PPAs or subsequent sales through utilities.

Non-Utility Power Purchase Agreements



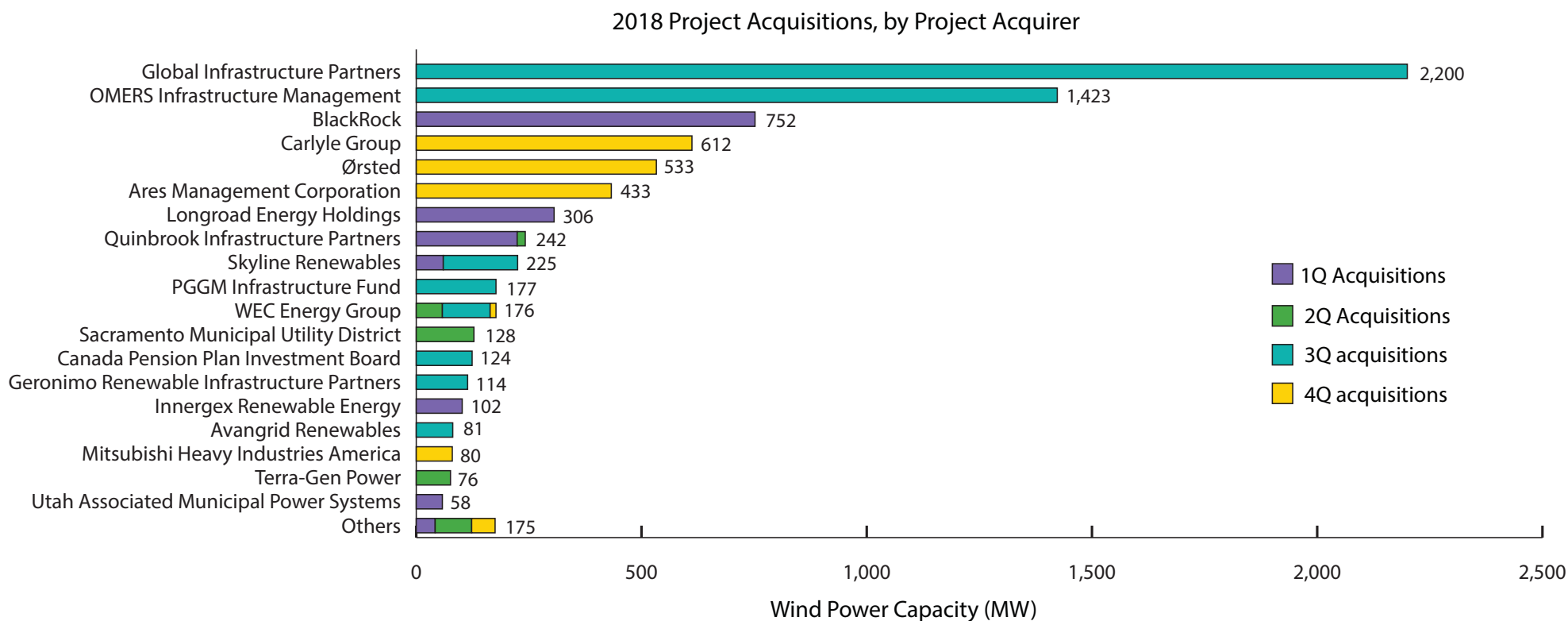
- Corporate and other non-utility customers signed contracts for a record amount of wind power in 2018, entering into agreements to procure 4,203 MW of wind capacity. This marks a 66% increase over the previous record set in 2015.
- A total of 37 non-utility buyers signed wind energy contracts in 2018, including 21 companies that purchased wind energy for the first time.
- AT&T signed contracts for 820 MW of wind energy, more than any other company in 2018. Walmart came in second with 533 MW, followed by Facebook, ExxonMobil, and Shell Energy North America. In total, 14 companies signed up for over 100 MW.
- New buyers accounted for 45% of wind capacity signed by non-utility purchasers for the year (1,880 MW). Top new buyers include AT&T, Exxon Mobil, and Royal Caribbean Cruises.
- Texas was home to the most corporate PPA deals in 2018, hosting 35% of contracted capacity. Kansas hosted 15% of corporate wind procurement announcements, while South Dakota was home to 10% of the market.
- NextEra Energy Resources signed the largest volume of corporate PPAs in 2018 with a total of 1,065 MW, followed by EDP Renewables (682 MW) and Lincoln Clean Energy (400 MW).
- To-date, non-utility buyers have signed contracts for more than 11,300 MW of wind power.

Map of Power Purchase Agreements Signed in 2018



★ Project with Non-Utility PPA Announcement ● Project with Utility PPA Announcement

Mergers & Acquisitions Activity

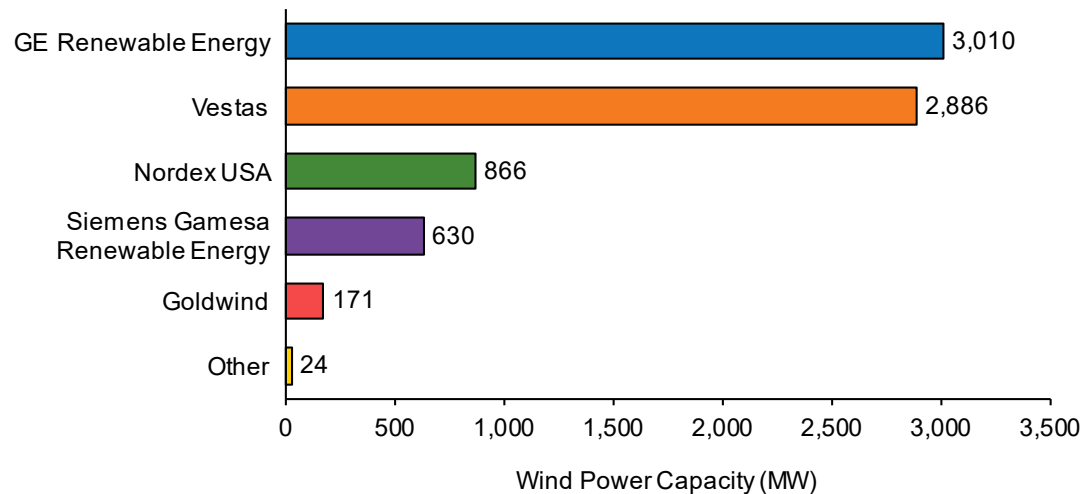


- Seven companies acquired a combined 1,723 MW in operating wind project capacity during the fourth quarter of 2018, contributing to a total of 8,013 MW for the year.
- Carlyle Group led in acquisitions for the quarter, acquiring 612 MW of wind capacity across six project phases from Noble Environmental Power.
- Offshore wind leader Ørsted completed the acquisitions of both Lincoln Clean Energy and Deepwater Wind in the fourth quarter, gaining ownership of 533 MW of wind capacity across three project phases and a large development pipeline of both land-based and offshore wind.
- In addition, AES Corp and Alberta Investment Management Corp (AIMCo) announced an agreement to sell a combined 24% stake in sPower's 1.3 GW renewable portfolio to insurance and investment firm Ullico.

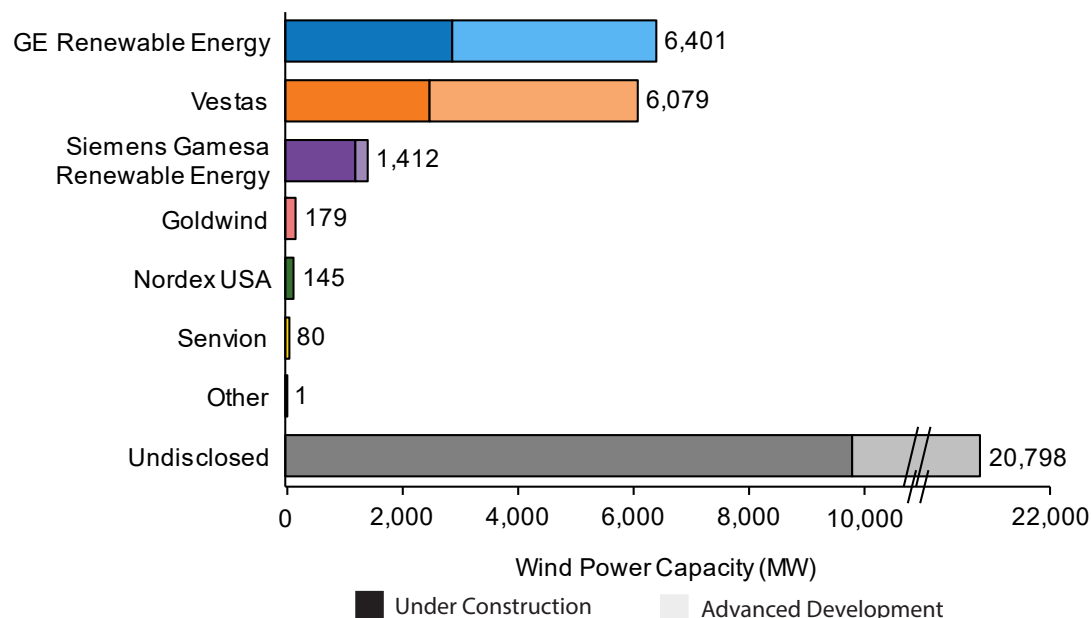
Note: Data include operating project acquisitions, and do not include projects acquired either upon or prior to commercial operation. YieldCo drop-downs are not considered project acquisitions.

Wind Turbine Manufacturer Market

Wind Turbine Manufacturer Market Share of Wind Power Capacity Installed in 2018



Wind Turbine Manufacturer Market Share of Construction and Advanced Development Wind Capacity



2018 Installations

- GE Renewable Energy reclaimed the top spot for turbine manufacturers in 2018, capturing 40% of wind turbine capacity installations. This is up from a 29% share in 2017.
- Vestas ranked second for the year with 38% of the market, a slight increase over its 35% share in 2017. Nordex USA claimed the third spot for the first time, capturing 11% of the market. Siemens Gamesa Renewable Energy ranked fourth with 8% of installations, down from 23% the previous year.
- In the fourth quarter, Vestas accounted for 41% of installations with 2,456 MW deployed. GE Renewable Energy captured 33% of fourth quarter installations, Nordex USA represented 15%, and Siemens Gamesa Renewable Energy represented 11%.

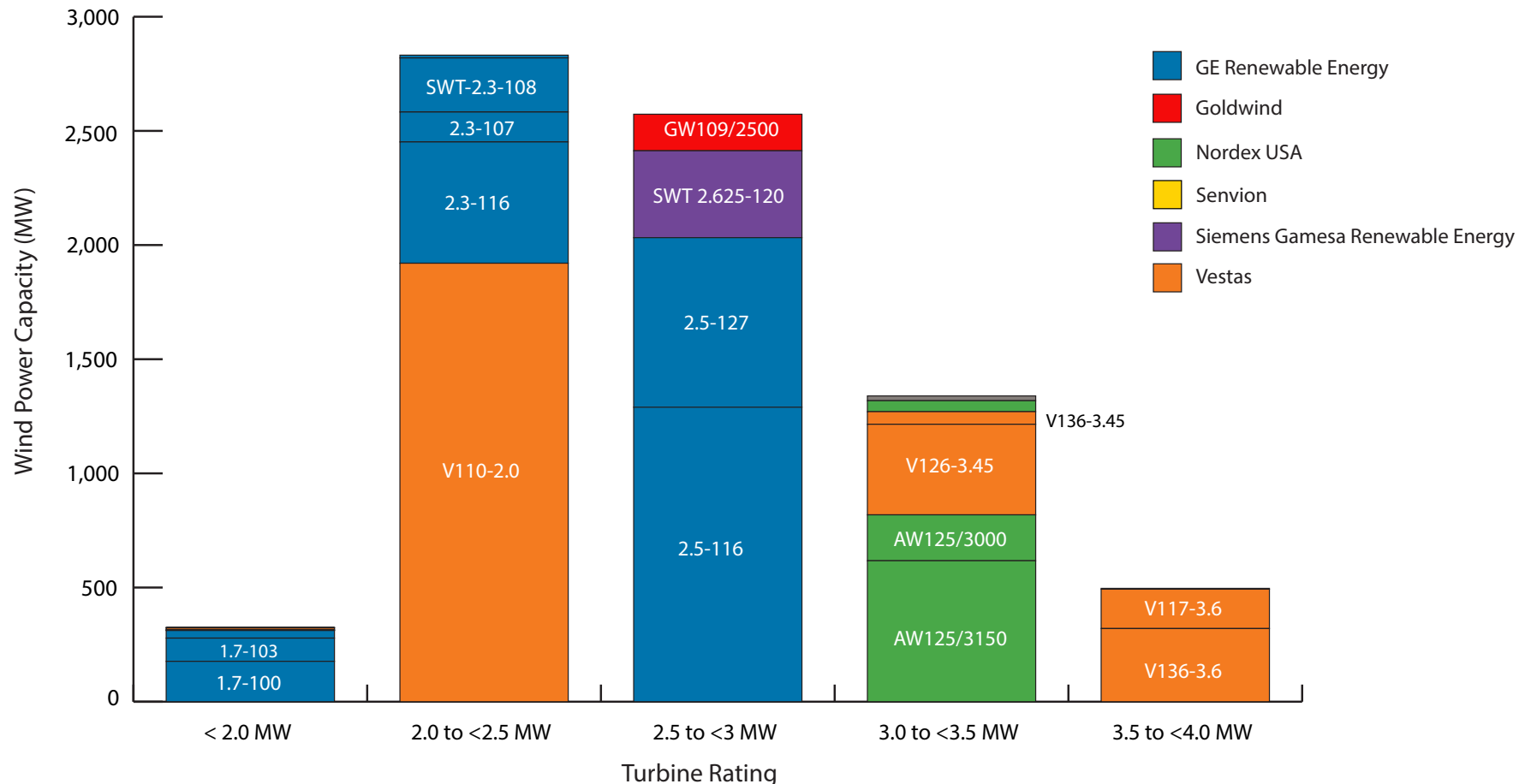
Construction and Advanced Development

- For projects under construction or in advanced development where developers have reported an OEM, GE Renewable Energy currently represents 45% of the market, followed by Vestas with 43%. Siemens Gamesa Renewable Energy sits in third with 10% of the market.
- Approximately 59% of all projects under construction or in advanced development have not yet reported a turbine manufacturer to AWEA (20,798 MW).
- Not yet reflected in the chart, Vineyard Wind named MHI Vestas as the preferred supplier for its 800 MW offshore project during the fourth quarter. These turbines will be included once there is a firm turbine order.

Turbine Technology Trends

- A total of 28 different turbine models were installed in 2018, ranging in size from 900 kW to 3.6 MW. In the fourth quarter alone, 21 different turbine models were installed, with nameplate capacities between 1.7 MW to 3.6 MW.
- Vestas' V110-2.0 model was the most popular turbine for the third year in a row, accounting for 25% of total capacity installations. GE Renewable Energy's 2.5-116 model was the second most popular turbine in 2018, representing 17% of capacity additions.
- The majority of projects installed in 2018 used turbines with a nameplate capacity between 2 MW to under 3 MW, while 24% chose turbines rated 3 MW and above.
- Three projects totaling 496 MW were commissioned in the fourth quarter with 3.5 MW or larger turbines. Prior to the fourth quarter, there were only three projects online with 3.5 MW or larger turbines, including the Block Island Offshore Wind project.

Wind Turbine Model Volumes for Projects Commissioned in 2018



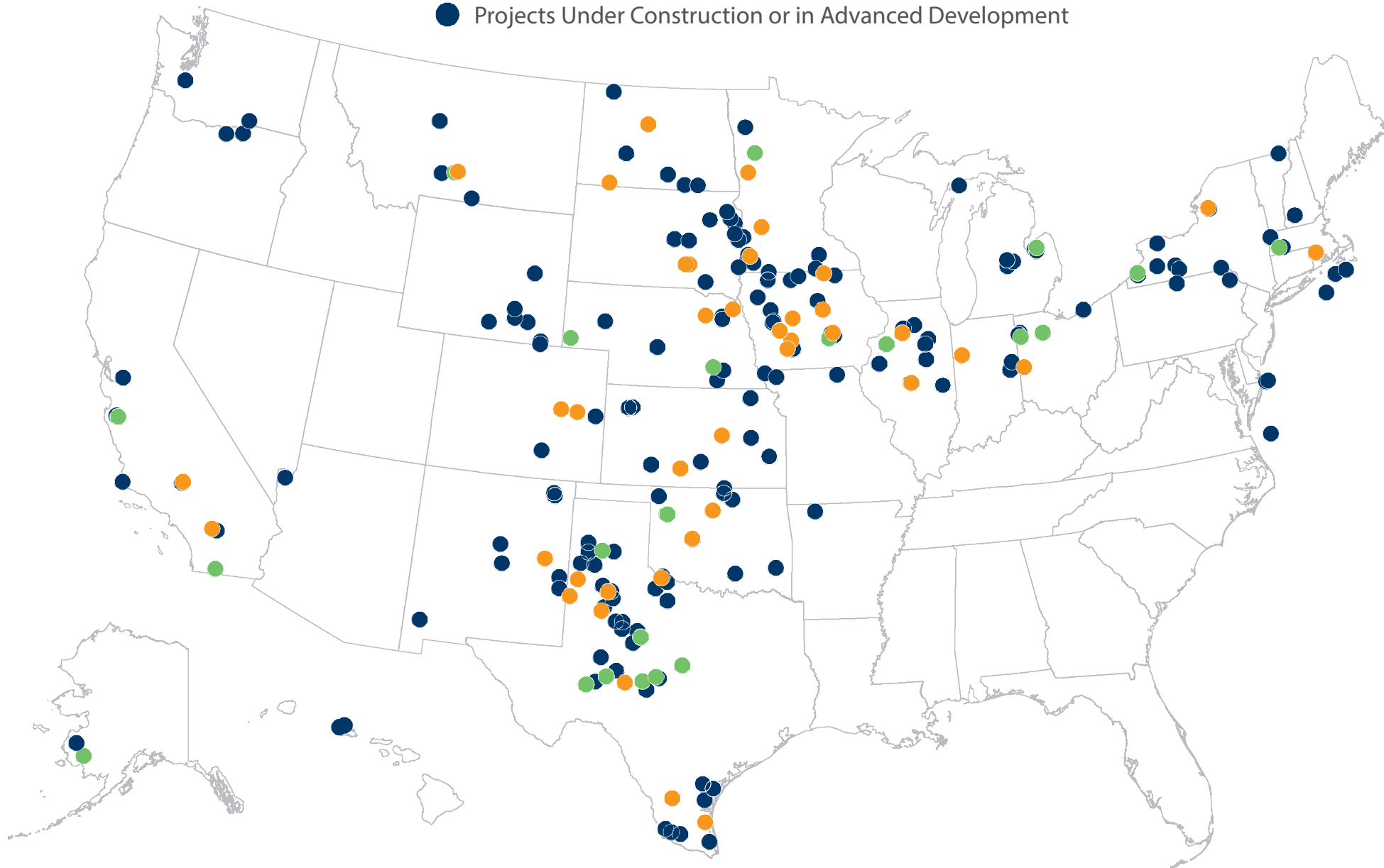
U.S. Offshore Wind Energy Activity

State RFP Project Winners					
RFP State	Project Name	Project Capacity (MW)	Project Developer	Project Location	Power Purchaser
Massachusetts	Vineyard Wind	800	Avangrid Renewables; Copenhagen Infrastructure Partners	Offshore Massachusetts	Eversource Energy, National Grid, Unitil
Rhode Island	Revolution Wind	400	Ørsted US Offshore Wind	Area of Mutual Interest between RI & MA	National Grid
Connecticut	Revolution Wind	300	Ørsted US Offshore Wind	Area of Mutual Interest between RI & MA	Eversource Energy and United Illuminating Co
Maryland	Maryland Offshore Wind Project	248	U.S. Wind Inc	Offshore Maryland	Maryland PSC (ORECs)
Maryland	Skipjack Wind Farm	120	Ørsted US Offshore Wind	Offshore Delaware	Maryland PSC (ORECs)

- The fourth quarter capped off an active year for the U.S. offshore wind industry with a competitive offshore lease auction, a new state target, 800 MW of solicitations announced, and 200 MW of PPAs signed.
- In October, Virginia Governor Northam released the 2018 Virginia Energy Plan, calling for 2,000 MW of offshore wind by 2028. The following month, Virginia regulators approved Dominion Energy's 12 MW Coastal Virginia Offshore Wind Project.
- In November, Ørsted acquired Deepwater Wind and merged their assets to form Ørsted US Offshore Wind. The newly formed company now has the largest offshore pipeline in the U.S. with 8.8 GW of potential capacity.
- Also in November, New York issued its first large-scale solicitation seeking at least 800 MW of offshore wind. Awards will be announced in spring 2019.
- In December, BOEM held an auction for three offshore wind lease areas off the coast of Massachusetts. After 32 rounds of bidding, the lease areas were awarded to Equinor, Mayflower Wind Energy (a Shell and EDPR Joint Venture), and Vineyard Wind for a total of \$405.1 million. Each lease reached \$135 million, far surpassing the previous lease record of \$42.5 million.
- The same month, Shell New Energies and EDF Renewables formed a 50/50 joint venture called Atlantic Shores Offshore Wind with plans to acquire US Wind's lease off of New Jersey for \$215 million.
- In December, the Connecticut PUC approved Ørsted US Offshore Wind's 20 year PPA with Eversource Energy and United Illuminating Co for 200 MW of the Revolution Wind offshore project. Soon after, the Connecticut Department of Energy and Environmental Protection selected an additional 100 MW of Revolution Wind as one of the winners of its zero carbon RFP.
- At the end of the year, the New Jersey Board of Public Utilities received bids from Ørsted, Atlantic Shores Offshore Wind, and Equinor in response to its solicitation for 1.1 GW of offshore wind.

Map of Projects Online during 2018, Under Construction, or in Advanced Development

- Projects Online 1Q - 3Q 2018
- Projects Online 4Q 2018
- Projects Under Construction or in Advanced Development



Utility-Scale Wind Projects Completed in 2018

State	Project Phase Name	Project Capacity (MW)	Turbine OEM	Turbine Model	Project Developer	Project Owner	Power Purchaser
First Quarter 2018							
CA	Tule	131.10	GE Renewable Energy	2.3-107	Avangrid Renewables	Avangrid Renewables	Southern California Edison
IA	Prairie II	4.00 (of 168.00)	Vestas	V110-2.0	RPM Access Wind Development; MidAmerican Energy	MidAmerican Energy	MidAmerican Energy Co
MA	Otis Wind Energy Project	1.50	VENSYS	VENSYS 82	SunCommon; Town of Otis	Town of Otis	Town of Otis, Excess to Eversource Energy
MI	Cross Winds Energy Park II	43.70	GE Renewable Energy	2.3-116	Consumers Energy	Consumers Energy	Consumers Energy
MN	White Earth Tribe	0.75	Refurbished Zond		White Earth Nation	White Earth Nation	Minnkota Power Coop
MT	Big Timber	25.00	GE Renewable Energy	1.7-100	BayWa r.e. Wind LLC	BayWa r.e. Wind LLC	NorthWestern Energy
TX	Flat Top	200.00	Vestas	V110-2.0	Innergex Renewable Energy	Innergex Renewable Energy; BlackRock	Merchant Hedge Contract (ERCOT) (170 MW); Merchant Hedge Contract, Resold to QTS Realty Trust (30 MW)
Second Quarter 2018							
IL	Bishop Hill III	132.00	GE Renewable Energy	2.3-116; 2.5-116	Invenergy	Invenergy	WPPI Energy
NE	Kimball Wind Farm	30.00	GE Renewable Energy	2.5-116	Aspenall Energies	Aspenall Energies	Municipal Energy Agency of NE
TX	Rattlesnake Wind	160.00	Goldwind	GW109/2500	Goldwind Americas; RES Americas	Goldwind Americas	Merchant Hedge Contract (ERCOT)
TX	Santa Rita	300.00	GE Renewable Energy	2.5-116	Invenergy	BHE Renewables	Kimberly-Clark (125 MW); City of Denton, TX (175 MW)
TX	UL Advanced Wind Turbine Test Facility	3.57	Goldwind	GW 3MW(S)	Goldwind Americas	West Texas A&M University	Xcel Energy
Third Quarter 2018							
AK	Bethel Wind Turbine	0.90	EWT Americas	DW-52-900	Alaska Village Electric Coop	Alaska Village Electric Coop	Alaska Village Electric Coop
CA	Correctional Training Facility	1.7	GE Renewable Energy	1.7-100	Foundation Windpower	Foundation Windpower	Correctional Training Facility, Excess to Pacific Gas & Electric
CA	Salinas Valley State Prison	1.7	GE Renewable Energy	1.7-100	Foundation Windpower	Foundation Windpower	Salinas Valley State Prison, Excess to Pacific Gas & Electric
NE	Perennial Wind	6.90	GE Renewable Energy	2.3-116	Bluestem Energy Solutions	Bluestem Energy Solutions	Perennial Public Power Dist
NY	Arkwright Summit	78.40	Vestas	V110-2.0	EDP Renewables North America LLC	EDP Renewables North America LLC	Bloomberg (20 MW); Merchant (NYSERDA) (58.4 MW)
OH	Northwest Ohio	105.00	GE Renewable Energy	2.5-116	Trishe Resources, Inc.; Starwood Energy	Starwood Energy	General Motors
OH	Valfilm Wind	3.00	Goldwind	GW87/1500	One Energy LLC	One Energy LLC	Valfilm, Excess to AEP Generating Company

Utility-Scale Wind Projects Completed in 2018

State	Project Phase Name	Project Capacity (MW)	Turbine OEM	Turbine Model	Project Developer	Project Owner	Power Purchaser
OK	Persimmon Creek I	198.60	GE Renewable Energy	2.3-116; 2.5-116	Scout Clean Energy	Quinbrook Infrastructure Partners; Elawan Wind	Merchant Hedge Contract (SPP)
TX	Cactus Flats	148.35	Vestas	V126-3.45	RES Americas	Southern Power	General Motors (50 MW); General Mills (98.35 MW)
TX	Desert Sky (Repowering)	38.67	GE Renewable Energy	1.7-103; 1.85-87.5	AEP; Invenergy	AEP Energy Partners; Invenergy	City of San Antonio
TX	Trent Mesa (Repowering)	29.17	GE Renewable Energy	1.7-100; 1.7-103	AEP; Invenergy	AEP Energy Partners; Invenergy	Undisclosed
Fourth Quarter 2018							
CA	Nestle Waters II	1.85	GE Renewable Energy	1.85-82.5	Foundation Windpower	Foundation Windpower	Nestle Waters
CA	Voyager II	193.50	Vestas	V112-3.45; V117-3.6	Terra-Gen Power	Terra-Gen Power	Shell Energy North America (130 MW) Marin Clean Energy (42 MW) Unknown (21.5 MW)
CO	Rush Creek I	400.00	Vestas	V110-2.0	Invenergy	Xcel Energy	Public Service Co of Colorado
CO	Rush Creek II	200.00	Vestas	V110-2.0	Invenergy	Xcel Energy	Public Service Co of Colorado
IL	HillTopper	185.00	GE Renewable Energy	2.5-116	Swift Current Energy; Enel Green Power North America	Enel Green Power North America	General Motors (100 MW); Bloomberg (17 MW); Constellation, resold to Comcast Spectacor (9MW)
IL	Walnut Ridge	212.00	Vestas	V110-2.0	Geronimo Energy; BHE Renewables	BHE Renewables	General Services Administration (140 MW)
IN	Meadow Lake VI	200.40	Vestas	V110-2.0; V136-3.45; V136-3.6	EDP Renewables North America LLC	EDP Renewables North America LLC	Cummins (75 MW); Nestle (50 MW) Wabash Valley Power (75.4 MW)
IA	Arbor Hill	250.00	Vestas	V110-2.0	MidAmerican Energy	MidAmerican Energy	MidAmerican Energy Co
IA	Beaver Creek II	170.00	Vestas	V110-2.0	MidAmerican Energy	MidAmerican Energy	MidAmerican Energy Co
IA	Heartland Divide	103.50	GE Renewable Energy	1.7-100; 2.5-127	NextEra Energy Resources	NextEra Energy Resources	Central Iowa Power Cooperative
IA	Ivester	90.83	Siemens Gamesa Renewable Energy	SWT-2.415-108; SWT-2.625-120	EDF Renewables	MidAmerican Energy	MidAmerican Energy Co
IA	North English	200.00	Vestas	V110-2.0	Tradewind Energy	MidAmerican Energy	MidAmerican Energy Co
IA	Orient I	102.00	Vestas	V110-2.0	Invenergy; MidAmerican Energy	MidAmerican Energy	MidAmerican Energy Co
IA	Turtle Creek	199.20	Vestas	V136-3.6; V136-3.45	EDP Renewables North America LLC	EDP Renewables North America LLC	Interstate Power and Light Co
KS	Diamond Vista	299.25	Nordex USA	AW125/3150	Enel Green Power North America, Tradewind Energy	Enel Green Power North America	Kohler Co (100 MW); City Utilities of Springfield (97.65 MW); Tri-County Electric Coop of OK (83.6 MW)

Utility-Scale Wind Projects Completed in 2018

State	Project Phase Name	Project Capacity (MW)	Turbine OEM	Turbine Model	Project Developer	Project Owner	Power Purchaser
KS	Pratt Wind Energy Center	243.80	GE Renewable Energy; Siemens Gamesa Renewable Energy	2.3-116; SWT-2.3-108	NextEra Energy Resources	NextEra Energy Resources	Great Plains Energy
MN	Palmer's Creek	44.60	GE Renewable Energy	2.3-116; 2.5-116	Fagen Engineering	Fagen Engineering	Merchant (MISO)
MN	Stoneray	34.13	Siemens Gamesa Renewable Energy	SWT-2.625-120	EDF Renewables	EDF Renewables	Southern Minnesota Municipal Power Agency
MN	Trondhjem (Wind-Solar Hybrid)	1.7	GE Renewable Energy	2.0-116	Juhl Energy	Juhl Energy	Lake Region Electric Cooperative (MN)
MN	Woodstock Hills Repower	9.2	GE Renewable Energy	2.3-116	Con Edison Development	Con Edison Development	Northern States Power Co - Minnesota
MT	Stillwater Big Sky	79.75	Siemens Gamesa Renewable Energy	SWT-2.3-108; SWT-2.625-120	WKN Montana II, LLC; Pattern Energy Group	Pattern Energy Group	NorthWestern Energy
NE	Rattlesnake Creek	318.15	Nordex USA	AW125/3150	Tradewind Energy; Enel Green Power North America	Enel Green Power North America	Facebook (318.15 MW); Adobe Systems (10 MW)
NE	Upstream	202.50	GE Renewable Energy	2.5-116	Invenergy	Invenergy	Allianz Risk Transfer
NM	Casa Mesa	50.90	GE Renewable Energy	1.7-100; 2.5-127	NextEra Energy Resources	NextEra Energy Resources	Public Service Co of NM
NY	Copenhagen	80.00	Vestas	V110-2.0	EDF Renewables	EDF Renewables	Narragansett Electric Company
ND	New Frontier	100.05	Vestas	V126-3.45	Capital Power	Capital Power	Merchant Hedge Contract (MISO)
ND	Thunder Spirit II	48.00	Nordex USA	N117/3000	ALLETE Clean Energy	Montana-Dakota Utilities	Montana-Dakota Utilities Co
OH	Whirlpool Corporation - Greenville Wind Farm	4.50	Goldwind	GW87/1500	One Energy LLC	One Energy LLC	Whirlpool Corporation, Excess to Dayton Power & Light
OK	Armadillo Flats	247.28	GE Renewable Energy	1.7-100; 1.7-103; 2.3-116	NextEra Energy Resources	NextEra Energy Resources	Merchant (SPP)
OK	Minco IV	129.88	GE Renewable Energy	1.7-100; 1.7-103; 2.3-116; 2.5-116	NextEra Energy Resources	NextEra Energy Resources	Undisclosed
RI	WED Green Hill	3.00	VENSYS	VENSYS 120	Green Development LLC	Green Development LLC	
RI	WED Plainfield	3.00	VENSYS	VENSYS 120	Green Development LLC	Green Development LLC	National Grid Generation, LLC
RI	WED Plainfield II	3.00	VENSYS	VENSYS 120	Green Development LLC	Green Development LLC	
RI	WED Plainfield III	3.00	VENSYS	VENSYS 120	Green Development LLC	Green Development LLC	
RI	WED Shun I	3.00	VENSYS	VENSYS 120	Green Development LLC	Green Development LLC	
RI	WED Shun II	3.00	VENSYS	VENSYS 120	Green Development LLC	Green Development LLC	Rhode Island Conventer Center Authority
RI	WED Shun III	3.00	VENSYS	VENSYS 120	Green Development LLC	Green Development LLC	National Grid Generation, LLC
SD	Aurora County Wind	20.70	GE Renewable Energy	2.3-116	Con Edison Development	Con Edison Development	NorthWestern Energy

Utility-Scale Wind Projects Completed in 2018

State	Project Phase Name	Project Capacity (MW)	Turbine OEM	Turbine Model	Project Developer	Project Owner	Power Purchaser
SD	Brule County Wind	20.70	GE Renewable Energy	2.3-116	Con Edison Development	Con Edison Development	NorthWestern Energy
TX	Blue Cloud I	148.35	Vestas	V126-3.45	Tri Global Energy	Copenhagen Infrastructure Partners	Merchant Hedge Contract (SPP)
TX	Blue Summit II	99.36	GE Renewable Energy	1.7-103	NextEra Energy Resources	NextEra Energy Resources	AT&T
TX	Live Oak	200.00	Siemens Gamesa Renewable Energy	SWT-2.625-120	ENGIE North America	ENGIE North America	Merchant Hedge Contract (ERCOT)
TX	Lorenzo Winds	80.46	GE Renewable Energy	1.7-103; 2.3-116	NextEra Energy Resources, Tri Global Energy	NextEra Energy Resources	Southwestern Public Service Co
TX	Stella	201.00	Nordex USA	AW125/3000	E.ON Climate & Renewables	E.ON Climate & Renewables	
TX	Tahoka Wind	300.00	GE Renewable Energy	2.5-127	Lincoln Clean Energy	Lincoln Clean Energy	Merchant Hedge Contract (ERCOT)
TX	Torrecillas	300.00	GE Renewable Energy	2.5-127	NextEra Energy Resources	NextEra Energy Resources	AT&T
TX	Wildcat Ranch	150.59	GE Renewable Energy	1.7-103; 2.3-116	NextEra Energy Resources	NextEra Energy Resources	Southwestern Public Service Co

Utility-Scale Wind Projects Partially Repowered in 2018

State	Project Phase Name	Number of Turbines Repowered	Original Project Capacity (MW)	Final Project Capacity (MW)	Turbine OEM	Original Turbine Model	Final Turbine Model	Project Owner
IA	Charles City	50	75.00	75.00	GE Renewable Energy	GE 1.5-77	GE 1.5-91.5; GE 1.6-91.5	MidAmerican
ND	Langdon I	66 (of 79)	99.00 (of 118.5)	106.9 (of 126.4)	GE Renewable Energy	GE 1.5-77	GE 1.5-87; GE 1.62-91	NextEra Energy Resources
ND	Langdon II	27	40.50	43.74	GE Renewable Energy	GE 1.5-77	GE 1.62-91	NextEra Energy Resources
NM	New Mexico Wind Energy Center	134 (of 136)	201.00 (of 204)	201.00 (of 204)	GE Renewable Energy	GE 1.5-70.5	GE 1.5-87	NextEra Energy Resources
OK	Elk City II	66	100.80	101.16	Siemens Gamesa Renewable Energy	GE 1.5-82.5; GE 1.6-82.5	GE 1.5-91; GE 1.62-91	NextEra Energy Resources
TX	Trent Mesa	83	124.50	124.50	GE Renewable Energy	Enron 1.5-70.5	GE 1.5-82.5	AEP; Invenergy
TX	Desert Sky	86	129.00	129.00	GE Renewable Energy	Enron 1.5-70.5	GE 1.5-82.5	AEP; Invenergy
TX	Indian Mesa	124 (of 125)	81.84 (of 82.5)	81.84 (of 82.5)	Siemens Gamesa Renewable Energy	Vestas V47	SGRE G47 660 kW	NextEra Energy Resources
TX	King Mountain	167 (of 214)	217.10 (of 278.2)	217.10 (of 278.2)	Siemens Gamesa Renewable Energy	Bonus 1.3	SGRE 1.3-65	NextEra Energy Resources
TX	Woodward Mountain I and II	238 (of 240)	157.08 (of 158.4)	157.08 (of 158.4)	Siemens Gamesa Renewable Energy	Vestas V47	SGRE G47 660 kW	NextEra Energy Resources

Utility-Scale Wind Power Projects Under Construction

State	Project Phase Name	Project Capacity (MW)	Turbine OEM	Turbine Model	Project Developer	Project Owner	Power Purchaser
AK	St. Mary's Wind Turbine	0.90	EWT Americas	DW-52-900	Alaska Village Electric Cooperative	Alaska Village Electric Cooperative	Alaska Village Elec Coop, Inc
AR	Nimbus	180.00			Scout Clean Energy	Scout Clean Energy	
IL	Bright Stalk	203.00	Vestas	V136-3.6	EDP Renewables North America LLC	EDP Renewables North America LLC	Salesforce (80 MW); Undisclosed
IL	Broadlands	199.80	Vestas	V136-3.7; V150-4.3	EDP Renewables North America LLC	EDP Renewables North America LLC	Wabash Valley Power Assn (99.8 MW); Undisclosed C&I (50 MW); Undisclosed Utility (50 MW)
IL	Green River	212.00			Geronimo Energy	Geronimo Energy	
IL	Mendota Hills Repowering	76.00	Siemens Gamesa Renewable Energy	SG2.6-126	Leeward Renewable Energy Development, LLC	Leeward Renewable Energy, LLC	Digital Realty
IL	Otter Creek	158.00	Vestas	V136-3.45	Avangrid Renewables	Avangrid Renewables	
IN	Bitter Ridge	130.00			Scout Clean Energy	Scout Clean Energy	
IA	English Farms	170.30	GE Renewable Energy	2.3-116; 2.5-127	Interstate Power and Light Co; Tradewind Energy	Interstate Power and Light Co	Interstate Power and Light Co
IA	Glaciers Edge	203.00			EDF Renewables	EDF Renewables	Google Energy
IA	Golden Plains	200.00	GE Renewable Energy	2.5-127	EDF Renewables	EDF Renewables	Interstate Power and Light Co
IA	Orient II	398.80	Vestas	V110-2.0; V110-2.2	MidAmerican Energy	MidAmerican Energy	MidAmerican Energy Co
IA	Saratoga	66.00	Vestas	V116-2.0	Madison Gas & Electric Co	Madison Gas & Electric Co	Madison Gas & Electric Co
IA	Silver Queen	180.00			Scout Clean Energy	Scout Clean Energy	
IA	Triumph	150.00			Scout Clean Energy	Scout Clean Energy	
IA	Upland Prairie	299.30	GE Renewable Energy	2.3-116; 2.5-116	Apex Clean Energy; Interstate Power and Light Co	Interstate Power and Light Co	Interstate Power and Light Co
KS	East Fork	196.00	GE Renewable Energy		ENGIE North America	ENGIE North America	Brown-Forman (30 MW); Merchant Hedge Contract (SPP) (166 MW)
KS	Prairie Queen	199.28	Siemens Gamesa Renewable Energy	SG 2.625-126; SG 3.55-132	EDP Renewables North America LLC	EDP Renewables North America LLC	Great Plains Energy
KS	Solomon Forks	276.00	Siemens Gamesa Renewable Energy	SG 2.625-120	ENGIE North America	ENGIE North America	Target (100 MW); T-Mobile (160 MW)
MA	Holiday Hill Community Wind	5.00	Goldwind	GW109/2500	VERA Renewables; All Earth Renewables	Holiday Hill Community Wind LLC	
MI	Pegasus	141.10	GE Renewable Energy	2.3-116; 2.5-116	NextEra Energy Resources	NextEra Energy Resources	Michigan Public Power Agency (100.3 MW)

Note: 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.

Utility-Scale Wind Power Projects Under Construction

State	Project Phase Name	Project Capacity (MW)	Turbine OEM	Turbine Model	Project Developer	Project Owner	Power Purchaser
MI	Pine River	161.30	GE Renewable Energy	2.3-116; 2.5-116	Invenergy	DTE Energy	The DTE Electric Company
MN	Stoneray II	65.00	Siemens Gamesa Renewable Energy	SWT-2.625-120	EDF Renewable Energy	EDF Renewable Energy	Southern Minnesota Municipal Power Agency
MN	Three Waters	200.00			Scout Clean Energy	Scout Clean Energy	
NE	Milligan 3	74.00	Vestas		Aksamit Resource Management	Aksamit Resource Management	Undisclosed
NE	Sholes	160.00	GE Renewable Energy	1.7-103; 2.5-116	NextEra Energy Resources	NextEra Energy Resources	Omaha Public Power District
NE	Sugar Loaf	100.00			Tri Global Energy	Tri Global Energy	
NM	Don Carlos I	180.00	GE Renewable Energy		Gallegos Wind Farm LLC	Gallegos Wind Farm LLC	
NM	Don Carlos II	50.00			Gallegos Wind Farm LLC	Gallegos Wind Farm LLC	
NM	Gallegos I	200.00			Gallegos Wind Farm LLC	Gallegos Wind Farm LLC	
NM	Gallegos II	300.00			Gallegos Wind Farm LLC	Gallegos Wind Farm LLC	
NM	Grady	220.50	Siemens Gamesa Renewable Energy	SWT-2.625-120	Pattern Energy Group LP; National Renewable Solutions	Pattern Energy Group LP	Sacramento Municipal Util Dist
NM	Great Divide	250.00			Scout Clean Energy	Scout Clean Energy	
ND	Clean Energy 1	106.00	GE Renewable Energy		ALLETE Clean Energy	ALLETE Clean Energy	Northern States Power Co - MN
ND	Foxtail Wind	150.00	Vestas	V110-2.0; V120-2.0	NextEra Energy Resources	Xcel Energy	Northern States Power Co - MN
OH	Autoliv - Findlay Wind	3.00	Goldwind	GW87/1500	One Energy LLC	One Energy LLC	Autoliv-Nissin, Excess to AEP
OH	Timber Road IV	125.00	Vestas	V136-3.7; V136-4.2	EDP Renewables North America LLC	EDP Renewables North America LLC	Undisclosed C&I Buyers
OH	Zephyr Wind Project 2.0	4.5	Goldwind	GW87/1500	One Energy LLC	One Energy LLC	Ball Corporation, Excess to AEP Generating Company
OK	Chilocco	200.00	GE Renewable Energy	2.5-127	Chilocco Wind Farm LLC	PNE Wind USA	
OK	Frontier II	200.00			Duke Energy	Duke Energy	
OK	Frontier III	152.00			Duke Energy	Duke Energy	
OK	Minco V	220.00	GE Renewable Energy	1.7-100; 1.7-103; 2.3-116; 2.5-116	NextEra Energy Resources	NextEra Energy Resources	AT&T
OK	Mistletoe	250.00			Scout Clean Energy	Scout Clean Energy	
OK	Nemaha	200.00			Duke Energy	Duke Energy	
OK	Persimmon Creek II	165.00			Scout Clean Energy	Scout Clean Energy	
OR	Montague	200.85	Vestas	V136-3.45	Avangrid Renewables	Avangrid Renewables	Apple
PA	Big Level	90.00			TransAlta Renewables	TransAlta Renewables	Microsoft

Note: 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.

Utility-Scale Wind Power Projects Under Construction

State	Project Phase Name	Project Capacity (MW)	Turbine OEM	Turbine Model	Project Developer	Project Owner	Power Purchaser
SD	Crocker	200.00			Geronimo Energy	Geronimo Energy	Walmart (150 MW); Cargill (50 MW)
SD	Sweetland	157.50			Scout Clean Energy	Scout Clean Energy	
SD	Unnamed Duke Energy Project	50.00			Duke Energy	Duke Energy	
TX	Blue Summit III	201.00	GE Renewable Energy		NextEra Energy Resources	NextEra Energy Resources	AT&T
TX	Canadian Breaks	200.10	Siemens Gamesa Renewable Energy	SWT-2.3-108	Macquarie Capital (USA) Inc.	Macquarie Capital (USA) Inc.	Merchant Hedge Contract (ERCOT)
TX	Canyon Wind	360.00			Tri Global Energy;	Tri Global Energy	
TX	Changing Winds I	240.00			Tri Global Energy	Tri Global Energy	
TX	Changing Winds II	231.00			Tri Global Energy	Tri Global Energy	
TX	Cone Wind	300.00			Tri Global Energy;	Tri Global Energy	
TX	Coyote	242.00			EDF Renewables	EDF Renewables	Merchant Hedge Contract (ERCOT)
TX	Crosby County III	120.00			Tri Global Energy	Tri Global Energy	
TX	Easter	300.00			Tri Global Energy	Tri Global Energy	
TX	Goodnight	240.00			Tri Global Energy	FGE Power	
TX	Gopher Creek	158.00	Vestas	V116-2.0	Tri Global Energy	Terna Energy	Merchant Hedge Contract (ERCOT)
TX	Hale Wind	478.00	Vestas	V110-2.0; V116-2.0	Tri Global Energy, NextEra Energy Resources	Xcel Energy	Southwestern Public Service Co
TX	Hidalgo II	50.40	Vestas	V136-3.6	EDP Renewables North America LLC	EDP Renewables North America LLC	Undisclosed
TX	Karankawa	307.06			Avangrid Renewables	Avangrid Renewables	Austin Energy (200 MW); Nike (86 MW)
TX	Lockett	184.00	GE Renewable Energy	2.5-127	Lincoln Clean Energy	Lincoln Clean Energy	Merchant Hedge Contract (ERCOT) (147 MW)
TX	Mariah East	152.50	GE Renewable Energy	2.5-116	High Road Clean Energy	Mariah Acquisition	Merchant Hedge Contract (ERCOT)
TX	Maryneal	180.00			Duke Energy	Duke Energy	
TX	Mesteno	200.00			Duke Energy	Duke Energy	
TX	Midway	162.85	Siemens Gamesa Renewable Energy	G132-3.465	Apex Clean Energy; ENGIE North America	Sammons Renewable Energy	Nestle (~20 MW); Merchant Hedge Contract (ERCOT)
TX	Palmas Altas	144.90	Nordex USA	AW125/3150	Acciona Energy	Acciona Energy	Merchant (ERCOT)
TX	Ranchero	300.00			Scout Clean Energy	Scout Clean Energy	

Note: 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.

Utility-Scale Wind Power Projects Under Construction

State	Project Phase Name	Project Capacity (MW)	Turbine OEM	Turbine Model	Project Developer	Project Owner	Power Purchaser
TX	Rio Bravo	237.60	Vestas	V136-3.45	Longroad Energy, Steelhead Americas	Longroad Energy Partners	Merchant Hedge Contract (ERCOT)
TX	Santa Rita East	300.00	GE Renewable Energy		Invenergy	Invenergy	Grupo Bimbo (100 MW); Merck & Co (60 MW); Novartis (100 MW)
TX	Seymour Hills	30.00			ENGIE North America	ENGIE North America	Akamai Technologies (8MW); Ingersoll Rand (22 MW)
WA	Horse Heaven	120.00			Scout Clean Energy	Scout Clean Energy	
WY	Chokecherry and Sierra Madre Wind Energy Project	3,000.00			Power Company of Wyoming	Power Company of Wyoming	

Note: 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.

Utility-Scale Wind Power Projects in Advanced Development

State	Project Phase Name	Project Capacity (MW)	Turbine OEM	Turbine Model	Project Developer	Project Owner	Power Purchaser
AZ	Tucson	100.00	GE Renewable Energy		NextEra Energy Resources	NextEra Energy Resources	Tucson Electric Power
AZ	Unnamed NextEra Project	50.00	GE Renewable Energy		NextEra Energy Resources	NextEra Energy Resources	Kaiser Permanente
CA	Coachella Hills	100.00			Terra-Gen Power	Terra-Gen Power	Shell Energy North America
CA	Mann Packing	1.70	GE Renewable Energy	1.7-100	Foundation Windpower	Foundation Windpower	Mann Packing, Excess to PG&E
CA	Sand Hill Wind	49.50	GE Renewable Energy	2.3-116	sPower	sPower	Silicon Valley Power
CA	Strauss	101.00	GE Renewable Energy		BayWa r.e. Wind LLC	BayWa r.e. Wind, LLC	Marin Clean Energy
CA	Voyager Wind	132.00			Terra-Gen Power	Terra-Gen Power	Southern California Edison
CO	Busch Ranch II	60.00			Black Hills Electric Generation	Black Hills Electric Generation	Black Hills Colorado Electric Utility Company
CO	Cheyenne Ridge	500.00	Vestas		Tradewind Energy	Xcel Energy	Public Service Co of Colorado
HI	Na Pua Makani	27.00			Champlin - GEI Wind Holdings; AES	AES	Hawaiian Electric Co Inc
HI	Palehua	46.80			Eurus Energy	Eurus Energy	Hawaiian Electric Co Inc
IL	Cardinal Point	150.00			Capital Power	Capital Power	Merchant Hedge Contract (MISO)
IL	Sugar Creek	202.00			Apex Clean Energy, Algonquin Power	Algonquin Power	Merchant Hedge Contract (MISO) (RECs to Illinois Power Agency)
IL	Unnamed Geronimo Energy Project	125.00			Geronimo Energy	Geronimo Energy	Apple (111 MW); Akamai Technologies (9 MW); Swiss Re (5 MW)
IN	Headwaters II	200.00			EDP Renewables North America LLC	EDP Renewables North America LLC	Facebook (139 MW) Walmart (60 MW)
IA	Kossuth	150.00	GE Renewable Energy	2.5-127	Invenergy	Invenergy	Wisconsin Power & Light Co
IA	North English II	140.00	Vestas	V110-2.0	Tradewind Energy	MidAmerican Energy	MidAmerican Energy Co
IA	Richland	210.00	GE Renewable Energy	2.5-127	Invenergy	Interstate Power and Light Co	Interstate Power and Light Co
IA	Whispering Willow North	200.00	GE Renewable Energy	2.5-127	Interstate Power and Light Co	Interstate Power and Light Co	Interstate Power and Light Co
IA	Wind XI	310.40			Multiple	MidAmerican Energy	MidAmerican Energy Co
IA	Wind XII	591.00			Multiple	MidAmerican Energy	MidAmerican Energy Co
KS	Iron Star	300.00			ENGIE North America	ENGIE North America	MJMEUC (50 MW); City of Columbia, MO (35 MW); City of Hannibal, MO (15 MW)
KS	Pretty Prairie	220.00			NextEra Energy Resources	NextEra Energy Resources	Iron Mountain (145 MW)

Note: AWEA defines a project as in advanced development if it has not yet started construction, but has either signed a PPA, announced a firm turbine order, or been announced to proceed under utility ownership.

Utility-Scale Wind Power Projects in Advanced Development

State	Project Phase Name	Project Capacity (MW)	Turbine OEM	Turbine Model	Project Developer	Project Owner	Power Purchaser
KS	Reading Wind	200.13	Siemens Gamesa Renewable Energy	G132-3.465; SWT-2.415-108	RES Americas	Southern Power	Royal Caribbean Cruise Lines
KS	Soldier Creek Wind Energy Center	300.00	GE Renewable Energy		NextEra Energy Resources	NextEra Energy Resources	Westar Energy Inc
MD	Maryland Offshore Wind Project	248.00			U.S. Wind	U.S. Wind	Merchant (PJM)
MD	Skipjack	120.00			Deepwater Wind	Ørsted US Offshore Wind	Merchant (PJM)
MA	Berkshire Wind Power Project Phase II	4.60			Berkshire Wind Power Cooperative Cooperation	Berkshire Wind Power Cooperative Cooperation	Berkshire Wind Power Cooperative Corporation
MA	Revolution Wind	700.00			Ørsted US Offshore Wind	Ørsted US Offshore Wind	Eversource Energy, United Illuminating Co (200 MW)
MA	Vineyard Wind I	400.00			Avangrid Renewables; Copenhagen Infrastructure Partners	Avangrid Renewables; Copenhagen Infrastructure Partners	Eversource Energy, National Grid, and Unitol Corp
MA	Vineyard Wind II	400.00			Avangrid Renewables; Copenhagen Infrastructure Partners	Avangrid Renewables; Copenhagen Infrastructure Partners	Eversource Energy, National Grid, and Unitol Corp
MI	Cross Winds Energy Park III	75.90	GE Renewable Energy	2.3-116	Consumers Energy Co.	Consumers Energy Company	Consumers Energy Co
MI	Garden II	80.00	Senvion	4.0M140	Heritage Sustainable Energy	Heritage Sustainable Energy	
MI	Gratiot Farms	150.00			Tradewind Energy	Tradewind Energy	Consumers Energy Co
MI	Polaris	168.00	GE Renewable Energy	2.3-116; 2.5-127	Invenergy	DTE Energy	The DTE Electric Company
MN	Blazing Star 1	200.00	Vestas	V110-2.0; V120-2.2	Geronimo Energy	Xcel Energy	Northern States Power Co -MN
MN	Blazing Star 2	200.00	Vestas		Geronimo Energy	Xcel Energy	Northern States Power Co -MN
MN	Dodge County	170.00	GE Renewable Energy		NextEra Energy Resources	NextEra Energy Resources	Undisclosed
MN	Freeborn Wind Energy	200.00	Vestas		Invenergy	Xcel Energy	Northern States Power Co -MN
MN	Lake Benton Wind Project (Repowering)	100.20	GE Renewable Energy	2.3-116	NextEra Energy Resources	Xcel Energy	Northern States Power Co -MN
MN	Nobles 2 Power Partners	250.00			Tenaska Inc	Tenaska Inc	Minnesota Power Inc
MN	Red Lake Falls	4.60	GE Renewable Energy	2.3-116	Con Edison Development	Con Edison Development	
MO	Brickyard Hill	157.00			EDF Renewables	EDF Renewables	Ameren Missouri
MO	High Prairie	400.00			Terra-Gen Power	Terra-Gen Power	Ameren Missouri
MO	Tenaska Clear Creek Energy Center	236.00			Tenaska Inc	Tenaska Inc	Associated Electric Coop, Inc

Note: AWEA defines a project as in advanced development if it has not yet started construction, but has either signed a PPA, announced a firm turbine order, or been announced to proceed under utility ownership.

Utility-Scale Wind Power Projects in Advanced Development

State	Project Phase Name	Project Capacity (MW)	Turbine OEM	Turbine Model	Project Developer	Project Owner	Power Purchaser
MT	Crazy Mountain Wind	80.00			WINData; Pattern Energy Group LP	Pattern Energy Group LP	NorthWestern Energy LLC
MT	Mud Springs	240.00			Innogy	innogy Renewables US LLC	PacifiCorp
MT	South Peak	80.00	GE Renewable Energy		ALLETE Clean Energy	ALLETE Clean Energy	NorthWestern Energy LLC
NE	Milligan 1	300.00			Aksamit Resource Management	Aksamit Resource Management	Undisclosed
NE	Monument Road	66.00			Aksamit Resource Management	Aksamit Resource Management	Undisclosed
NE	Plum Creek	230.00			Lincoln Clean Energy	Lincoln Clean Energy	The J.M. Smucker Company (60 MW); Vail Resorts
NE	Prairie Hills Wind	200.00			Sempra Renewables	Sempra Renewables	City of Grand Island - (NE) (50 MW)
NH	Antrim	28.80			Walden Green Energy	Walden Green Energy	New Hampshire Elec Coop (7.2 MW) Partners HealthCare (21.6 MW)
NM	Duran Mesa	200.00			Pattern Energy Group LP	Pattern Energy Group, Inc.	Silicon Valley Power (110 MW); Monterey Bay Community Power (90 MW)
NM	La Joya	166.00			Avangrid Renewables	Avangrid Renewables	Public Service Co of NM
NM	Sagamore Wind	522.00	Vestas		Invenergy	Xcel Energy	Southwestern Public Service Co
NY	Alle-Catt	340.00			Invenergy	Invenergy	Merchant (RECs to NYSEERDA)
NY	Baron Winds	272.00			Innogy	innogy Renewables US LLC	Merchant (RECs to NYSEERDA)
NY	Bluestone Wind	121.80			Calpine Corporation	Calpine Corporation	Merchant (RECs to NYSEERDA)
NY	Cassadaga	126.00			Innogy	innogy Renewables US LLC	
NY	Eight Point Wind	101.20	GE Renewable Energy		NextEra Energy Resources	NextEra Energy Resources	Merchant (RECs to NYSEERDA)
NY	Heritage	202.00			Apex Clean Energy	Apex Clean Energy	Merchant (RECs to NYSEERDA)
NY	Number Three Wind Farm	105.80			Invenergy	Invenergy	Merchant (RECs to NYSEERDA)
NY	South Fork Wind Farm	90.00			Deepwater Wind	Deepwater Wind	Long Island Power Authority
ND	Burke	200.00	GE Renewable Energy		NextEra Energy Resources	NextEra Energy Resources	Basin Electric Power Coop
ND	Emmons-Logan	300.00	GE Renewable Energy		NextEra Energy Resources	NextEra Energy Resources	Great River Energy
ND	Merricourt	150.00	Vestas		EDF Renewables	Otter Tail Power Company	Otter Tail Power Co
OH	Holcim - Paulding Wind Project	4.50	Goldwind	GW87/1500	One Energy LLC	One Energy LLC	LafargeHolcim, Excess to AEP
OH	Icebreaker	20.70			Lake Erie Energy Development Corporation	Lake Erie Energy Development Corporation	American Municipal Power (6.21 MW); City of Cleveland (5.175 MW); Cuyahoga County Council (1.78 MW)

Note: AWEA defines a project as in advanced development if it has not yet started construction, but has either signed a PPA, announced a firm turbine order, or been announced to proceed under utility ownership.

Utility-Scale Wind Power Projects in Advanced Development

State	Project Phase Name	Project Capacity (MW)	Turbine OEM	Turbine Model	Project Developer	Project Owner	Power Purchaser
OK	Diamond Spring	302.50			Apex Clean Energy	Apex Clean Energy	Undisclosed C&I Buyer (50 MW)
OK	Wildhorse Mountain	100.00	Vestas	V136-3.45	RES Americas; Steelhead Americas; Roaring Fork Wind	Southern Power	Arkansas Electric Coop Corp
OR	Orchard Windfarm 1	10.00			Oregon Windfarms LLC	8030 Companies, Inc.	PacifiCorp
OR	Orchard Windfarm 2	10.00			Oregon Windfarms LLC	8030 Companies, Inc.	PacifiCorp
OR	Orchard Windfarm 3	10.00			Oregon Windfarms LLC	8030 Companies, Inc.	PacifiCorp
OR	Orchard Windfarm 4	10.00			Oregon Windfarms LLC	8030 Companies, Inc.	PacifiCorp
PA	Waymart Wind II	68.00	GE Renewable Energy		NextEra Energy Resources	NextEra Energy Resources	Goldman Sachs
SD	Coyote Ridge	97.40			Avangrid Renewables	Avangrid Renewables; WEC Energy Group	Google Energy
SD	Crowned Ridge Wind Project I	300.00	GE Renewable Energy	2.3-116	NextEra Energy Resources	NextEra Energy Resources	Northern States Power Co
SD	Crowned Ridge Wind Project II	300.00	GE Renewable Energy	2.3-116	NextEra Energy Resources	Xcel Energy	Northern States Power Co
SD	Dakota Range I and II	300.00	Vestas		Apex Clean Energy	Xcel Energy	Northern States Power Co
SD	Dakota Range III	151.20			ENGIE North America	ENGIE North America	Xcel Energy Inc.
SD	Prevailing Wind	220.00			Sustainable Power Group	Sustainable Power Group	Basin Electric Power Coop
SD	Tatanka Ridge	98.00			Avangrid Renewables	Avangrid Renewables	Google Energy
SD	Triple H	250.00			ENGIE North America	ENGIE North America	Walmart (150 MW)
TX	Bearkat II	162.15	Vestas	V126-3.45	Tri Global Energy	Copenhagen Infrastructure Partners	Merchant Hedge Contract (ERCOT)
TX	Foard City	350.00			Innergex Renewable Energy	Innergex Renewable Energy	Luminant Energy (300 MW)
TX	Heart of Texas	160.00	Goldwind	GW121/2500	RES Americas; Goldwind Americas	Goldwind Americas	
TX	Mesquite Star	419.00			Clearway Energy Group	Clearway Energy Group	Ecolab Inc. (100 MW)
TX	Patriot	218.85	Vestas	V126-3.45; V136-3.6	Apex Clean Energy	Undisclosed	Merchant Hedge Contract (ERCOT)
TX	Sage Draw	300.00			Lincoln Clean Energy	Lincoln Clean Energy	ExxonMobil (250 MW)
TX	Unnamed NextEra Project	50.00			NextEra Energy Resources	NextEra Energy Resources	Air Liquide
VT	Dairy Air Wind	2.20	Goldwind	GW121/2200	VERA Renewables; All Earth Renewables	Dairy Air Wind LLC	VEPP Inc, Resold to 17 Vermont Utilities

Note: AWEA defines a project as in advanced development if it has not yet started construction, but has either signed a PPA, announced a firm turbine order, or been announced to proceed under utility ownership.

Utility-Scale Wind Power Projects in Advanced Development

State	Project Phase Name	Project Capacity (MW)	Turbine OEM	Turbine Model	Project Developer	Project Owner	Power Purchaser
VA	Coastal Virginia Offshore Wind	12.00	Siemens Gamesa Renewable Energy	SWT-6.0-154	Ørsted US Offshore Wind	Dominion Energy	Dominion Energy
WA	Skookumchuck	136.80	Vestas		RES Americas	RES Americas	Puget Sound Energy Inc
WY	Boswell Springs	320.00			Innergex Renewable Energy	Boswell Wind LLC	PacifiCorp
WY	Cedar Springs	400.00	GE Renewable Energy		NextEra Energy Resources	PacifiCorp; NextEra Energy Resources	PacifiCorp
WY	Corriedale Wind Energy Project	40.00			Black Hills Energy	Black Hills Energy	Black Hills Energy
WY	Ekola Flats	250.00			Invenergy	PacifiCorp	PacifiCorp
WY	Roundhouse	150.00			Enyo Renewable Energy, NextEra Energy Resources	NextEra Energy Resources	Platte River Power Authority
WY	TB Flats I & II	500.00	Vestas		Invenergy	PacifiCorp	PacifiCorp

Note: AWEA defines a project as in advanced development if it has not yet started construction, but has either signed a PPA, announced a firm turbine order, or been announced to proceed under utility ownership.

2018 Power Purchase Agreements

Offtaker	Project Phase Name	Project State	Project Developer	Project Capacity Contracted (MW)
First Quarter 2018				
Adobe Systems	Rattlesnake Creek	Nebraska	Enel Green Power North America	10.00 (of 318.15 MW)
Associated Electric Cooperative	Tenaska Clear Creek Energy Center	Missouri	Tenaska Inc	236.00
AT&T	Minco V	Oklahoma	NextEra Energy Resources	220.00
AT&T	Torrecillas	Texas	NextEra Energy Resources	300.00
Bloomberg	HillTopper	Illinois	Enel Green Power North	17.00 (of 185 MW)
Brown-Forman	Solomon Forks	Kansas	Infinity Wind Power	30.00 (of 474 MW)
City Utilities of Springfield	Diamond Vista	Kansas	Enel Green Power North America	97.65 (of 299.25 MW)
Facebook	Rattlesnake Creek	Nebraska	Enel Green Power North America	118.15
Great Plains Energy	Prairie Queen	Kansas	EDP Renewables North America LLC	200.00
Great Plains Energy	Pratt Wind Energy Center	Kansas	NextEra Energy Resources	244.00
Iron Mountain	Meadow Lake III	Indiana	EDP Renewables North America LLC	5.00 (of 103.5 MW)
Kohler Co	Diamond Vista	Kansas	Enel Green Power North America	100.00 (of 299.25 MW)
Nestlé	Meadow Lake VI	Indiana	EDP Renewables North America LLC	49.95 (of 199.95 MW)
Nike	Karankawa	Texas	Avangrid Renewables	86.00 (of 286 MW)
Northwestern Energy	South Peak	Montana	Allete Clean Energy	80.00
PacifiCorp	Cedar Springs	Wyoming	NextEra Energy Resources	200.00 (of 400 MW)
Platte River Power Authority	Roundhouse	Colorado	Enyo Renewable Energy	150.00
Public Service Company of New Mexico	Casa Mesa	New Mexico	NextEra Energy Resources	50.00
Public Service Company of New Mexico	La Joya	New Mexico	Avangrid Renewables	166.00
Rhode Island Convention Center Authority	WED Shun II	Rhode Island	Green Development LLC	3.00
T-Mobile	Solomon Forks	Kansas	Infinity Wind Power	160.00 (of 474 MW)
Tri-County Electric Cooperative of Oklahoma	Diamond Vista	Kansas	Enel Green Power North America	83.60 (of 299.25 MW)
Undisclosed	Prevailing Wind	South Dakota	sPower	220.00
Second Quarter 2018				
Arkansas Electric Cooperative Corporation	Wildhorse Mountain	Oklahoma	Southern Power/Roaring Fork Wind	100.00
AT&T	Two Undisclosed Projects	Texas	NextEra Energy Resources	300.00
Black Hills Colorado Electric Utility	Busch Ranch II	Colorado	Black Hills Electric Generation	60.00
Central Iowa Power Cooperative	Heartland Divide Wind Farm	Iowa	NextEra Energy Resources	104.00
Grupo Bimbo	Santa Rita East	Texas	Invenergy	100.00 (of 300 MW)
Luminant	Foard City	Texas	Innergex Renewable Energy	300.00 (of 350 MW)

2018 Power Purchase Agreements

Offtaker	Project Phase Name	Project State	Project Developer	Project Capacity Contracted (MW)
Merck & Co.	Santa Rita East	Texas	Invenergy	60.00 (of 300 MW)
Undisclosed C&I	Broadlands	Illinois	EDP Renewables North America LLC	50.00 (of 200 MW)
Undisclosed C&I	Hidalgo II	Texas	EDP Renewables North America LLC	50.00
Wabash Valley Power Association	Broadlands	Illinois	EDP Renewables North America LLC	100.00 (of 200 MW)
Walmart	Crocker	South Dakota	Geronimo Energy	150.00 (of 400 MW)
Walmart	Triple H	South Dakota	Engie	150.00
Third Quarter 2018				
Apple, Akamai Technologies, Etsy, and Swiss Re	Unnamed Geronimo Energy Project	Illinois	Geronimo Energy	125.00
Boston University (205,000 MWh)	Undisclosed	South Dakota	ENGIE North America	~50 (of 250 MW)
Constellation	HillTopper	Illinois	Enel Green Power North America	9.00 (of 185 MW)
Eversource Energy, National Grid, Unitil	Vineyard Wind	Massachusetts	Avangrid Renewables; Copenhagen Infrastructure Partners	800.00
Facebook	Headwaters II	Indiana	EDP Renewables North America LLC	139.00 (of 200 MW)
Herman Miller	Harvest II	Michigan	Constellation Energy (Exelon)	7.41 (of 59.4 MW)
Kaiser Permanente	Unnamed NextEra Project	Arizona	NextEra Energy Resources	50.00
Marin Clean Energy	Voyager II	California	Terra-Gen	42 (of 193 MW)
Monterey Bay Community Power	Duran Mesa	New Mexico	Pattern Energy	90.00 (of 200 MW)
Novartis	Santa Rita East	Texas	Invenergy	100 (of 300 MW)
Royal Caribbean Cruise Lines	Reading Wind	Kansas	Southern Power/RES	200.00
Salesforce	Bright Stalk	Illinois	EDP Renewables North America LLC	80 (of 205.2 MW)
Shell Energy North America	Voyager II	California	Terra-Gen	130 (of 193 MW)
Silicon Valley Clean Energy	Duran Mesa	New Mexico	Pattern Energy	110 (of 200 MW)
Smucker's	Plum Creek	Nebraska	Lincoln Clean Energy	60 (of 230 MW)
Undisclosed C&I Buyers	Timber Road IV	Ohio	EDP Renewables North America LLC	124.80
Undisclosed Utility	Broadlands	Illinois	EDP Renewables North America LLC	50 (of 200 MW)
Westar Energy	Soldier Creek Wind Energy Center	Kansas	NextEra Energy Resources	300.00
Fourth Quarter 2018				
Air Liquide	Unnamed NextEra Project	Texas	NextEra Energy Resources	50.00
Ball Corp	Zephyr Wind Project 2.0	Ohio	One Energy	4.50
Cargill	Crocker	South Dakota	Geronimo Energy	50.00 (of 200 MW)
Cinemark USA	Trent Mesa	Texas	AEP Energy Partners	40.00 (of 153.67 MW)

2018 Power Purchase Agreements

Offtaker	Project Phase Name	Project State	Project Developer	Project Capacity Contracted (MW)
Constellation	HillTopper	Illinois	Enel Green Power North America	14.00 (of 185 MW)
Ecolab	Mesquite Star	Texas	Clearway Energy Group	100.00 (of 419 MW)
Eversource Energy, United Illuminating Co	Revolution Wind	Massachusetts	Ørsted US Offshore Wind	200.00 (of 700 MW)
ExxonMobil	Sage Draw	Texas	Lincoln Clean Energy	250.00 (of 300 MW)
Hawaiian Electric Co	Palehua	Hawaii	Eurus Energy	46.80
Iron Mountain	Pretty Prairie	Kansas	NextEra Energy Resources	145.00 (of 220 MW)
LafargeHolcim	Holcim - Paulding Wind	Ohio	One Energy	4.50
Microsoft	Big Level	Pennsylvania	TransAlta Renewables	90.00
Nestlé Waters (70,500 MWh RECs)	Midway	Texas	ENGIE North America	~20 (of 162.85 MW)
Shell Energy North America	Coachella Hills	California	Terra-Gen	100.00
Undisclosed	Diamond Spring	Oklahoma	Apex Clean Energy	50.00 (of 302.5 MW)
Vail Resorts Inc. (310,000 MWh)	Plum Creek	Nebraska	Lincoln Clean Energy	~90 (of 230 MW)
Walmart	Lexington Chenoa (Bright Stalk)	Illinois	EDP Renewables North America LLC	123.00
Walmart	Headwaters II	Indiana	EDP Renewables North America LLC	60.00 (of 200 MW)
Xcel Energy	Dakota Range III	South Dakota	ENGIE North America	151.20

2018 Project Acquisition Activity

Project Acquirer	Project Seller	Project Phase Name	Share of Project Phase Acquired	Project Capacity Acquired (MW)	Acquisition Type
First Quarter 2018					
Bendwind LLC	NRG Energy	Eastridge	13%	1.25	Generation Assets
BlackRock	EverPower	Big Sky Wind Facility	100%	239.40	Company & Generation Assets
BlackRock	EverPower	Highland North	100%	75.00	Company & Generation Assets
BlackRock	EverPower	Highland Wind Project	100%	62.50	Company & Generation Assets
BlackRock	EverPower	Howard	100%	55.35	Company & Generation Assets
BlackRock	EverPower	Mustang Hills	100%	150.00	Company & Generation Assets
BlackRock	EverPower	Patton Wind Farm	100%	30.00	Company & Generation Assets
BlackRock	EverPower	Twin Ridges	100%	139.40	Company & Generation Assets
BluEarth Renewable	Adams Wind Generations LLC	Adams Wind Generation	80%	15.84	Generation Assets
BluEarth Renewables	Danielson Wind LLC	Danielson Wind	80%	15.84	Generation Assets
DeGreeff DP LLC	NRG Energy	Eastridge	13%	1.25	Generation Assets
DeGreeffpa LLC	NRG Energy	Eastridge	13%	1.25	Generation Assets
Groen Wind LLC	NRG Energy	Eastridge	13%	1.25	Generation Assets
Hillcrest Windfarm LLC	NRG Energy	Eastridge	13%	1.25	Generation Assets
Innergex Renewable Energy	Alterra Power	Shannon	50%	102.04	Company & Generation Assets
Larswind LLC	NRG Energy	Eastridge	13%	1.25	Generation Assets
Longroad Energy Holdings	SunEdison	Milford I	80%	162.80	Generation Assets
Longroad Energy Holdings	MTW Resources	Milford I	20%	40.70	Generation Assets
Longroad Energy Holdings	SunEdison	Milford II	80%	81.60	Generation Assets
Longroad Energy Holdings	MTW Resources	Milford II	20%	20.40	Generation Assets
Quinbrook Infrastructure Partners	NextEra Energy Resources	Mill Run Wind	100%	15.00	Generation Assets
Quinbrook Infrastructure Partners	NextEra Energy Resources	Somerset	100%	9.00	Generation Assets
Quinbrook Infrastructure Partners	NextEra Energy Resources	Waymart Wind	100%	64.50	Generation Assets
Quinbrook Infrastructure Partners	NextEra Energy Resources	Mountaineer Wind Energy Center	100%	66.00	Generation Assets
Quinbrook Infrastructure Partners	NextEra Energy Resources	Meyersdale	100%	30.00	Generation Assets
Quinbrook Infrastructure Partners	NextEra Energy Resources	Cabazon	100%	39.00	Generation Assets
Sierra Wind LLC	NRG Energy	Eastridge	13%	1.25	Generation Assets
Skyline Renewables	RES Americas	Whirlwind Energy Center	100%	59.80	Generation Assets
Tair Windfarm LLC	NRG Energy	Eastridge	13%	1.25	Generation Assets

Note: Data include operating project acquisitions, and do not include projects acquired either upon or prior to commercial operation. YieldCo drop-downs are not considered project acquisitions.

2018 Project Acquisition Activity

Project Acquirer	Project Seller	Project Phase Name	Share of Project Phase Acquired	Project Capacity Acquired (MW)	Acquisition Type
Utah Associated Municipal Power Systems	Forsyth Street Renewables and Citibank	Horse Butte	100%	57.60	Generation Assets
Second Quarter 2018					
Wisconsin Public Service Corporation (WEC Energy Group)	Invenergy	Forward Energy Center	44.6%	57.50	Generation Assets
Wisconsin Power and Light Co (Alliant Energy)	Invenergy	Forward Energy Center	42.6%	55.01	Generation Assets
Madison Gas & Electric Co	Invenergy	Forward Energy Center	12.8%	16.50	Generation Assets
Quinbrook Infrastructure Partners	NextEra Energy Resources	Diablo	100%	18.00	Generation Assets
NorthWestern Corp	NJR Clean Energy Ventures	Two Dot	100%	9.72	Generation Assets
Sacramento Municipal Utility District	Citigroup	Solano Phase 3	100%	127.80	Generation Assets
Terra-Gen Power	Goldman Sachs	Cabazon-Shell	50%	20.46	Generation Assets
Terra-Gen Power	Goldman Sachs	Whitewater Hill Wind Park	50%	30.75	Generation Assets
Terra-Gen Power	Goldman Sachs	Rock River I	50%	24.50	Generation Assets
Third Quarter 2018					
Avangrid Renewables	Shell Wind Energy	Colorado Green Wind Project	50%	81.00	Generation assets
Canada Pension Plan Investment Board	Enbridge	Cedar Point Wind	49%	123.62	Generation assets
Geronimo Renewable Infrastructure Partners LP	Noble Environmental Power	Noble Great Plains Wind Park	100%	114.00	Generation assets
Global Infrastructure Partners	NRG Energy	Alta I	100%	150.00	Company & Generation assets
Global Infrastructure Partners	NRG Energy	Alta II	100%	150.00	Company & Generation assets
Global Infrastructure Partners	NRG Energy	Alta III	100%	150.00	Company & Generation assets
Global Infrastructure Partners	NRG Energy	Alta IV	100%	102.00	Company & Generation assets
Global Infrastructure Partners	NRG Energy	Alta V	100%	168.00	Company & Generation assets
Global Infrastructure Partners	NRG Energy	Alta X	100%	136.80	Company & Generation assets
Global Infrastructure Partners	NRG Energy	Alta XI	100%	89.70	Company & Generation assets
Global Infrastructure Partners	NRG Energy	Buffalo Bear	100%	18.90	Company & Generation assets
Global Infrastructure Partners	NRG Energy	Crosswinds	100%	21.00	Company & Generation assets
Global Infrastructure Partners	NRG Energy	Elbow Creek	100%	121.90	Company & Generation assets
Global Infrastructure Partners	NRG Energy	Elkhorn Ridge	67%	53.36	Company & Generation assets
Global Infrastructure Partners	NRG Energy	Forward	100%	29.40	Company & Generation assets

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2018 Project Acquisition Activity

Project Acquirer	Project Seller	Project Phase Name	Share of Project Phase Acquired	Project Capacity Acquired (MW)	Acquisition Type
Global Infrastructure Partners	NRG Energy	Goat Phase 1	99.9%	79.92	Company & Generation assets
Global Infrastructure Partners	NRG Energy	Goat Phase 2	99.9%	69.53	Company & Generation assets
Global Infrastructure Partners	NRG Energy	Hardin Hilltop Wind	99%	14.55	Company & Generation assets
Global Infrastructure Partners	NRG Energy	Laredo Ridge	100%	80.00	Company & Generation assets
Global Infrastructure Partners	NRG Energy	Lookout	100%	37.80	Company & Generation assets
Global Infrastructure Partners	NRG Energy	Odin	99.9%	19.98	Company & Generation assets
Global Infrastructure Partners	NRG Energy	Pinnacle Wind Force	100%	55.20	Company & Generation assets
Global Infrastructure Partners	NRG Energy	San Juan Mesa	75%	90.00	Company & Generation assets
Global Infrastructure Partners	NRG Energy	Sleeping Bear	100%	94.50	Company & Generation assets
Global Infrastructure Partners	NRG Energy	South Trent Mesa	100%	101.20	Company & Generation assets
Global Infrastructure Partners	NRG Energy	Spanish Fork	100%	18.90	Company & Generation assets
Global Infrastructure Partners	NRG Energy	Spring Canyon Expansion	90%	56.49	Company & Generation assets
Global Infrastructure Partners	NRG Energy	Taloga	100%	129.60	Company & Generation assets
Global Infrastructure Partners	NRG Energy	Wildorado	100%	160.84	Company & Generation assets
OMERS Infrastructure Management	ArcLight Capital Partners	Allegheny Ridge	100%	80.00	Subsidiary & Generation assets
OMERS Infrastructure Management	ArcLight Capital Partners	Aragonne Mesa	100%	90.00	Subsidiary & Generation assets
OMERS Infrastructure Management	ArcLight Capital Partners	Bear Creek	59%	14.23	Subsidiary & Generation assets
OMERS Infrastructure Management	ArcLight Capital Partners	Blue Canyon I	50%	37.13	Subsidiary & Generation assets
OMERS Infrastructure Management	ArcLight Capital Partners	Buena Vista	100%	38.00	Subsidiary & Generation assets
OMERS Infrastructure Management	ArcLight Capital Partners	Caprock Wind Ranch	100%	80.00	Subsidiary & Generation assets
OMERS Infrastructure Management	ArcLight Capital Partners	Cedar Creek	100%	300.50	Subsidiary & Generation assets
OMERS Infrastructure Management	ArcLight Capital Partners	Crescent Ridge	100%	54.45	Subsidiary & Generation assets
OMERS Infrastructure Management	ArcLight Capital Partners	Goshen North	50%	62.25	Subsidiary & Generation assets
OMERS Infrastructure Management	ArcLight Capital Partners	GSG Wind Farm Phase I	100%	80.00	Subsidiary & Generation assets
OMERS Infrastructure Management	ArcLight Capital Partners	Jersey Atlantic Wind Farm	59%	4.45	Subsidiary & Generation assets
OMERS Infrastructure Management	ArcLight Capital Partners	Kumeyaay Phase I	100%	50.00	Subsidiary & Generation assets
OMERS Infrastructure Management	ArcLight Capital Partners	Mendota Hills	100%	50.40	Subsidiary & Generation assets
OMERS Infrastructure Management	ArcLight Capital Partners	Rockland	50%	39.60	Subsidiary & Generation assets
OMERS Infrastructure Management	ArcLight Capital Partners	Sweetwater 1	100%	37.5	Subsidiary & Generation assets
OMERS Infrastructure Management	ArcLight Capital Partners	Sweetwater 2	100%	98.82	Subsidiary & Generation assets
OMERS Infrastructure Management	ArcLight Capital Partners	Sweetwater 3	100%	135	Subsidiary & Generation assets

Note: Data include operating project acquisitions, and do not include projects acquired either upon or prior to commercial operation. YieldCo drop-downs are not considered project acquisitions.

2018 Project Acquisition Activity

Project Acquirer	Project Seller	Project Phase Name	Share of Project Phase Acquired	Project Capacity Acquired (MW)	Acquisition Type
OMERS Infrastructure Management	ArcLight Capital Partners	Sweetwater 4	53%	127.62	Subsidiary & Generation assets
OMERS Infrastructure Management	ArcLight Capital Partners	Sweetwater 5	53%	42.67	Subsidiary & Generation assets
PGGM Infrastructure Fund	EDF Renewable Energy	Red Pine	50%	100.00	Generation assets
PGGM Infrastructure Fund	EDF Renewable Energy	Rock Falls	50%	77.29	Generation assets
Skyline Renewables	RES Americas	Hackberry	100%	165	Generation assets
WEC Energy Group	Invenergy	Bishop Hill III	80%	105.68	Generation assets
Fourth Quarter 2018					
Ares Management Corporation	BP Wind Energy	Silver Star I	100%	60.00	Generation Assets
Ares Management Corporation	BP Wind Energy	Sherbino II	100%	147.50	Generation Assets
Ares Management Corporation	BP Wind Energy	Trinity Hills	100%	225.00	Generation Assets
Black Hills Electric Generation, LLC	Alta Gas	Busch Ranch	50%	14.40	Generation assets
Carlyle Group	Noble Environmental Power	Noble Altona	100%	97.50	Generation assets
Carlyle Group	Noble Environmental Power	Noble Bliss	100%	100.50	Generation assets
Carlyle Group	Noble Environmental Power	Noble Chateaugay	100%	106.50	Generation assets
Carlyle Group	Noble Environmental Power	Noble Clinton	100%	100.50	Generation assets
Carlyle Group	Noble Environmental Power	Noble Ellenburg	100%	81.00	Generation assets
Carlyle Group	Noble Environmental Power	Noble Wethersfield	100%	126.00	Generation assets
Consolidated Edison	Sempra Renewables	Broken Bow II	50%	37.50	Generation assets
Mitsubishi Heavy Industries America	Blue Marlin Energy Holdings	Llano Estacado Wind Ranch	100%	80.00	Generation assets
Ørsted	Lincoln Clean Energy	Amazon Wind Farm Texas	100%	253.00	Company & Generation assets
Ørsted	Lincoln Clean Energy	Willow Springs Wind Farm	100%	250.00	Company & Generation assets
Ørsted	Deepwater Wind	Block Island	100%	30.00	Company & Generation assets
WEC Energy Group	Invenergy	Bishop Hill III	10%	13.20	Generation Assets

Note: Data include operating project acquisitions, and do not include projects acquired either upon or prior to commercial operation. YieldCo drop-downs are not considered project acquisitions.

Electric Utility Renewable Energy Requests for Proposals (RFPs)

Electric Utility	Eligible Technologies	Amount Requested	Request Details	Date Announced	Submission Deadline
First Quarter 2018					
NV Energy	Solar, wind, geo-thermal, biomass, biogas	330 MW	Up to 330 MW of new renewable projects through asset sale, build-transfer, or PPA. Minimum project size of 35 MW. Projects must connect directly to NV Energy's system and be operational by 2021.	1/9/2018	2/2/2018
Tuscon Electric Power	Wind	150 MW	Up to 150 MW of wind energy through PPA or build-transfer. Projects must be at least 100 MW.	1/16/2018	
Connecticut Department of Environmental Protection	Offshore wind, fuel cell, anaerobic digestion	825,000 MWh	Up to 899,250 MWh per year of clean energy from offshore wind, fuel cell, or anaerobic digestion resources, of which no more than 825,000 MWh per year (~220 MW) can be from offshore wind. Minimum project size of 2 MW. PPA length up to 20 years.	1/31/2018	4/2/2018
Second Quarter 2018					
NYSDERDA	Renewables	1.5 million MWh	Up to 20 large-scale renewable energy projects to meet New York's Clean Energy Standard (1.5 million MWh of Tier 1 RECs), from facilities operational between 2015 and 2020.	4/25/2018	6/12/2018
Portland General Electric Co	Renewables (wind, solar, geothermal)	100 MW	100 MW of renewable resources eligible for the Oregon RPS. Projects must be at least 10 MW and placed in service by 2021. Considering PPAs and ownership proposals.	5/22/2018	6/15/2018
Avista	Renewables	50 aMW	Seeking pricing from renewable energy developers capable of constructing, owning, and operating up to 50 average MW. Accepting proposals for 15-20 year PPAs or purchase options.	6/6/2018	6/20/2018
Third Quarter 2018					
Exelon Generation	Wind	Not specified	Seeking PPAs from new or existing wind projects in the PJM territory with minimum term of 10 years. New projects must be operational by Dec 2021.	7/13/2018	8/15/2018
National Grid	Renewables	400 MW	400 MW of new renewable energy resources including onshore and offshore wind, with project sizes between 20 MW and 200 MW each. Seeking PPAs with terms of 10 years to 15 years.	9/12/2018	10/29/2018
New Jersey Board of Public Utilities	Offshore Wind	1,100 MW	Up to 1,100 MW of offshore wind energy through 20 year offshore renewable energy certificates (ORECs). Minimum project size of 300 MW.	9/17/2018	12/28/2018
Alabama Power Company	Renewables	Not specified	Seeking renewable energy resources with project sizes between 5 MW and 80 MW. Projects must be located in Alabama. Accepting proposals for 10-25 year PPAs or turnkey projects.	9/24/2018	10/26/2018
Fourth Quarter 2018					
NV Energy	Renewables	350 MW	At least 350 MW of renewable energy projects eligible for Nevada's RPS. Projects must be at least 20 MW, located within Nevada, and operational by Dec. 31, 2023.	10/16/2018	12/10/2018
Dominion Energy Virginia	Wind,solar	500 MW	Up to 500 MW of onshore wind and solar through PPA or asset purchase. Projects must be located in Virginia and be at least 5 MW (ac) in size.	10/24/2018	12/13/2018
City of Denton, TX	Wind	100 MW	Up to 100 MW of utility-scale coastal wind energy located in ERCOT through a 20 year contract. Preference for energy delivery by December 31, 2020.	10/30/2018	11/20/2018
NYSDERDA	Offshore wind	800 MW	Seeking ORECs from one or more offshore wind project totalling approximately 800 MW. Bidders must submit a proposal for a 400 MW project with 25 year contract, and may also submit alternate proposals for 200 MW up to 800 MW with 20-25 year contract terms.	11/8/2018	2/14/2019
Guzman Energy	Wind	200 MW	Up to 200 MW of wind power. At least 100 MW of wind must be in commercial operation by July 1, 2021.	12/10/2018	1/16/2019

Electric Utility Renewable Energy Requests for Proposals (RFPs)

Electric Utility	Eligible Technologies	Amount Requested	Request Details	Date Announced	Submission Deadline
Georgia Power Company	Renewables (wind, solar, biomass)	540 MW	540 MW of utility-scale renewable energy projects. Projects must be at least 3 MW and can include energy storage.	12/10/2018	1/15/2019
First Quarter 2019					
Southwestern Electric Power Co.	Wind	1,200 MW	Up to 1,200 MW of new or existing wind projects on turnkey basis that qualify for at least 80% of the PTC. Projects must be at least 100 MW, located in SPP, and reach operation by Dec. 15, 2021.	11/14/2018	3/1/2019
Public Service Company of Oklahoma	Wind	1,000 MW	Up to 1,000 MW of new or existing wind projects on turnkey basis that qualify for at least 80% of the PTC. Projects must be at least 100 MW, located in SPP, and reach operation by Dec. 15, 2021.	11/5/2018	3/1/2019

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