



Office of Energy Projects Energy Infrastructure Update *For December 2016*

Natural Gas Highlights

- Natural received authorization to place into service its 2012 Storage Optimization Project which will provide 100 MMcf/d of capacity on its Gulf Coast Mainline from the Loudon Storage Field located near St. Emo in Fayette County, IL to a point of termination at Natural's Compressor Station No. 113 near Joliet in Will County, IL.
- Algonquin received authorization to place into service the Stony Point to Yorktown Take-up and Relay facilities as part of its Algonquin Incremental Market Project. These facilities will provide the remaining 97 MMcf/d of capacity out of the authorized 342 MMcf/d of capacity.
- UGI Sunbury received authorization to place into service its Sunbury Pipeline Project which will provide 200 MMcf/d of capacity to serve markets in central PA, including a proposed electric generation facility in Snyder County, PA.
- Tennessee received authorization to construct and operate its Southwest Louisiana Supply Project which will provide 295 MMcf/d of capacity on its existing 800 Line System in LA to serve the Cameron LNG export facility in Cameron Parish, LA.
- Texas Eastern received authorization to construct and operate three projects, the Access South, the Adair Southwest, and the Lebanon Extension Projects, which will provide a total of 622 MMcf/d of capacity on its mainline from a receipt point in Uniontown, PA to Midwest and Southeastern markets.
- Tennessee received authorization to construct and operate its Triad Expansion Project which will provide 180 MMcf/d of west-to-east capacity on its existing Line 300 system to serve a proposed electric generating plant in Lackawanna County, PA.
- Golden Pass LNG and Golden Pass Pipeline received authorization to construct and operate an LNG export terminal (2,100 MMcf/d of deliverability) at Golden Pass's existing import terminal in Sabine Pass, TX., and pipeline facilities to provide 2,500 MMcf/d of bi-directional capacity on Golden Pass Pipeline's existing system to serve the proposed terminal.
- Chesapeake Appalachia and Columbia Natural received authorization to abandon certain facilities in WV and KY used to provide limited jurisdictional service to Mountaineer Gas Company, and Core Appalachia received authorization to provide limited jurisdictional service on the Devonian Gas Gathering System to serve Mountaineer Gas Company.
- Total Peaking Services received authorization to construct and operate facilities necessary to increase the vaporization send out capacity at its existing LNG facility located in Milford, CT from 90 MMcf/d to 105 MMcf/d.
- Texas Eastern received authorization to abandon in place and by removal certain offshore pipeline facilities and related appurtenances located in federal offshore waters in the Gulf of Mexico near LA.
- Kinder Morgan Louisiana Pipeline requests authorization to construct and operate its Sabine Pass Expansion Project which would provide 600 MMcf/d of north-to-south capacity from existing pipeline interconnections in Evangeline and Acadia Parishes, LA to a proposed new delivery point with Sabine Pass LNG near Sabine Pass in Cameron Parish, LA.
- Florida Gas requests authorization to construct and operate its Western Division Project which would provide 68.5 MMcf/d of capacity from a receipt point in George County, MS to a proposed interconnection with Florida Public Utilities Company in Escambia County, AL.
- Portland Natural Gas requests authorization to increase the certificated capacity on its north system from Pittsburg, NH to Westbrook, ME by 42 MMcf/d and to increase its authorized import and export capacity from 178 MMcf/d to 210 MMcf/d (hereby called the Continent to Coast Expansion Project).
- Eastern Shore requests authorization to construct and operate its 2017 Expansion Project which would provide 61.2 MMcf/d of capacity on its system in PA, MD, and DE, to meet market demand and provide enhanced flexibility.
- Pomelo Connector requests authorization to construct and operate its Pomelo Connector Pipeline Project which would provide 400 MMcf/d of capacity from the Petronila Station of Texas Eastern near Petronila, TX to an interconnection with Valley Crossing Pipeline near Agua Dulce, TX.
- Texas Eastern requests authorization to amend its proposed South Texas Expansion Project by (1) acquiring by lease, capacity on Pomelo Connectors proposed pipeline which would interconnect with Texas Eastern in Nueces County, TX; (2) reducing the projects proposed capacity from 400 MMcf/d to 396 MMcf/d; and (3) removing from the project the meter and regulating station at the proposed Petronila Compressor Station site in Nueces County, TX.



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Natural Gas Activities in December 2016

Status	No. of Projects	Storage Capacity (Bcf)	Deliverability (MMcf/d)	Capacity (MMcf/d)	Miles of Pipeline	Compression (HP)
Pipeline						
Placed in Service	3			397.0	37.3	22,000
Certificated	4			3,597.0	30.1	157,025
Proposed	5			1,171.7	56.2	56,450
Storage						
Placed in Service	0	0.0	0.0			0
Certificated	1	0.0	15.0			0
Proposed	0	0.0	0.0			0
LNG (Import & Export)						
Placed in Service (Export)	0	0	0			0
Certificated (Import/Export)	1	0	2,100			0
Proposed (Import/Export)	0	0	0			0

Source: Staff Database

Natural Gas Activities through December 31, 2016 January through December 31, 2015

Status	No. of Projects	Storage Capacity (Bcf)	Deliverability (MMcf/d)	Capacity (MMcf/d)	Miles of Pipeline	Compression (HP)
Pipeline						
Placed in Service through December 31, 2015	37 35			7,072.3 7,797.4	391.7 423.5	420,869 291,397
Certificated through December 31, 2015	52 47			18,168.7 15,748.0	1,174.9 578.0	1,415,820 522,580
Storage						
Placed in Service through December 31, 2015	0 6	0.0 11.4	0 53			0 6,800
Certificated through December 31, 2015	1 2	0.0 2.7	15.0 0			0 0
LNG (Import & Export)						
Placed in Service (Export) through December 31, 2015	1 0	0 0	1,400 0			0 0
Certificated (Import/Export) through December 31, 2015	5 2	10.2 0	5,281 3,600			0 0

Source: Staff Database



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Hydropower Highlights (nonfederal)

- GB Energy Park, LLC was issued an original license for the 400.0 MW Gordon Butte Pumped Storage Project No. 13642. The project will be located about 3 miles west of the Town of Martinsdale, in Meagher County, MT. The project will operate as a closed-loop pumped storage facility with water for the initial reservoir fill and replenishment supplied by an irrigation system connected to Cottonwood Creek, 4 miles west of the project.
- Lock +™ Hydro Friends Fund XIX, LLC filed an original license application for the proposed 19.6 MW Claiborne Hydroelectric Project No. 13519. The project would be located at the U.S. Army Corps of Engineers' Claiborne Lock and Dam on the Alabama River, near the Town of Monroeville, Monroe County, AL.
- Northwestern Corporation filed an application to raise the capacity of its Missouri-Madison Hydroelectric Project No. 2188, from 334.290 MW to 337.290 MW. The project is located on the Missouri and Madison Rivers in Cascade, Gallatin, Lewis and Clark, and Madison Counties, MT.

Hydropower Project Activities in December 2016

Status	Conventional		Pumped Storage		Hydrokinetic		Total No. of Projects	Total Capacity (MW)
	No.	Capacity (MW)	No.	Capacity (MW)	No.	Capacity (MW)		
Filed								
License	1	19.600	0	0	0	0	1	19.600
10-MW Exemption	0	0	0	0	0	0	0	0
Capacity Amendment	1	3.000	0	0	0	0	1	3.000
Conduit Exemption	0	0	0	0	0	0	0	0
Issued								
License	0	0	1	400.000	0	0	1	400.000
10-MW Exemption	0	0	0	0	0	0	0	0
Capacity Amendment	0	0	0	0	0	0	0	0
Conduit Exemption	0	0	0	0	0	0	0	0
Placed in Service								
License	0	0	0	0	0	0	0	0
10-MW Exemption	0	0	0	0	0	0	0	0
Capacity Amendment	0	0	0	0	0	0	0	0
Conduit Exemption	0	0	0	0	0	0	0	0

Source: Staff Database



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Hydropower Project Activities Year to Date (through December 31, 2016)

Status	Conventional		Pumped Storage		Hydrokinetic		Total No. of Projects	Total Capacity (MW)
	No.	Capacity (MW)	No.	Capacity (MW)	No.	Capacity (MW)		
Filed								
License	3.5	69.649	0.5	300.000	0	0	4	369.649
10-MW Exemption	1	0.360	0	0	0	0	1	0.360
Capacity Amendment	2	3.100	0	0	0	0	2	3.100
Conduit Exemption	2	0.530	0	0	0	0	2	0.530
Issued								
License	11	208.522	1	400.000	0	0	12	608.522
10-MW Exemption	1	0.220	0	0	0	0	1	0.220
Capacity Amendment	4	9.010	0	0	0	0	4	9.010
Conduit Exemption	0	0	0	0	0	0	0	0
Placed in Service								
License	4.5	211.200	0	0	0	0	4.5	211.200
10-MW Exemption	0	0	0	0	0	0	0	0
Capacity Amendment	2.5	26.500	0	0	0	0	2.5	26.500
Conduit Exemption	0	0	0	0	0	0	0	0

Source: Staff Database

Electric Generation Highlights

- Florida Power and Light Co.'s 462 MW natural gas-fired Fort Myers Expansion Project in Lee County, FL is online.
- Golden Spread Electric Coop. Inc.'s 168 MW natural gas-fired Antelope Station Expansion Project in Hale County, TX is online.
- Pasadena Water and Power Department's 75 MW natural gas-fired Glenarm Expansion Project in Los Angeles County, CA is online.
- Grande Prairie Wind LLC's 400 MW Grande Prairie Wind Farm Project in Holt County, NE is online. The power generated is sold to Omaha Public Power District under long-term contract.
- Ida Grove Wind Energy LLC's 301 MW Ida Grove Wind Project in Ida County, IA is online.
- MidAmerican Energy Co.'s 250 MW O'Brien Wind Project in O'Brien County, IA is online.
- Hidalgo Wind Farm LLC's 250 MW Hidalgo Wind Farm Project in Hidalgo County, TX is online.
- Great Western Wind Energy LLC's 225 MW Great Western Wind Project in Ellis County, OK is online. The power generated is sold to Google Inc. under long-term contract.
- Desert Wind Farm LLC's 208 MW Desert Wind Farm Project in Perquimans County, NC is online. The power generated is sold to Amazon Web Services under long-term contract.
- Kingman Wind Energy I, LLC and Kingman Wind Energy II, LLC's 204 MW Kingman Wind Energy Project in Kingman County, KS is online. Half of the power generated is sold to Westar Energy Inc. under long-term contract.
- Ninnescah Wind LLC's 200 MW Ninnescah Wind Project in Pratt County, KS is online. The power generated is sold to Westar Energy Inc. under long-term contract.
- Osborn Wind Energy Center's 200 MW Osborn Wind Energy Center Project in Dekalb County, MO is online. The power generated is sold to Kansas City Power and Light Co. and KCP&L Greater Missouri Operations Co. under long-term contracts.
- Frontier Windpower LLC's 200 MW Frontier Wind Project in Kay County, OK is online. The power generated is sold to the City of Springfield (MO) under long-term contract.
- Kelly Creek Wind LLC's 184 MW Kelly Creek Wind Farm Project in Ford County, IL is online.
- Salt Fork Wind LLC's 174 MW Salt Fork Wind Phase I Project in Gray County, TX is online.
- Tyler Bluff Wind Farm Project LLC's 123 MW Tyler Bluff Wind Farm Project in Cooke County, TX is online.



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- Drift Sand Wind Project LLC's 109 MW Drift Sand Wind Project in Grady County, OK is online. The power generated is sold to Arkansas Electric Coop. Corp. under long-term contract.
- Sunflower Wind Project LLC's 104 MW Sunflower Wind Project in Stark County, ND is online. The power generated is sold to Basin Electric Power Coop. under long-term contract.
- San Roman Wind I LLC's 93 MW San Roman Wind Farm Project in Cameron County, TX is online.
- Jericho Rise Wind Farm LLC's 80 MW Jericho Rise Wind Farm Phase 2 Expansion Project in Franklin County, NY is online.
- Black Oak Wind LLC's 78 MW Black Oak Wind (MN) Project in Stearns County, MN is online. The power generated is sold to Minnesota Municipal Power Agency under long-term contract.
- Chisholm View Wind Project LLC's 65 MW Chisholm View Wind Phase II Expansion Project in Garfield County, OK is online. The power generated is sold to Alabama Power Co. under long-term contract.
- Hancock Wind LLC's 51 MW Blue Sky East Wind Project in Hancock County, ME is online. The power generated is sold to the City of Burlington (VT) and Massachusetts Municipal Wholesale Electric Co. under long-term contracts.
- DTE Energy Co.'s 51 MW Echo Wind Phase III Expansion Project in Huron County, MI is online.
- Ringer Hill Farm LLC's 40 MW Ringer Hill Wind Farm Project in Somerset County, PA is online.
- Deepwater Wind Block Island LLC's 30 MW Block Island Wind Project offshore, RI is online. This is the first offshore wind farm in the U.S. The power generated is sold to National Grid U.S.A. under long-term contract.
- Terrapin Energy LLC's 30 MW Big Turtle Wind Phase III Expansion Project in Huron County, MI is online. The power generated is sold to DTE Energy Co. under long-term contract.
- South Fork Wind LLC's 15 MW South Fork Wind Project in Jackson County, MN is online. The power generated is sold to Muscatine Power and Water under long-term contract.
- Georgia Pacific Brewton LLC's 75 MW black liquor-fired Georgia Pacific Brewton Project in Escambia County, AL is online. The power generated is used on-site.
- Los Angeles County Department of Public Works' 27 MW biofuel-fired Hyperion Cogeneration Project in Los Angeles County, CA is online.
- RE Garland LLC's 200 MW RE Garland Solar Project in Kern County, CA is online. The power generated is sold to Southern California Edison Co. under long-term contract.
- RE Astoria LLC's 175 RE Astoria Solar Project in Kern County, CA is online. The power generated is sold to Pacific Gas and Electric Co. under long-term contract.
- Beacon Solar LLC's 106 MW Beacon Photovoltaic Phases 2 and 3 Expansion Project in Kern County, CA is online. The power generated is sold to Los Angeles Department of Water and Power under long-term contract.
- Southern Power Co.'s 103 MW Butler Solar Project in Taylor County, GA is online.
- Mesquite Solar 2 LLC's 100 MW Mesquite Solar Phase 10 Expansion Project in Maricopa County, AZ is online. The power generated is sold to Southern California Edison Co. under long-term contract.
- OCI Alamo 7 LLC's 100 MW Solara Solar Project in Haskell County, TX is online. The power generated is sold to CPS Energy under long-term contract.
- Copper Mountain Solar 4 LLC's 94 MW Copper Mountain Phase 19 Expansion Project in Clark County, NV is online. The power generated is sold to Southern California Edison under long-term contract.
- Solverde I LLC's 85 MW Solverde I Solar Facility Project in Los Angeles County, CA is online. The power generated is sold to the Department of Water Resources North under long-term contract.
- Innovative Solar 46 LLC's 80 MW Hope Mills Solar Project in Cumberland County, NC is online. The power generated is sold to Duke Energy Carolinas under long-term contract.
- Three Peaks Power LLC's 80 MW Three Peaks Power Plant Project in Iron County, UT is online. The power generated is sold to PacifiCorp under long-term contract.
- Solar Star California XLI LLC's 67 MW Stanford Solar Generating Station Project in Kern County, CA is online. The power generated is sold to Turlock Irrigation District and The Board of Trustees of The Leland Stanford Junior University under long-term contracts.
- Live Oak solar LLC's 51 MW Live Oak Solar Project in Burke County, GA is online.
- Antelope DSR 1 2 LLC's 50 MW Antelope DSR Solar Phase 2 Expansion Project in Los Angeles County, CA is online. The power generated is sold to Southern California Public Power Authority under long-term contract.
- Luning Energy LLC's 50 MW Luning Solar Project in Mineral County, NV is online.



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- Elevation Solar C LLC's 40 MW Elevation Solar C Project in Los Angeles County, CA is online.
- Rio Bravo Solar I and II LLCs' 40 MW Rio Bravo Solar Phase 1 and Phase 2 Expansion Projects in Kern County, CA are online. The power generated is sold to Southern California Edison Co. under long-term contracts.
- Innovative Solar 47 LLC's 35 MW Innovative Solar 47 Project in Robeson County, NC is online. The power generated is sold to Duke Energy Carolinas under long-term contract.
- San Isabel Solar LLC's 30 MW San Isabel Solar Project in Las Animas County, CO is online. The power generated is sold to Tri State Generation and Transmission Association Inc. under long-term contract.
- Georgia Power Co.'s 30 MW Fort Stewart Solar Project, in Liberty County, GA is online.
- DTE Energy Co.'s 28.4 MW Lapeer Solar I and 19.6 MW Lapeer Solar II Projects in Lapeer County, MI are online.
- Longboat Solar LLC's 27 MW Longboat Solar Project in San Bernardino County, CA is online. The power generated is sold to southern California Edison co. under long-term contract.
- Advanced Solar Power Holdings Inc.'s 25 MW SFAE VA121 PV Project in Louisa County, VA is online. The power generated is sold to Dominion Virginia Power under long-term contract.
- CED Inc.'s 22 MW CED Ducor I, 22 MW CED Ducor II, and 16 MW CED Ducor III Solar Projects in Tulare County, CA are online. The power generated is sold to Southern California Edison Co. under long-term contracts.
- Western Antelope Blue Sky Ranch B LLC's 20 MW Western Antelope Blue Sky Ranch Solar Phase 2 Expansion Project in Lost Angeles County, CA is online. The power generated is sold to the City of Palo Alto under long-term contract.
- North Lancaster Ranch LLC's 20 MW North Lancaster Ranch Solar Project in Los Angeles County, CA is online. The power generated is sold to Southern California Edison Co. under long-term contract.
- Virginia Electric and Power Co.'s 17 MW Scott Solar Farm Project in Scott County, VA is online.
- BWC French River LLC's 16 MW BWC French River Solar Project in Worcester County, MA is online.
- Wildwood Solar II LLC's 15 MW Wildwood Solar II Project in Kern County, CA is online.
- Victory Solar LLC's 13 MW Victory Solar Project in Adams County, CO is online. The power generated is sold to Intermountain Rural Electric Association under long-term contract.
- Portal Ridge Solar LLC's 11.4 MW Portal Ridge Solar Project in Los Angeles County, CA is online.
- Western Antelope Dry Ranch LLC's 10 MW Western Antelope Dry Ranch Solar Project in Los Angeles County, CA is online. The power generated is sold to San Diego Gas and Electric Co. under long-term contract.
- PSEG Solar Source LLC's 10 MW PSEG Lake County Solar Energy Center Project in Lake County, OR is online.
- Solar Wind Energy LLC's 8 MW ILR Landfill Solar Project in Middlesex County, NJ is online.
- Kokomo Solar I LLC's 6 MW Kokomo Solar Park Project in Howard County, IN is online. The power generated is sold to Duke Energy Indiana under long-term contract.
- RB Solar LLC's 5 MW Rock Barn Solar Project in Catawba County, NC is online. The power generated is sold to Duke Energy Carolinas under long-term contract.



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New Generation In-Service (New Build and Expansion)

Primary Fuel Type	December 2016		January – December 2016 Cumulative		January – December 2015 Cumulative	
	No. of Units	Installed Capacity (MW)	No. of Units	Installed Capacity (MW)	No. of Units	Installed Capacity (MW)
Coal	0	0	3	45	2	6
Natural Gas	5	630	102	8,689	73	6,386
Nuclear	0	0	1	1,270	4	305
Oil	0	0	7	58	21	41
Water	0	0	30	314	23	161
Wind	29	3,664	77	7,865	76	8,328
Biomass	2	102	51	197	39	323
Geothermal Steam	0	0	0	0	3	67
Solar	60	1,861	407	7,748	405	3,521
Waste Heat	0	0	2	23	0	0
Other *	3	0	16	0	21	0
Total	99	6,257	696	26,209	667	19,138

Sources: Data derived from Velocity Suite, ABB Inc. and The C Three Group LLC which include plants with nameplate capacity of 1 MW or greater. The data may be subject to update.

Total Available Installed Generating Capacity

	Installed Capacity (GW)	% of Total Capacity
Coal	291.79	24.65%
Natural Gas	511.74	43.23%
Nuclear	106.58	9.00%
Oil	44.85	3.79%
Water	100.59	8.50%
Wind	81.87	6.92%
Biomass	16.78	1.42%
Geothermal Steam	3.93	0.33%
Solar	23.70	2.00%
Waste Heat	1.18	0.10%
Other*	0.73	0.06%
Total	1,183.74	100.00%

Sources: Data derived from Velocity Suite, ABB Inc. and The C Three Group LLC which include plants with nameplate capacity of 1 MW or greater. The data may be subject to update.

* "Other" includes purchased steam, tires, and miscellaneous technology such as batteries, fuel cells, energy storage, and fly wheel.



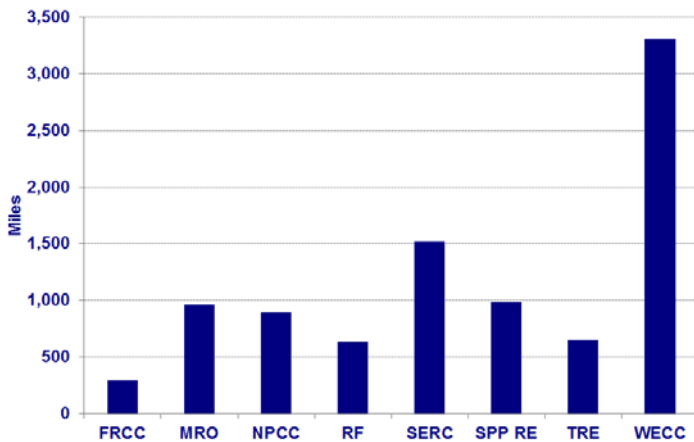
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Electric Transmission Highlights

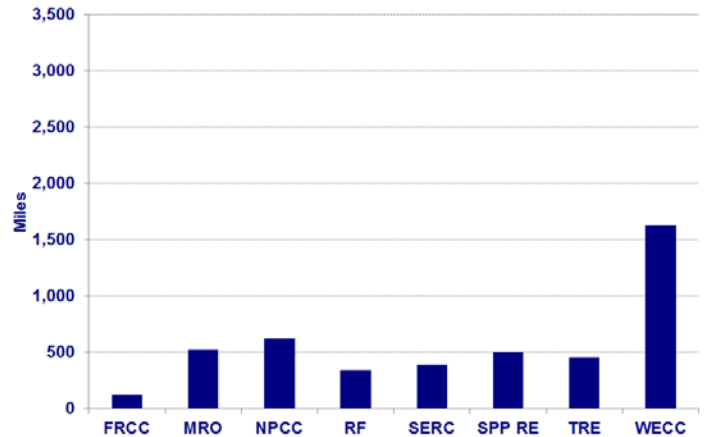
- Oncor Electric Delivery has completed the 16 mile, 138 kV Hicks - Elizabeth Creek Transmission Line. The approximately \$26 million project is located in TX.

Voltage (kV)	Transmission Projects Completed				Proposed Transmission Projects In-Service by December 2018	
	December 2016	December 2015	January – December 2016 Cumulative	January – December 2015 Cumulative	High Probability of Completion	All
	Line Length (miles)					
≤230	16.0	39.0	329.8	722.2	1,877.5	3,636.7
345	0.0	210.3	326.9	1,230.5	1,895.3	3,133.9
500	0.0	0.0	43.0	355.0	815.4	2,469.1
Total U.S.	16.0	249.3	699.7	2,307.7	4,588.2	9,239.7

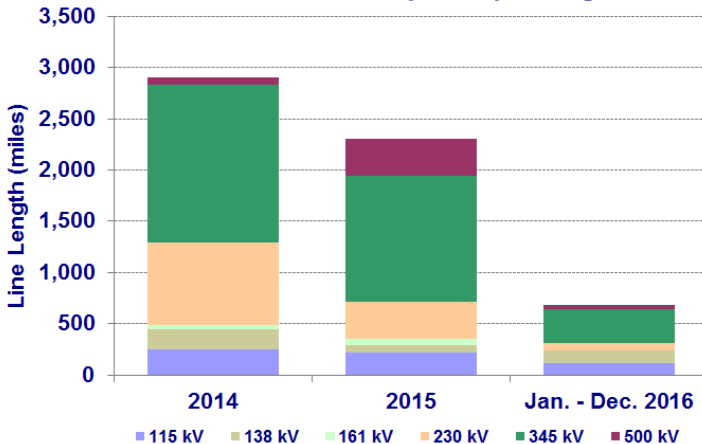
All Transmission Projects with a Proposed In-Service Date by December 2018



Transmission Projects with a High Probability of being completed by December 2018



New Transmission Projects by Voltage



Sources: Data derived from Staff Database and U.S. Electric Transmission Projects The C Three Group, LLC.

Disclaimer: This Report contains analyses, presentations, and conclusions that may be based on or derived from the data sources cited, but do not necessarily reflect the positions or recommendations of the data providers.