



Office of Energy Projects Energy Infrastructure Update *For December 2018*

Natural Gas Highlights

- Elba Express placed in service its EEC Expansion Project which will provide 769 MMcf/d of north-to-south transportation capacity on its existing system to serve the proposed LNG export facility on Elba Island, GA.
- Millennium received authorization to place in service the Highland Compressor Station associated with its Eastern System Upgrade Project. When fully operational, the project will provide 223 MMcf/d of transportation capacity from its Corning Compressor Station to an interconnection with Algonquin in Ramapo, NY.
- DTE Mainstream Appalachia received authorization to place in service its Birdsboro Project, which will deliver up to 79 MMcf/d of natural gas from Texas Eastern to the Birdsboro gas-fired generation facility in Berks County, PA.
- Steel Reef received Section 3 authorization to place in service approximately 250 feet of natural gas pipeline border crossing facilities with capacity to export up to 30 MMcf/d of natural gas from Portal, ND into Saskatchewan, Canada.
- Florida Gas received authorization to place in service certain facilities of its East-West Project, which when fully operational will provide 275 MMcf/d of transportation capacity from LA and TX to markets in the Texas Gulf Coast.
- National Fuel received authorization to place in service certain facilities of its Line YM28 and Line FM120 Modernization Project, which when fully operational will include 20.2 miles of new and replacement pipeline in Cameron, Elk, and McKean Counties, PA. There is no capacity increase related to this project.
- RH energytrans received authorization to construct its Riesberg Project, which would transport 55 MMcf/d of natural gas from Erie County, PA to Ashtabula County, OH. The project consists of 28 miles of new 12" pipeline.
- Transco received authorization to construct its Gateway Expansion Project, which will provide an additional 65 MMcf/d of natural gas transportation from Mercer County to Bergen and Passaic Counties, NJ.
- Sumas Pipeline received an amendment to its Section 3 authorization and Presidential Permit to reflect a transfer of a portion of its ownership interest in the border crossing facility and natural gas pipeline in Whatscom County, WA, to PUGET and SOCCO and the subsequent transfer of SOCCO's resulting ownership interest to Dry Kilns.
- National Fuel received authorization to abandon Zoar Well 804-1 at its Zoar storage field in Erie County, NY. The proposed abandonment will not affect service to customers.
- Perryville Gas received authorization to reclassify the working and base gas capacities in Cavern PGS-1 at its storage facility in Franklin and Richland Parishes, LA.
- Kern River requests authorization to construct the Eaglecrest Meter Station, which would deliver 40 MMcf/d of natural gas to E&B Natural Resources Management Corporation in Kern County, CA.
- Texas Eastern requests authorization for its Line 27 Partial Abandonment Project, which includes abandoning a 6.5 mile segment of 30-inch line on its Penn-Jersey system in Delmont, Pennsylvania.
- Dominion Energy requests authorization for its West Loop Project, including 5.1 miles of new pipeline and other facilities in Beaver and Lawrence Counties, PA and Carroll County, OH, to provide 150 MMcf/d of transportation capacity for an electric generator in Columbiana County, OH.
- El Paso requests authorization for its Northern Delaware Basin Expansion Project, including 14 miles of pipeline and other appurtenant facilities in Winkler, Crane, and Upton County, TX, to provide up to 320 MMcf/d of expansion firm capacity to delivery points in the Permian Basin.
- El Paso requests authorization to construct the Kiwanis Meter Station, which would allow it to deliver up to 2,500 MMcf/d of firm transportation capacity to the United Dairyman milk processing plant in Maricopa County, AZ.
- Southern Star requests authorization to construct 37.4 miles of new pipeline and other appurtenant facilities in Anderson and Franklin Counties, KS, in order to replace its DT and DS lines.
- PNGTS requests authorization to increase the certificated capacity on its system from Pittsburg, New Hampshire, to Westbrook, Maine, by 42.4 Mcf/d, and to amend its import/export Presidential Permit accordingly.
- Greylock Pipeline requests authorization to acquire 3-miles of lateral pipeline from its affiliate, NRG ECA Pipeline, which will allow Greylock to own and operate its interstate system from its receipt point directly to the NRG REMA Shawville power plant in Clearfield County, PA.
- Alliance requests authorization to restate the certificated design capacity of its Tioga Lateral from 126 to 96 MMcf/d to reflect the existing available firm capacity of its facilities in Northwestern North Dakota.
- Northern Natural requests authorization for its Ventura North 2019 E-line Extension Project, including construction of two miles of pipeline and abandonment of certain facilities in Worth County, IA and Freeborn County, MN.
- WBI Energy requests authorization for its Demicks Lake - Cherry Creek Pipeline Project, including 12.2 miles of new pipeline to provide 176 MMcf/d of new transportation capacity in McKenzie County, ND.
- Equitrans requests authorization to abandon Well 3675 at its Hunters Cave Storage Field in Greene County, PA.



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Natural Gas Activities in December 2018

Status	No. of Projects	Storage Capacity (Bcf)	Deliverability (MMcf/d)	Capacity (MMcf/d)	Miles of Pipeline	Compression (HP)
Pipeline						
Placed in Service	5			607	60	44,800
Certificated	2			120	28	27,500
Proposed	6			689	72	0
Storage						
Placed in Service	0	0	0			0
Certificated	0	0	0			0
Proposed	0	0	0			0
LNG (Import & Export)						
Placed in Service (Export)	0	0	0			0
Certificated (Import/Export)	0	0	0			0
Proposed (Import/Export)	0	0	0			0

Source: Staff Database

Natural Gas Activities through December 31, 2018 January through December 31, 2017

Status	No. of Projects	Storage Capacity (BCF)	Deliverability (MMcf/d)	Capacity (MMcf/d)	Miles of Pipeline	Compression (HP)
Pipeline						
Placed in Service	26			13,042.8	689.1	987,578
through December 31, 2017	32			9,672	766	558,619
Certificated	48			9,235.9	671.3	327,495
through December 31, 2017	48			30,646	2,739	2,314,120
Storage						
Placed in Service	0	0.0	0.0			0
through December 31, 2017	1	8	600			9,500
Certificated	4	3,600.3	152.0			0
through December 31, 2017	2	0	10			980
LNG (Import & Export)						
Placed in Service (Export)	1	0.0	825.0			0
through December 31, 2017	3	0	1,493			0
Certificated (Import/Export)	1	0.0	20.0			0
through December 31, 2017	0	0	0			0

Source: Staff Database



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Hydropower Highlights (nonfederal)

- Birch Power Company was issued an original license for the 48.000 MW Demopolis Lock and Dam Hydroelectric Project No. 13102. The project will be constructed at the U.S. Army Corps Demopolis Lock and Dam facility on the Tombigbee River, near the city of Demopolis, in Marengo and Sumter Counties, AL.
- The Placer County Water Agency filed an application to raise the capacity of its Middle Fork American River Project No. 2079 from 223.753 MW to 223.788 MW. The project is located on the Middle Fork American River in Placer County, CA.

Hydropower Project Activities in December 2018

Status	Conventional		Pumped Storage		Hydrokinetic		Total No. of Projects	Total Capacity (MW)
	No.	Capacity (MW)	No.	Capacity (MW)	No.	Capacity (MW)		
Filed								
License	0	0	0	0	0	0	0	0
10-MW Exemption	0	0	0	0	0	0	0	0
Capacity Amendment	1	0.035	0	0	0	0	1	0.035
Conduit Exemption	0	0	0	0	0	0	0	0
Issued								
License	1	48.000	0	0	0	0	1	48.000
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

Hydropower Project Activities Year to Date (through December 31, 2018)

Status	Conventional		Pumped Storage		Hydrokinetic		Total No. of Projects	Total Capacity (MW)
	No.	Capacity (MW)	No.	Capacity (MW)	No.	Capacity (MW)		
Filed								
License	0	0	0	0	0	0	0	0
10-MW Exemption	2	0.927	0	0	0	0	2	0.927
Capacity Amendment	3	3.875	1	335.000	0	0	4	338.875
Conduit Exemption	0	0	0	0	0	0	0	0
Issued								
License	1	48.000	0	0	0	0	1	48.000
10-MW Exemption	0	0	0	0	0	0	0	0
Capacity Amendment	1	1.740	1	335.000	0	0	2	336.740
Conduit Exemption	0	0	0	0	0	0	0	0
Placed in Service								
License	2	12.000	0	0	0	0	2	12.000
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

Source: Staff Database



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Electric Generation Highlights

- Dominion Virginia Power's 1,681.0 MW natural gas-fired Greensville Combined Cycle Facility in Greensville County, VA is online.
- Tenaska Pennsylvania Partners LLC's 926.0 MW natural gas-fired Tenaska Westmoreland Facility in Westmoreland County, PA is online.
- Carlsbad Energy Center LLC's 526.5 MW natural gas-fired Carlsbad Energy Center expansion in San Diego County, CA is online. The power generated is sold to San Diego Gas & Electric Co. under long-term contract.
- Enel Green Power Rattlesnake Creek Wind Project LLC's 320.0 MW Rattlesnake Creek Wind Project in Dixon County, NE is online. The power generated is sold to Adobe Systems Inc and Facebook under long-term contract.
- Enel Green Power Diamond Vista Wind Project's 300.0 MW Diamond Vista Wind Project in Marion County, KS is online. The power generated is sold to Tri County Electric Coop Inc (OK), Kohler Co, and City Utilities of Springfield (CU) under long-term contract.
- Stella Wind LLC's 201.0 MW Stella Wind Farm in Kenedy County, TX is online.
- MidAmerican Energy Co's 200.0 MW North English Wind Farm in Poweshiek County, IA is online.
- Enel Green Power Hilltopper Wind LLC's 185.0 MW HillTopper Wind Energy Project in Logan County, IL is online. The power generated is sold to Exelon Generation Co LLC, General Motors Co, Constellation Energy Group, and Bloomberg LP under long-term contract.
- Wildcat Ranch Wind Project LLC's 150.0 MW Wildcat Ranch Wind Project in Cochran County, TX is online. The power generated is sold to Southwestern Public Service Co under long-term contract.
- Blue Cloud Wind Energy LLC's 148.4 MW wind powered Blue Cloud Renewable Energy Project in Lamb County, TX is online.
- Heartland Divide Wind Project LLC's 104.0 MW Heartland Divide Wind Project in Audubon County, IA is online. The power generated is sold to Central Iowa Power Coop. under long-term contract.
- Stoneray Power Partners LLC's 100.0 MW Stoneray Wind Project in Murray County, MN is online. The power generated is sold to Southern Minnesota Municipal Power Agency under long-term contract.
- Capital Power Corp's 99.0 MW New Frontier Wind Energy Project in McHenry County, ND is online.
- Ownenergy Inc's 90.8 MW Ivester Wind Energy LLC Project in Grundy County, IA is online.
- Palmers Creek Wind Farm LLC's 44.6 MW Palmers Creek Project in Chippewa County, MN is online.
- 8 Minute Energy Renewables LLC's 252.3 MW Mount Signal Solar Farm 3 in Imperial County, CA is online.
- Duke Energy Florida's 74.9 MW Hamilton Solar Plant in Hamilton County, FL is online.
- SR Millington LLC's 53.0 MW NSA Mid South Solar Project in Shelby County, TN is online. The power generated is sold to Tennessee Valley Authority under long-term contract.
- FL Solar 5 LLC's 52.0 MW Citrus Ridge Solar Project in Orange County, FL is online. The power generated is sold to Reedy Creek Improvement District under long-term contract.
- AES Distributed Energy Inc's 28.0 MW Lawaii Solar Peaker Plant in Kauai County, HI is online. The power generated is sold to Kauai Island Utility Coop under long-term contract.
- Edenton Solar LLC's 10.0 MW Edenton Solar Project in Chowan County, NC is online.
- Eddy Solar II LLC's 10.0 MW Eddy Solar II LLC Project in McLennan County, TX is online.
- Indiana Municipal Power Agency's 7.5 MW Richmond Solar Site 2 in Wayne County, IN is online.
- SoCore 2018 ProjectCo M8 LLC's 6.6 MW solar powered Connexus Energy (Athens) Project in Isanti County, MN is online. The power generated is sold to Connexus Energy under long-term contract.
- ORNI 41 LLC's 61.8 MW McGinness Hills Geothermal Project in Lander County, NV is online. The power generated is sold to Nevada Power Co under long-term contract.



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New Generation In-Service (New Build and Expansion)

Primary Fuel Type	December 2018		January – December 2018 Cumulative		January – December 2017 Cumulative	
	No. of Units	Installed Capacity (MW)	No. of Units	Installed Capacity (MW)	No. of Units	Installed Capacity (MW)
Coal	0	0	4	10	3	45
Natural Gas	7	3,134	103	20,048	106	12,531
Nuclear	0	0	5	350	1	102
Oil	0	0	14	25	37	89
Water	0	0	10	33	14	221
Wind	12	1,943	55	6,028	83	7,415
Biomass	0	0	13	68	27	272
Geothermal Steam	2	62	4	82	2	55
Solar	15	502	429	4,181	750	6,186
Waste Heat	0	0	2	51	1	220
Other *	7	0	33	5	28	1
Total	43	5,641	672	30,881	1,052	27,137

Sources: Data derived from Velocity Suite, ABB Inc. and The C Three Group LLC. 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.

Total Available Installed Generating Capacity

	Installed Capacity (GW)	% of Total Capacity
Coal	265.96	22.23%
Natural Gas	527.69	44.11%
Nuclear	107.98	9.02%
Oil	41.68	3.48%
Water	100.21	8.38%
Wind	94.95	7.94%
Biomass	16.16	1.35%
Geothermal Steam	3.85	0.32%
Solar	35.82	2.99%
Waste Heat	1.36	0.11%
Other*	0.78	0.06%
Total	1,196.42	100.00%

Sources: Data derived from Velocity Suite, ABB Inc. and The C Three Group LLC. The data may be subject to update.



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Proposed Generation Additions and Retirements by January 2022

Primary Fuel Type	Additions		Retirements	
	No. of Units	Installed Capacity (MW)	No. of Units	Installed Capacity (MW)
Coal	1	17	57	15,244
Natural Gas	276	69,179	94	9,279
Nuclear	11	11,301	9	9,052
Oil	17	729	24	2,090
Water	237	14,764	20	634
Wind	530	97,455	0	0
Biomass	53	572	29	186
Geothermal Steam	19	943	0	0
Solar	2,278	70,904	5	2
Waste Heat	3	34	0	0
Other *	85	433	0	0
Total	3,510	266,331	238	36,487

Sources: Data derived from Velocity Suite, ABB Inc. and The C Three Group LLC. 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.

Electric Transmission Highlights

- Northern States Power Company has completed the 161.8 mile, 345 kV Briggs Road – North Madison Transmission Project.
- American Electric Power Ohio has completed the 3.0 mile, 138 kV Herlan – Blue Racer Transmission Project.
- Central Maine Power has completed the 17.2 mile 115 kV Larrabee Road – Middle Street Transmission Project.

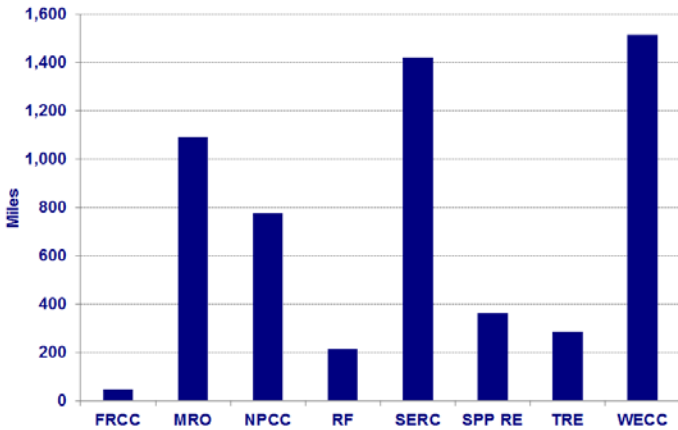
Voltage (kV)	Transmission Projects Completed				Proposed Transmission Projects In-Service by January 2021	
	December 2018	December 2017	January – December 2018 Cumulative	January – December 2017 Cumulative	High Probability of Completion	All
	Line Length (miles)					
≤230	20.2	54.0	327.3	329.3	580.1	1,815.5
345	161.8	32.5	714.5	363.1	885.0	2,678.0
500	0.0	0.0	69.4	0.0	516.0	1,227.4
Total U.S.	182.0	86.5	1,111.2	692.4	1,981.1	5,720.9

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

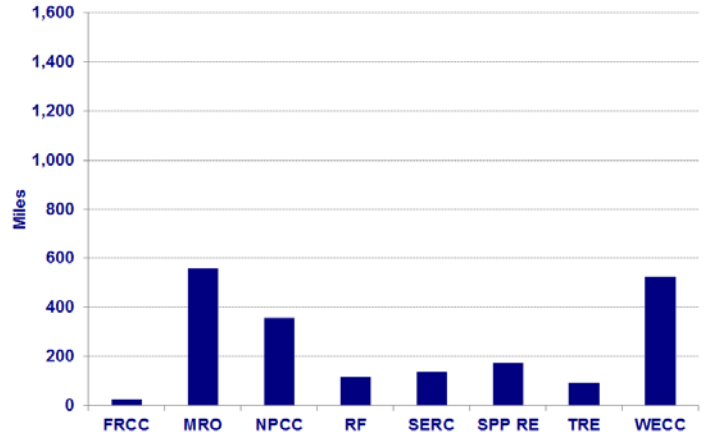


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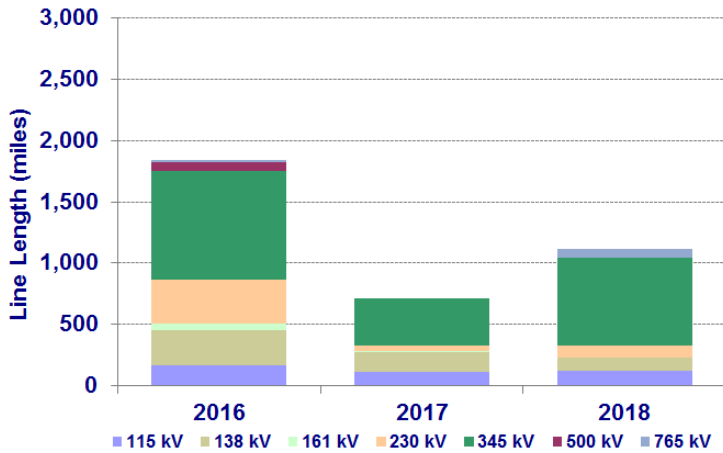
All Transmission Projects with a Proposed In-Service Date by January 2021



Transmission Projects with a High Probability of being completed by January 2021



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.