



Office of Energy Projects Energy Infrastructure Update For May 2019

Natural Gas Highlights

- Texas Eastern received authorization to place in service its Texas Industrial Market Expansion and Louisiana Market Expansion Projects, which will provide an additional 82.5 MMcf/d of firm transportation into Texas Eastern's Zone WLA in Evangeline Parish, LA, and 75 MMcf/d of firm transportation into Zone WLA in Beauregard Parish, LA.
- Tennessee Gas received authorization to complete construction and commence operation of a delivery point in Middlesex County, MA, to bypass National Grid and provide direct service to the Hanscoms Air Force Base.
- Transco received authorization to construct its Northeast Supply Enhancement Project, including 37 miles of pipeline and 53,902 HP of compression in Lancaster and Chester Counties, PA, Middlesex and Somerset Counties, NJ, and in New York State waters. The project would provide 400 MMcf/d of firm transportation service from Trasco's Compressor Station 195 in York County, PA to its offshore Rockaway Transfer Point in New York State waters.
- WBI Energy received authorization for its Line Section 22 Expansion Project, which includes replacing 9.5 miles of pipeline in Carbon and Yellowstone Counties, MT, in order to increase the maximum allowable operating pressure and provide 22.5 MMcf/d of incremental firm transportation service.
- Alliance received 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 the facilities in Northwestern North Dakota.
- Spire Storage withdrew its filing for the Rock Pipeline Project, which consisted of 10.1 miles pipeline and other equipment in Uinta County, WY to provide it access to a new interconnect with Kern River pipeline.
- ANR received authorization to replace segments of its existing 22-inch mainline, Line 301, its 24-inch loop line, Line 1-301, and its 30-inch loop line, Line 2-301, all located in Kane County, IL.
- National Fuel received authorization to plug and abandon Wells 656P, 849P, and 855P and related infrastructure at its East Branch Storage Field in McKean County, PA. The project will not result in a decrease in service to customers.
- ONEOK Rockies Midstream and Steel Reef Burke request authorization to transfer the Section 3 and Presidential Permit at a border crossing in Burke County, ND from ORM to Steel Reef.
- Tennessee Gas requests authorization for its Compressor Station 321 Turbine Replacement Project in Susquehanna County, PA, which involves replacing one turbine engine with a lower emissions model, which will also add 800 HP of compression and increase transportation capacity by 10 MMcf/d.
- NGPL requests authorization to remove 6,984 feet of its Louisiana Line Nos. 1 and 2 and replace them with 9,500 feet of new pipeline in Jefferson County, TX in order relocate the lines from land to be used to construct the Golden Pass LNG Export Terminal.
- Gulf South requests authorization to replace two old compressors at its Arnaudville Compressor Station in St. Landry Parish, LA, with a new 11,107 HP unit. This project would not affect daily design capacity or maximum daily capability.
- Equitrans requests authorization for its Tri-State Corridor Project, including 16.7 miles of pipeline in Washington County, PA and Brooke County, WV, that would deliver up to 140 MMcf/d of natural gas to a new power plant in Brooke County, WV.
- Florida Gas requests authorization for its Putnam Expansion Project, including 20.7 miles of new looped pipeline and other facilities in Columbia, Union, Clay, Putnam, and Orange Counties FL, which would provide up to 169 MMcf/d of firm capacity to Seminole Electric Coop.
- Bluewater Gas Storage requests authorization to construct an 11,150 HP compressor station in Macomb County, MI in order to restore the storage field's firm delivery capacity to its authorized 500,000 Mcf/d.



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Natural Gas Activities in May 2019

Status	No. of Projects	Storage Capacity (Bcf)	Deliverability (MMcf/d)	Capacity (MMcf/d)	Miles of Pipeline	Compression (HP)
Pipeline						
Placed in Service	1			158	0	0
Certificated	2			423	57	53,902
Proposed	5			319	39	11,907
Storage						
Placed in Service	0	0	0			0
Certificated	0	0	0			0
Proposed	1	0	0			11,150
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 May 31, 2019 January through May 31, 2018

Status	No. of Projects	Storage Capacity (BCF)	Deliverability (MMcf/d)	Capacity (MMcf/d)	Miles of Pipeline	Compression (HP)
Pipeline						
Placed in Service	5			4,101.0	1.4	282,400
through May 31, 2018	4			3,230.0	79.3	116,020
Certificated	14			9,988.4	393.6	584,535
through May 31, 2018	25			5,060.7	286.1	149,395
Storage						
Placed in Service	0	0.0	0.0			0
through May 31, 2018	0	0.0	0.0			0
Certificated	1	0.0	79.0			0
through May 31, 2018	3	3,600.3	143.0			0
LNG (Import & Export)						
Placed in Service (Export)	2	10.1	1,413.0			0
through May 31, 2018	1	0.0	825.0			0
Certificated (Import/Export)	4	34.3	7,279.0			0
through May 31, 2018	0	0.0	0.0			0

Source: Staff Database



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Hydropower Highlights (nonfederal)

- NorthWestern Corporation was issued an order raising the capacity of its Missouri-Madison Project No. 2188 from 305.240 to 308.880 MW. The project is located on the Missouri and Madison Rivers in Gallatin, Madison, Lewis and Clarke, and Cascade Counties, MT.
- Igiugig Village Council was issued a pilot project for the construction and operation of the 0.070 MW Igiugig Hydrokinetic Project No. 13511. The project is located on the Kvichak River in the Lake and Peninsula Borough, near the town of Igiugig, AK.
- The Domestic and Foreign Missionary Society of the Protestant Episcopal Diocese of Alabama was issued an original order for exemption for the 0.140 MW Camp McDowell Hydroelectric Project No. 14793. The project is located on Clear Creek in Winston County, AL.
- Oregon State University filed an application for an original license for the proposed 20.0 MW PacWave South Project No. 14616, a marine hydrokinetic project. The project is located off the central Oregon coast near the city of Newport, in Lincoln County, OR.

Hydropower Project Activities in May 2019

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	1	20.000	1	20.000
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
Issued								
License	0	0	0	0	1	0.070	1	0.070
10-MW Exemption	1	0.140	0	0	0	0	1	0.140
Capacity Amendment	1	3.640	0	0	0	0	1	3.640
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 May 31, 2019)

Status	Conventional		Pumped Storage		Hydrokinetic		Total No. of Projects	Total Capacity (MW)
	No.	Capacity (MW)	No.	Capacity (MW)	No.	Capacity (MW)		
Filed								
License	1	0.850	0	0	1	20.000	2	20.850
10-MW Exemption	0	0	0	0	0	0	0	0
Capacity Amendment	2	3.900	0	0	0	0	2	3.900
Conduit Exemption	0	0	0	0	0	0	0	0
Issued								
License	0	0	1	393.300	1	0.070	2	393.370
10-MW Exemption	1	0.140	0	0	0	0	1	0.140
Capacity Amendment	1	3.640	0	0	0	0	1	3.640
Conduit Exemption	0	0	0	0	0	0	0	0



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Status	Conventional		Pumped Storage		Hydrokinetic		Total No. of Projects	Total Capacity (MW)
	No.	Capacity (MW)	No.	Capacity (MW)	No.	Capacity (MW)		
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

Electric Generation Highlights

- Shell Oil Co Deer Park's 5.0 MW rerate of the Shell Deer Park natural gas-fired Project in Harris County, TX is online. The power generated is sold to Shell Oil Co. Deer Park under long-term contract.
- Carroll County Energy LLC's 15.6 MW expansion at the Carroll County Project in Carroll County, OH is online.
- CPS Energy's 5.0 MW CPS Energy San Antonio Solar Storage Project in Bexar County, TX is online.

New Generation In-Service (New Build and Expansion)

Primary Fuel Type	May 2019		January – May 2019 Cumulative		January – May 2018 Cumulative	
	No. of Units	Installed Capacity (MW)	No. of Units	Installed Capacity (MW)	No. of Units	Installed Capacity (MW)
Coal	0	0	0	0	4	10
Natural Gas	1	5	34	4,156	44	7,189
Nuclear	0	0	1	155	3	30
Oil	4	16	9	42	13	24
Water	0	0	4	29	8	104
Wind	1	0	20	1,547	18	1,924
Biomass	0	0	0	0	12	101
Geothermal Steam	0	0	0	0	3	36
Solar	6	17	131	1,585	264	2,221
Waste Heat	0	0	0	0	1	50
Other *	2	0	14	0	12	5
Total	14	38	213	7,514	382	11,694



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Total Available Installed Generating Capacity

	Installed Capacity (GW)	% of Total Capacity
Coal	257.54	21.54%
Natural Gas	531.31	44.43%
Nuclear	107.30	8.97%
Oil	39.85	3.33%
Water	100.43	8.40%
Wind	98.63	8.25%
Biomass	16.04	1.34%
Geothermal Steam	3.83	0.32%
Solar	38.71	3.24%
Waste Heat	1.32	0.11%
Other*	0.78	0.07%
Total	1,195.75	100.00%

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.

Generation Capacity Additions and Retirements (June 2019 – May 2022)

From ABB Velocity Suite's Generating Unit Capacity Dataset

Primary Fuel Type	All Proposed Additions		Proposed Additions Under Construction**		Proposed Retirements	
	No. of Units	Installed Capacity (MW)	No. of Units	Installed Capacity (MW)	No. of Units	Installed Capacity (MW)
Coal	1	17	1	17	57	17,054
Natural Gas	222	59,449	107	28,263	108	10,105
Nuclear	9	7,781	1	1,100	8	8,386
Oil	17	717	6	25	21	1,065
Water	217	14,608	84	1,909	19	526
Wind	536	99,037	160	27,128	1	239
Biomass	61	624	27	467	32	139
Geothermal Steam	18	860	6	280	0	0
Solar	2,528	85,416	530	16,303	1	1
Waste Heat	4	34	2	29	0	0
Other *	129	475	29	7	1	2
Total	3,742	269,018	953	75,528	248	37,517

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.

** Under Constructions includes units that have started site preparation or construction. It also includes units that are in the testing phase.



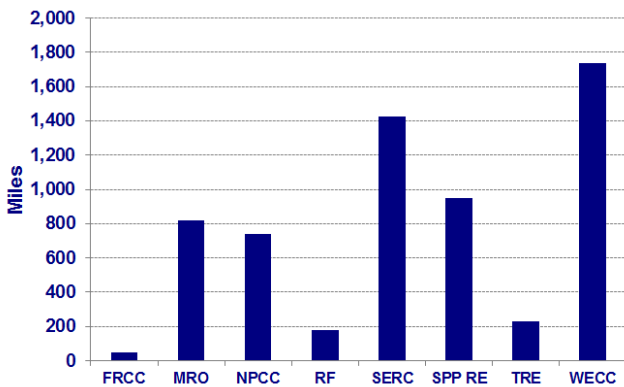
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Electric Transmission Highlights

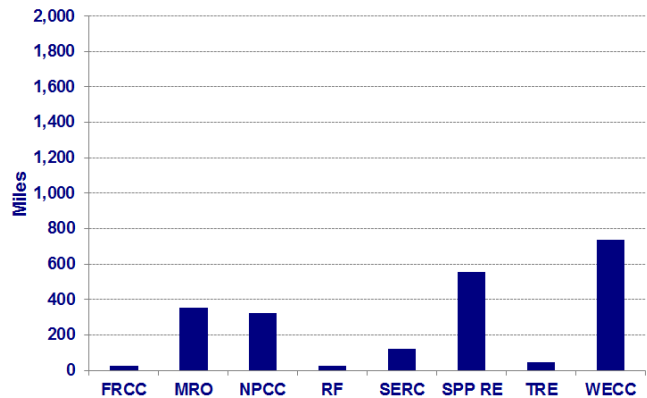
- FirstEnergy has completed the 18.0 mile, 115 kV Central City West - Bedford North Transmission Project in PA.

Voltage (kV)	Transmission Projects Completed				Proposed Transmission Projects In-Service by June 2021	
	May 2019	May 2018	January – May 2019 Cumulative	January – December 2018 Cumulative	High Probability of Completion	All
	Line Length (miles)					
≤230	18.0	8.4	109.0	392.3	454.3	1,564.0
345	0.0	8.0	169.0	819.3	915.4	2,404.4
500	0.0	0.0	7.4	69.4	813.0	1,816.0
Total U.S.	18.0	16.4	285.4	1,281.0	2,182.7	5,784.4

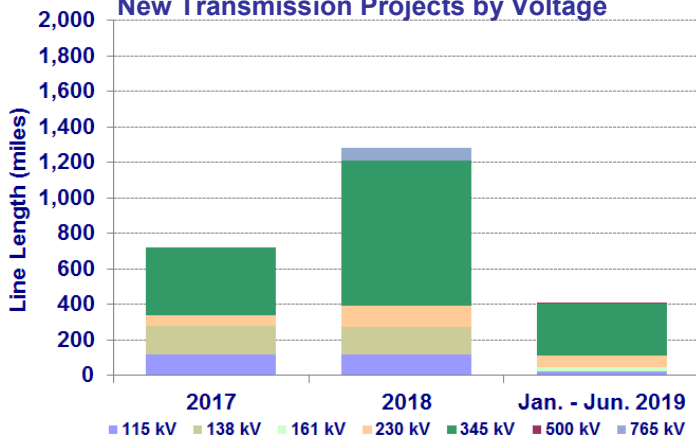
All Transmission Projects with a Proposed In-Service Date by June 2021



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



New Transmission Projects by Voltage



Sources: Data derived from North American Electric Reliability Corporation (NERC) Electricity Supply and Demand (ES&D) 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.