



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

Natural Gas Highlights

- Northern Natural placed into service its Permian Expansion II Project which will provide 112 MMcf/d of capacity to serve markets in its Northern Field Area system in TX.
- Southern Natural received authorization to place into service its North Main Lines Relocation Project. This project will allow Southern Natural to abandon and construct pipeline facilities in response to longwall mining operations in Jefferson County, AL.
- Midwestern placed into service its Herscher Compressor Project which will provide 125 MMcf/d of capacity to serve markets in the Midwest.
- Cameron Interstate Pipeline received authorization to amend its authorized Cameron Pipeline Expansion Project by decreasing the diameter of 3.58 miles of pipeline located in Calcasieu Parish, LA from 42 inches to 36 inches and to increase the design capacity by an additional 20 MMcf/d.
- East Tennessee received authorization to construct and operate its Loudon Expansion Project which will provide 40 MMcf/d of capacity for the Tate & Lyle manufacturing facility in Loudon County, TN.
- Tennessee received authorization to construct and operate its Connecticut Expansion Project which will provide 72.1 MMcf/d of capacity from an interconnection with Iroquois in Wright, NY to delivery points on Tennessee's existing 200 and 300 Lines in Hartford County, CT
- Natural Gas Pipeline Company of America received authorization to construct and operate its Chicago Market Expansion Project which will provide 238 MMcf/d of northbound capacity on its system for delivery to markets in the Chicago, IL area.
- Columbia received authorization to construct and operate replacement facilities on its WB2VA Line in Hardy County, WV and Shenandoah, Page, Rockingham, and Greene Counties, VA. This is part of a modernization program to address aging infrastructure, enhance pipeline safety, and increase customer reliability on the Columbia system.
- Texas Gas received authorization to construct and operate its Northern Supply Access Project which will provide 384 MMcf/d of bi-directional capacity from the northern end of its existing system in OH to markets in the Midwest and Gulf Coast.
- Florida Gas received authorization to construct and operate its Jacksonville Expansion Project which will provide 15 MMcf/d of capacity to serve markets in FL.
- El Paso received authorization to increase its export capacity by 42.6 MMcf/d at its existing Monument 90 border crossing located at the International Boundary between the U.S. and Mexico near the town of Naco in Cochise County, AZ.
- Equitrans received authorization to restate the certificated working gas capacities for the Allegheny Valley Connector storage facilities located in Cambria, Clarion, Allegheny, and Westmoreland Counties, PA from 15.1 Bcf to 11.2 Bcf.
- Corpus Christi Pipeline received authorization to vacate the Taft Compressor Station and metering facilities authorized in its Corpus Christi Pipeline Project to transport gas bi-directionally to the Corpus Christi LNG export terminal in San Patricio and Nueces Counties, TX.
- Dominion Carolina received authorization to vacate the 0.25 mile Cone Mills Lateral Extension and meter facilities located in Chester County, SC, and previously authorized in the Edgemoor Compressor Project.
- The Commission denied requests by Pacific Connector Pipeline and Jordan Cove LNG to construct and operate pipeline facilities to provide 1,060 MMcf/d of capacity to the Jordan Cove LNG export terminal, a liquefaction export facility (900 MMcf/d deliverability) located on the North Spit of Coos Bay in Coos County, OR.
- Dominion Carolina requests authorization to construct and operate its Transco to Charleston Project which would provide 80 MMcf/d of capacity to serve markets in Charleston, Dillon, Lexington, and Marlboro Counties, SC.
- Texas LNG Brownsville requests authorization to construct and operate a LNG export facility in the Port of Brownsville, TX. The facility would provide an export deliverability of 550 MMcf/d from two LNG trains.
- Columbia commenced the Commission's pre-filing process to abandon, replace, construct, and operate facilities as part of its B System Project located in Fairfield and Franklin Counties, OH.
- Atlantic Coast Pipeline requests authorization to amend its Atlantic Coast Pipeline Project to reflect route changes to avoid environmental concerns in the Cheat and Shenandoah Mountains and to meet Forest Service requirements.
- Texas Eastern requests authorization to amend its Access South Project by constructing, operating, replacing, and abandoning additional pipeline facilities in Attala County, MS. The Access South Project is part of Texas Eastern's Access South, Adair Southwest, and Lebanon Extension Projects.



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Natural Gas Activities in March 2016

Status	No. of Projects	Storage Capacity (Bcf)	Deliverability (MMcf/d)	Capacity (MMcf/d)	Miles of Pipeline	Compression (HP)
Pipeline						
Placed in Service	3			237.0	3.9	30,900
Certificated	8			811.7	32.4	68,565
Proposed	4			80.0	117.8	20,400
Storage						
Placed in Service	0	0.0	0.0			0
Certificated	0	0.0	0.0			0
Proposed	0	0.0	0.0			0
LNG (Import & Export)						
Placed in Service	0	0	0			0
Certificated (Import/Export)	0	0	0			0
Proposed (Export)	1	8.66	550			0

Source: Staff Database

Natural Gas Activities through March 31, 2016 January through March 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 March 31, 2015	6 4			1,134.0 629.0	51.7 21.7	46,800 30,970
Certificated Through March 31, 2015	16 12			4,965.9 2,537.0	789.4 140.3	523,622 123,673
Storage						
Placed in Service through March 31, 2015	0 2	0.0 2.4	0 53			0 0
Certificated through March 31, 2015	0 1	0.0 1.7	0 0			0 0
LNG (Import & Export)						
Placed in Service Through March 31, 2015	0 0	0 0	0 0			0 0
Certificated (Import/Export) through March 31, 2015	0 0	0 0	0 0			0 0

Source: Staff Database

Hydropower Highlights (nonfederal)

- Clean River Power MR-1, LLC was issued an original license for the proposed 4.0 MW Devola Lock and Dam Water Power Project No. 13405. The project will be located at the Ohio Department of Natural Resources' Devola Dam on the Muskingum River in Muskingum Township, Washington County, OH.
- Clean River Power MR-2, LLC was issued an original license for the proposed 5.0 MW Lowell Lock and Dam Water Power Project No. 13407. The project will be located at the Ohio Department of Natural Resources' Lowell Dam on the Muskingum River in the Village of Lowell, Washington County, OH.
- Northbrook Lyons Falls, LLC was issued an order amending license to raise the capacity of its Lyons Falls Project No. 2548 from 8.640 MW to 14.250 MW. The project is located on the Moose and Black Rivers in Lewis County, NY.



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Hydropower Project Activities in March 2016

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	0	0	0	0	0	0	0	0
Conduit Exemption	0	0	0	0	0	0	0	0
Issued								
License	2	9.000	0	0	0	0	2	9.000
10-MW Exemption	0	0	0	0	0	0	0	0
Capacity Amendment	1	5.610	0	0	0	0	1	5.610
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 March 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	1	1.500	0	0	0	0	1	1.500
10-MW Exemption	0	0	0	0	0	0	0	0
Capacity Amendment	1	0.100	0	0	0	0	1	0.100
Conduit Exemption	0	0	0	0	0	0	0	0
Issued								
License	2	9.000	0	0	0	0	2	9.000
10-MW Exemption	0	0	0	0	0	0	0	0
Capacity Amendment	1	5.610	0	0	0	0	1	5.610
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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Electric Generation Highlights

- Latigo Wind Park LLC's 60 MW Latigo Wind Project in UT in San Juan County, UT is online. The power generated is sold to PacifiCorp under long-term contract.
- Jericho Mountain Wind Co.'s 12 MW Jericho Mountain Wind Project in Coos County, NH is online.
- Blythe Solar 110 LLC's 38.7 MW Blythe Solar 110 Project in Riverside County, CA is online.
- Old Mill Solar LLC's 6 MW Old Mill Solar Project in Klamath County, OR is online. The power generated is sold to PaciCorp under long-term contract.
- Long Farm 46 Solar LLC's 6.9 MW Long Farm 46 Solar Project in Northampton County, NC is online. The power generated is sold to Dominion North Carolina Power under long-term contract.
- SoINCPower10 LLC's 6.6 MW SoINCPower10 Solar Project in Perquimans County, NC is online. The power generated is sold to Dominion North Carolina Power under long-term contract.
- Nash 97 Solar LLC's 5 MW Nash 97 Solar Project in Nash County, NC is online. The power generated is sold to Duke Energy Progress under long-term contract.
- Silicon Ranch Corp.'s 4 MW SR Clinch Carey Phase A Solar Project in Weld County, CO is online. The power generated is sold to Poudre Valley Rural Electric Association Inc. under long-term contract.
- Half Moon Ventures LLC's 4.2 MW Minster Solar Project in Auglaise County, OH is online. This project includes an energy storage capacity.
- Barlow Project Inc.'s municipal solid waste-fired 7.3 MW Kauai Waste to Energy Project in Kauai County, HI is online. The power generated is sold to Kauai Island Utility Coop. under long-term contract.
- Bowerman Power LFG LLC's 23.8 MW Bowerman LFGTE Project in Orange County, CA is online. A portion of the power generated is sold to the Anaheim Public Utilities Department under long-term contract.

New Generation In-Service (New Build and Expansion)

Primary Fuel Type	March 2016		January – March 2016 Cumulative		January – March 2015 Cumulative	
	No. of Units	Installed Capacity (MW)	No. of Units	Installed Capacity (MW)	No. of Units	Installed Capacity (MW)
Coal	0	0	0	0	0	0
Natural Gas	0	0	2	18	10	458
Nuclear	0	0	0	0	0	0
Oil	0	0	0	0	0	0
Water	0	0	1	29	1	2
Wind	2	72	9	707	10	861
Biomass	9	33	9	33	10	16
Geothermal Steam	0	0	0	0	1	45
Solar	9	75	44	522	57	404
Waste Heat	0	0	0	0	0	0
Other *	1	0	2	0	1	0
Total	21	180	67	1,309	90	1,786

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.



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Total Available Installed Generating Capacity

	Installed Capacity (GW)	% of Total Capacity
Coal	301.64	25.85%
Natural Gas	500.13	42.86%
Nuclear	107.03	9.17%
Oil	44.68	3.83%
Water	100.12	8.58%
Wind	74.55	6.39%
Biomass	16.71	1.43%
Geothermal Steam	3.90	0.33%
Solar	16.12	1.38%
Waste Heat	1.16	0.10%
Other*	0.77	0.07%
Total	1,166.81	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.

Electric Transmission Highlights

- The California ISO board of governors approved 13 reliability driven transmission projects with an estimated cost of \$288 million.
- The Bonneville Power Administration has decided on the route for the Northern Mid-Columbia Joint Project. The 8.4 mile, 230 kV line from the Rapids Switchyard to the Columbia Substation is expected to start construction in 2017.

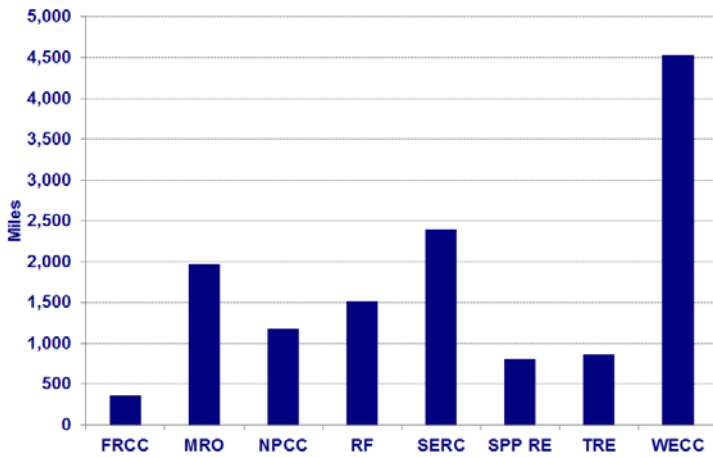
Voltage (kV)	Transmission Projects Completed				Proposed Transmission Projects In-Service by March 2018	
	March 2016	March 2015	January – March 2016 Cumulative	January – December 2015 Cumulative	High Probability of Completion	All
	Line Length (miles)					
≤230	0.0	27.0	38.0	260.3	2,668.8	5,402.0
345	0.0	0.0	0.0	1,048.3	2,202.5	4,389.3
500	0.0	0.0	0.0	294.0	642.9	3,829.9
Total U.S.	0.0	27.0	38.0	1,602.6	5,514.2	13,621.2

Sources: Data derived from Staff Database and U.S. Electric Transmission Projects ©2016 The C Three Group, LLC.

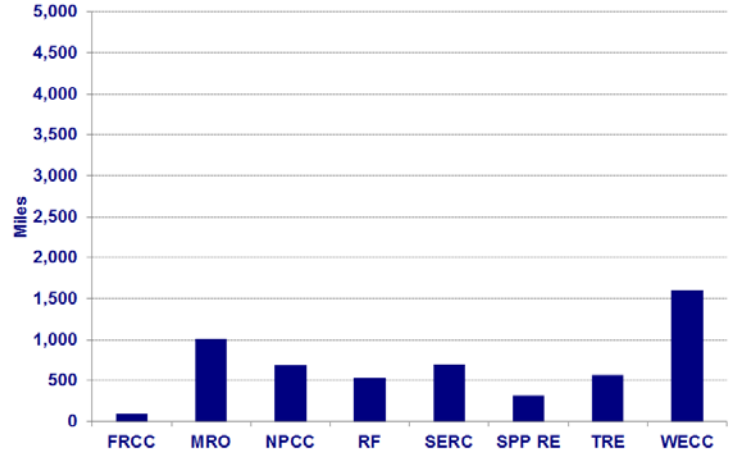


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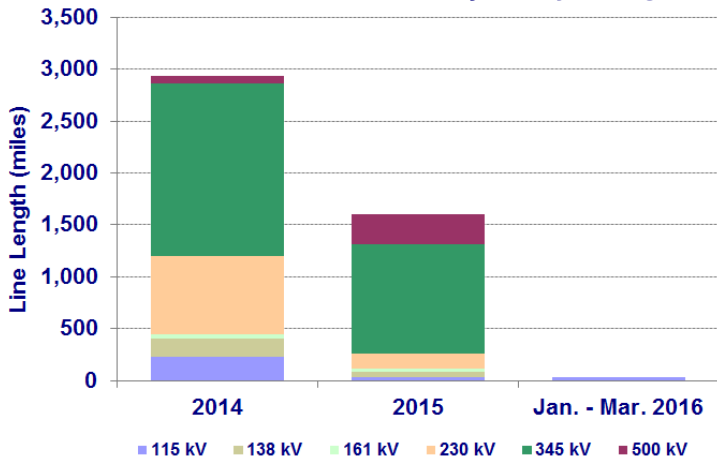
All Transmission Projects with a Proposed In-Service Date by March 2018



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



New Transmission Projects by Voltage



Sources: Data derived from Staff Database and U.S. Electric Transmission Projects ©2016 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.