



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

Natural Gas Highlights

- Columbia Gas received authorization to place partially in service its WB Xpress Project which will provide 1,300 MMcf/d of bi-directional capacity to markets in western WV and northern VA.
- WBI Energy received authorization to place in service its Valley Expansion Project, in Clay County, MN and Cass, Barnes, Stutsman and Burleigh Counties, ND, which will provide 40 MMcf/d of new capacity to customers in ND.
- Columbia Gas received authorization to place in service its Mountaineer XPress Project, which will provide 2,700 MMcf/d of capacity from receipt points in WV to pooling points on the Columbia Gas system and to Columbia Gulf at Leach, KY.
- NEXUS received authorization to place in service the Greenfield Mainline pipeline, the Hanoverton Compressor Station, and four metering and regulating facilities of the NEXUS Gas Transmission Project in Ohio and Michigan, which will provide 1,500 MMcf/d of new capacity into eastern MI.
- ANR received authorization to place in service its Wisconsin South Expansion Project, which will provide 230 MMcf/d of additional capacity from its Sandwich Compressor Station in Kendall County, IL to markets in Northern IL and WI.
- Northern Natural received authorization to place in service its Cedar Station Upgrade Project, which will provide increased pressure to Northern States Power Company's Black Dog Generating Station in Eagan, MN.
- Paiute received authorization to place in service its Paiute 2018 Expansion Project, which includes of 8.5 miles of upsized or looped pipeline, and will provide 4.6 MMcf/d of additional capacity in Western Nevada.
- Southern Star received authorization to increase the Maximum Allowable Operating Pressure and Maximum Operating Pressure on its Line QB in Johnson County, KS. This change will not increase the system's capacity.
- Transco received authorization to abandon its North Padre Island Block 956 "B" Platform, and its offshore lateral extending 3.5 miles from North Padre Island Block 956 in Offshore Texas.
- PNGTS received authorization for its Portland X-Press Project, which would increase the certificated capacity on its system by 39.8 MMcf/d from Pittsburgh, NH to Westbrook, ME, and by 1.6 MMcf/d from Westbrook to Dracut, ME; and authorization to increase its import/export capacity from 210 to 274 MMcf/d.
- Texas Eastern received authorization for its Rahway River Additional Pipe Replacement Project, which would replace an additional 400-foot segment of its Line 1 pipeline in Woodbridge, NJ.
- Panhandle received authorization to abandon by sale to its affiliate, ETC Field Services, the Deer Loop Lateral Facilities, consisting of 20.6 miles of pipeline and appurtenances in Carson, Hutchinson, and Moore Counties, TX.
- Sierrita received Section 7C authorization to build a new 15,900 HP compressor station in Pima County, AZ, which would allow it to increase firm transportation into Mexico by 323 MMcf/d, and Section 3 authorization to increase the capacity at its border crossing from 201 to 627 MMcf/d.
- National Grid LNG received authorization to construct and operate its Field Point Liquefaction Project, consisting of liquefaction facilities that would provide 20 MMcf/d of deliverability at its existing LNG facility in Providence, RI.
- UGI LNG received authorization to construct and operate its Temple Truck Rack Expansion Project, including two new trailer loading and unloading racks at its Temple LNG storage facility in Berks County, PA.
- Northern Natural requests authorization to abandon by sale to DKM Enterprises 146.6 miles of pipeline on its M580A and M530A system and other appurtenant facilities. The A-line is located in Otoe and Cass counties, NE, and Mills, Pottawattamie, Cass, Audubon, Guthrie, Greene, and Boone counties, IA.
- Tennessee requests authorization for its 261 Upgrade Projects, which would include 2.1 miles of new pipeline and 4,418 HP of additional compression in order to increase capacity by 72.4 Bcf/d in Connecticut and Massachusetts.
- OkTex Pipeline requests authorization to purchase from ONEOK, and operate and maintain in interstate commerce 2.5 miles of pipeline in Beckham County, OK.
- Gulf South requests authorization to construct two 5,000 horsepower compressors within its existing Petal III Compressor Station, a dehydration unit, a thermal oxidizer, and other appurtenant facilities in order to increase operational flexibility at its Petal Gas Storage Facility in Forrest County, MS.
- National Fuel requests authorization to abandon Zoar Well 804-I at its Zoar storage field in Erie County, NY. The proposed abandonment will not affect service.
- Perryville Gas requests authorization to reclassify the working and base gas capacities in Cavern PGS-1 at its storage facility in Franklin and Richland Parishes, LA.
- Sabine Pass LNG requests authorization for its Third Berth Expansion Project, which would add an additional berth at its LNG terminal in Cameron Parish, LA.



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Natural Gas Activities in October 2018

| Status | No. of Projects | Storage Capacity (Bcf) | Deliverability (MMcf/d) | Capacity (MMcf/d) | Miles of Pipeline | Compression (HP) |
|----------------------------------|-----------------|------------------------|-------------------------|-------------------|-------------------|------------------|
| Pipeline | | | | | | |
| Placed in Service | 7 | | | 5,775.6 | 509 | 553,813 |
| Certificated | 2 | | | 362.8 | 0 | 15,900 |
| Proposed | 1 | | | 72.4 | 2 | 4,418 |
| Storage | | | | | | |
| Placed in Service | 0 | 0.0 | 0.0 | | | 0 |
| Certificated | 0 | 0.0 | 0.0 | | | 0 |
| Proposed | 1 | 0.0 | 350.0 | | | 10,000 |
| LNG (Import & Export) | | | | | | |
| Placed in Service (Export) | 0 | 0.0 | 0.0 | | | 0 |
| Certificated (Import/Export) | 1 | 0.0 | 20.0 | | | 0 |
| Proposed (Import/Export) | 0 | 0.0 | 0.0 | | | 0 |

Source: Staff Database

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

| Status | No. of Projects | Storage Capacity (BCF) | Deliverability (MMcf/d) | Capacity (MMcf/d) | Miles of Pipeline | Compression (HP) |
|--|-----------------|------------------------|-------------------------|---------------------|-------------------|----------------------|
| Pipeline | | | | | | |
| Placed in Service through October 31, 2017 | 17 22 | | | 10,491.8 5,832.5 | 615.0 499.8 | 737,613 354,569 |
| Certificated through October 31, 2017 | 44 34 | | | 9,044.9 23,328.9 | 643.0 2,506.5 | 299,995 1,439,392 |
| Storage | | | | | | |
| Placed in Service through October 31, 2017 | 0 1 | 0.0 7.5 | 0.0 600.0 | | | 0 9,500 |
| Certificated through October 31, 2017 | 4 1 | 3,600.3 0.0 | 152.0 10.0 | | | 0 0 |
| LNG (Import & Export) | | | | | | |
| Placed in Service (Export) through October 31, 2017 | 1 3 | 0.0 0.0 | 825.0 1,493.0 | | | 0 0 |
| Certificated (Import/Export) through October 31, 2017 | 1 0 | 0.0 0.0 | 20.0 0.0 | | | 0 0 |

Source: Staff Database



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Hydropower Highlights (nonfederal)

- New England Hydropower Company LLC. filed an application for a small hydropower project exemption from licensing the 0.420 MW Hydro Albion Dam Hydroelectric Project No. 14633. The project would be located on the Blackstone River at the existing Albion Dam in the Towns of Lincoln and Cumberland, Providence County, RI.
- New England Hydropower Company LLC. filed an application for a small hydropower project exemption from licensing the 0.507 MW Ashton Dam Hydroelectric Project No. 14634. The project would be located on the Blackstone River at the existing Ashton Dam near the Town of Cumberland, Providence County, RI.
- Dakota County, Minnesota filed an application to increase the capacity of its Lake Byllesby Project No. 6299 from 1.900 MW to 4.000 MW. The project is located on the Cannon River in Dakota and Goodhue County, MN.

Hydropower Project Activities in October 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 | 1 | 2.100 | 0 | 0 | 0 | 0 | 1 | 2.100 |
| Conduit Exemption | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Issued | | | | | | | | |
| 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 |
| 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 October 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 | 2 | 3.840 | 1 | 335.000 | 0 | 0 | 3 | 338.840 |
| Conduit Exemption | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Issued | | | | | | | | |
| License | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 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 |



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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 | 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

Electric Generation Highlights

- Clean Energy Future Lordstown LLC's 940.0 MW natural gas-fired Lordstown Combined Cycle Plant in Trumbull County, OH is online.
- Duke Energy Florida's 820.1 MW natural gas-fired expansion of Crystal River Plant in Citrus County, FL is online.
- CPV Valley LLC's 770.0 MW natural gas-fired expansion of CPV Valley Project in Orange County, NY is online.
- Lackawanna Energy Center LLC's 465.0 MW natural gas-fired expansion of Lackawanna Energy Center in Lackawanna County, PA is online.
- Architect of The Capitol's 19.5 MW natural gas-fired Capitol Power Plant in DC is online.
- City of Tallahassee Florida's 18.6 MW natural gas-fired Sub 12 Project in Leon County, FL is online.
- West Deptford Energy LLC's 8.1 MW natural gas-fired West Deptford Power Project in Gloucester County, NJ is online.
- Xcel Energy Inc's 600.0 MW Rush Creek Wind Project in Cheyenne County, CO is online.
- Stella Wind LLC's 201.0 MW Stella Wind Farm in Kenedy County, TX is online.
- Live Oak Wind Project LLC's 201.0 MW Wilson Ranch in Schleicher County, TX is online.
- CMS Enterprises Co's 100.0 MW Northwest Ohio Wind Energy Project in Paulding County, OH is online. The power generated is sold to General Motors Co under long-term contract.
- Aurora County Wind LLC's 20.7 MW Aurora County Wind Project in Aurora County, SD is online.
- Brule County Wind LLC's 20.7 MW Brule County Wind Project in Brule County, SD is online.
- Midway Solar LLC's 182.0 MW Midway Solar (TX) Project in Pecos County, TX is online. The power generated is sold to Austin Energy under long-term contract.
- Tampa Electric Co.'s 74.4 MW Balm Solar Project in Hillsborough County, FL is online.
- Brantley Farm Solar LLC's 50.2 MW Brantley Farm Solar Facility in Nash County, NC is online. The power generated is sold to Duke Energy Progress under long-term contract.
- OCI Lamesa Solar II LLC's 50.0 MW expansion of Lamesa Solar Facility in Dawson County, TX is online. The power generated is sold to the City of Garland, TX under long-term contract.
- Bluebell Solar LLC's 30.0 MW Capricorn Ridge Solar Project in Coke County, TX is online. The power generated is sold to the City of Denton, TX under long-term contract.
- Gasna 6P LLC's 21.5 MW San Joaquin Solar Project in Fresno County, CA is online.
- Adams Nielson Solar LLC's 19.2 MW Adams Nielson Solar Project in Adams County, WA is online. The power generated is sold to Avista under long-term contract.
- Virginia Electric & Power Co's 17.0 MW UVA Hollyfield Solar Facility in King William County, VA is online. The power generated is sold to the University of Virginia under long-term contract.
- Dominion Energy Inc's 15.0 MW UVA Puller Solar Facility in Middlesex County, VA is online. The power generated is sold to the University of Virginia under long-term contract.
- Geenex LLC's 10.0 MW Carl Friedrich Gauss Solar Facility in Halifax County, NC is online. The power generated is sold to Dominion North Carolina Power under long-term contract.
- Quakertown Farms LLC's 10.0 MW Quakertown Solar Farm No. 1 in Hunterdon County, NJ is online.
- NJR Clean Energy Ventures III Corp's 9.2 MW Springfield Solar Project in Burlington County, NJ is online.
- El Paso Electric Co's 5.0 MW Holloman Solar Facility in Oteron County, NM is online.



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New Generation In-Service (New Build and Expansion)

| Primary Fuel Type | October 2018 | | January – October 2018 Cumulative | | January – October 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 | 0 | 0 |
| Natural Gas | 8 | 3,041 | 91 | 15,762 | 87 | 11,338 |
| Nuclear | 0 | 0 | 4 | 185 | 1 | 102 |
| Oil | 0 | 0 | 11 | 18 | 19 | 54 |
| Water | 0 | 0 | 10 | 33 | 13 | 218 |
| Wind | 7 | 1,148 | 38 | 3,735 | 58 | 5,025 |
| Biomass | 0 | 0 | 11 | 66 | 25 | 265 |
| Geothermal Steam | 0 | 0 | 2 | 21 | 1 | 18 |
| Solar | 38 | 543 | 400 | 3,555 | 500 | 3,889 |
| Waste Heat | 1 | 1 | 4 | 131 | 1 | 220 |
| Other * | 2 | 0 | 25 | 5 | 24 | 1 |
| Total | 56 | 4,733 | 600 | 23,521 | 729 | 21,130 |

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 | 266.16 | 22.34% |
| Natural Gas | 525.06 | 44.08% |
| Nuclear | 107.81 | 9.05% |
| Oil | 41.68 | 3.50% |
| Water | 100.49 | 8.44% |
| Wind | 92.70 | 7.78% |
| Biomass | 16.16 | 1.36% |
| Geothermal Steam | 3.79 | 0.32% |
| Solar | 35.17 | 2.95% |
| Waste Heat | 1.43 | 0.12% |
| Other* | 0.78 | 0.07% |
| Total | 1,191.21 | 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 November 2021

| Primary Fuel Type | Additions | | Retirements | |
|-------------------|--------------|-------------------------|--------------|-------------------------|
| | No. of Units | Installed Capacity (MW) | No. of Units | Installed Capacity (MW) |
| Coal | 1 | 17 | 74 | 19,255 |
| Natural Gas | 278 | 72,612 | 112 | 11,945 |
| Nuclear | 8 | 8,021 | 8 | 8,040 |
| Oil | 15 | 725 | 22 | 166 |
| Water | 251 | 14,816 | 19 | 633 |
| Wind | 488 | 89,730 | 1 | 50 |
| Biomass | 54 | 588 | 24 | 124 |
| Geothermal Steam | 21 | 1,005 | 0 | 0 |
| Solar | 2,130 | 63,681 | 5 | 2 |
| Waste Heat | 5 | 46 | 0 | 0 |
| Other * | 86 | 433 | 0 | 0 |
| Total | 3,337 | 251,674 | 265 | 40,215 |

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

- ITC Midwest has completed the 55.0 mile, 345 kV Lakefield - Huntley (formerly Winnebago) Transmission Project in MN and the 19.0 mile, 345 kV Ledyard – Burt Transmission Project in IA. Both projects are apart of the Multi-Value Project Portfolio 3 that connects MN and IA.
- American Transmission Company has completed the 80.0 mile North Appleton – Morgan Transmission Project in WI. The project consist of 345 kV and 138 kV transmission lines and is apart of the Bay Lake Project.
- Entergy has completed the 12.0 mile, 230 kV Carlyss – Graywood (Solac) Transmission Project in LA.
- Sharyland Distribution and Transmission Services has completed the 17.0 mile, 138 kV Sales Ranch – Natural Dam Transmission Project in TX.

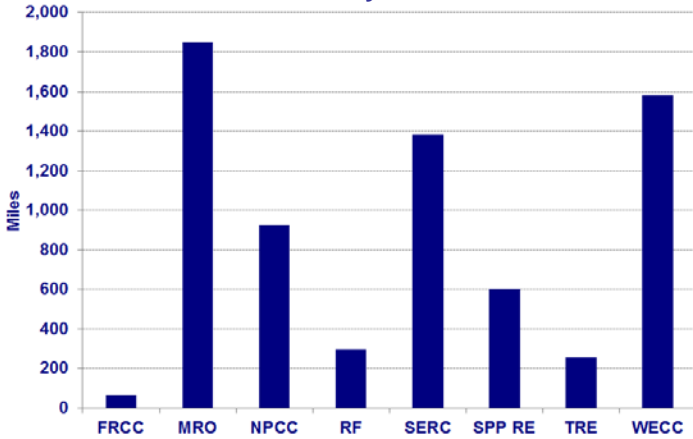
| Voltage (kV) | Transmission Projects Completed | | | | Proposed Transmission Projects In-Service by November 2020 | |
|---------------------|---------------------------------|--------------|-----------------------------------|-----------------------------------|--|----------------|
| | October 2018 | October 2017 | January – October 2018 Cumulative | January – October 2017 Cumulative | High Probability of Completion | All |
| Line Length (miles) | | | | | | |
| ≤230 | 69.0 | 5.0 | 300.7 | 329.3 | 2,076.5 | 762.3 |
| 345 | 114.0 | 0.0 | 527.2 | 218.5 | 4,030.6 | 1,586.6 |
| 500 | 0.0 | 0.0 | 69.4 | 0.0 | 1,227.4 | 371.0 |
| Total U.S. | 183.0 | 5.0 | 897.3 | 547.8 | 7,334.5 | 2,719.9 |

Sources: Data derived from Staff Database and U.S. Electric Transmission Projects ©2018 The C Three Group, LLC.

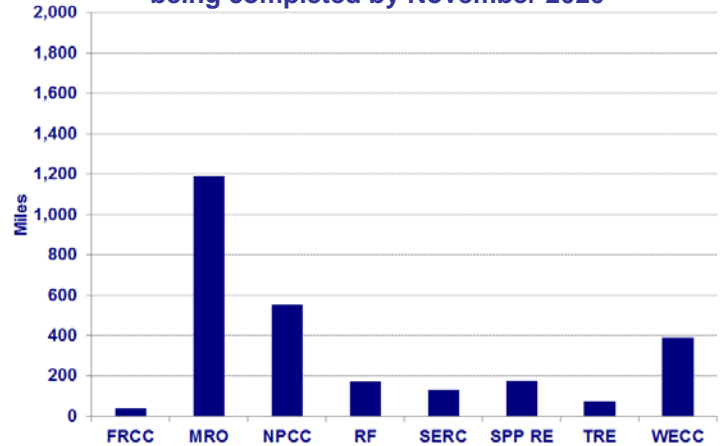


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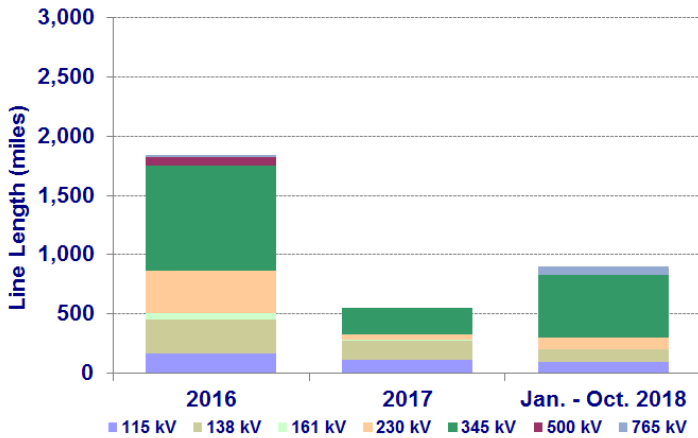
All Transmission Projects with a Proposed In-Service Date by November 2020



Transmission Projects with a High Probability of being completed by November 2020



New Transmission Projects by Voltage



Sources: Data derived from Staff Database and U.S. Electric Transmission Projects ©2018 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.