

Office of Energy Projects

Energy Infrastructure Update

For December 2012

Natural Gas Highlights

- National Fuel received authorization to place into service its Northern Access Project which will provide 320 MMcf/d of additional firm capacity for the transportation of Marcellus Shale gas.
- Dominion received authorization to construct and operate its Allegheny Storage Project which will increase transportation and working gas storage capacities by 125 MMcf/d and 2.5 Bcf, respectively, in MD, OH, WV and PA.
- Transco requests authorization to construct and operate its Virginia Southside Expansion Project. This project will provide 270 MMcf/d of firm transportation on Transco's existing system for two shippers located in VA and NC.
- Cameron LNG and Cameron Interstate request authorization to construct and operate a 1.7 Bcf/d, liquefaction facility for export at Cameron LNG's existing import terminal in Cameron Parish, LA, and additional facilities on Cameron Interstate's existing pipeline system to transport 2.33 Bcf/d of natural gas to the proposed liquefaction facility.
- By letters dated December 14, 2012, the Commission informed Southern LNG, Elba Express, and Gulf LNG Liquefaction that it would not consider their requests to begin the Commission's pre-filing process to construct and operate liquefaction and pipeline facilities in Elba Island, Chatham County, GA, and near Pascagoula, MS until they have fully complied with the procedures outlined in the Commission's regulations at 18 CFR 157.21.

Natural Gas Activities in December 2012

Status	No. of Projects	Storage Capacity (Bcf)	Deliverability (MMcf/d)	Capacity (MMcf/d)	Miles of Pipeline	Compression (HP)
Pipeline						
Placed in Service	4			786.0	3.2	17,760
Certificated	3			226.8	3.1	21,730
Proposed	2			2,600.0	119.0	78,650
Storage						
Placed in Service	0	0.0	0			0
Certificated	1	2.5	110.0			0
Proposed	1	1.2	0			0
LNG (Import & Export)						
Placed in Service	0	0	0			0
Certificated (Export)	0	0	0			0
Proposed (Export)	1	3.4	1,700			0

Source: Staff Database

Natural Gas Activities through December 31, 2012 Through December 31, 2011

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, 2011	26 31			3,870.0 12,559.4	307.4 1,776.8	242,680 816,369
Certificated through December 31, 2011	23 18			4,532.1 4,177.7	210.6 323.5	155,390 312,255
Storage						
Placed in Service through December 31, 2011	10 11	54.7 42.5	880 2,504			80,100 30,218
Certificated through December 31, 2011	10 13	79.3 181.4	3,050 4,495			85,755 143,010
LNG (Import & Export)						
Placed in Service through December 31, 2011	0 2	0 23.2	0 3,500			0 0
Certificated (Export) through December 31, 2011	1 0	0 0	2,600 0			0 0

Source: Staff Database

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Hydropower Highlights

- Hydro Matrix LP placed in service the 4.4 MW Jordan Hydroelectric Project No. 11437 in Chatham County, NC.
- Western Technical College was issued an original license for the proposed 0.205 MW Angelo Dam Hydroelectric Project No. 13417. The project will be located on the La Crosse River in the Township of Angelo, in Monroe County, WI.
- Jay Moyle was issued an order granting exemption from licensing (conduit) for the 0.060 MW P Coulee Power Plant Project No. 14448, in Twin Falls County, ID.
- Tarrant Regional Water District was issued an order amending exemption for the Arlington Outlet Project No. 13946, in Tarrant County, TX, which increase capacity from 1.300 MW to 1.350 MW.
- Free Flow Power Corporation, on behalf of PayneBridge, LLC, filed an original license application for the proposed 4 MW Williams Dam Water Power Project No. 13346. The project would be located at the Indiana Department of Natural Resources' Williams Dam on the East Fork White River, in Lawrence County, IN.
- Duke Energy Carolinas, LLC filed an application for amendment of license for the Catawba Wateree Project No. 2232, located on the Catawba and Wateree Rivers, in Gaston and Lincoln Counties, NC. The capacity will increase from 732.607 to 739.050 MW through equipment upgrades.

Hydropower Activities in December 2012

Status	Conventional		Pumped Storage		Hydrokinetic		Total No. of Projects	Total Capacity (MW)
	No.	Capacity (MW)	No.	Capacity (MW)	No.	Capacity (MW)		
Filed								
License	1	4.000	0	0	0	0	1	4.000
5-MW Exemption	0	0	0	0	0	0	0	0
Capacity Amendment	1	6.443	0	0	0	0	1	6.443
Conduit Exemption	0	0	0	0	0	0	0	0
Issued								
License	1	0.205	0	0	0	0	1	0.205
5-MW Exemption	0	0	0	0	0	0	0	0
Capacity Amendment	1	0.050	0	0	0	0	1	0.050
Conduit Exemption	1	0.060	0	0	0	0	1	0.060
Placed in Service								
License	1	4.400	0	0	0	0	1	4.400
5-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 Activities Year to Date (through December 31, 2012)

Status	Conventional		Pumped Storage		Hydrokinetic		Total No. of Projects	Total Capacity (MW)
	No.	Capacity (MW)	No.	Capacity (MW)	No.	Capacity (MW)		
Filed								
License	14	52.655	0	0	2	1.100	16	53.755
5-MW Exemption	3	0.931	0	0	0	0	3	0.931
Capacity Amendment	5	18.383	0	0	0	0	5	18.383
Conduit Exemption	17	4.475	0	0	0	0	17	4.475
Issued								
License	12	89.190	0	0	4	2.950	16	92.140
5-MW Exemption	2	1.125	0	0	0	0	2	1.125
Capacity Amendment	13	58.607	3	149.500	0	0	16	208.107
Conduit Exemption	18	13.432	0	0	0	0	18	13.432

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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	4	17.580	0	0	0	0	4	17.580
5-MW Exemption	1	0.170	0	0	0	0	1	0.170
Capacity Amendment	0	0	0	0	0	0	0	0
Conduit Exemption	1	1.000	0	0	0	0	1	1.000

Source: Staff Database

Electric Generation Highlights

- Southwestern Electric Power Co.'s (SWEPCO) 609 MW coal-fired John W. Turk Power Plant in Hempstead County, AR is online. Turk is the first ultra-supercritical generating unit in the U.S., which generates electricity more efficiently at higher temperatures and requires less coal and produces less emissions to generate the same amount of power as existing coal units. The electricity generated will serve retail and wholesale customers in AR, LA, TX and OK.
- Southern Power's 736 MW gas-fired Plant Cleveland in Cleveland County, NC is online. Plant Cleveland consists of four Siemens F Class 184 MW gas turbines. Electricity generated is sold to North Carolina Municipal Power Authority Agency and North Carolina Electric Membership Corp. under long-term contracts.
- U.S. Geothermal Inc's 8.6 MW Unit 3 Neal Hot Springs geothermal expansion project in Malheur County, OR is online. Units 1 and 2, both 8.6 MW each, came online in November. Unit 4 with 28 MW is expected to come online in 2017. The power generated is sold to Idaho Power Co. under long-term contract.
- Duke Energy brought a total of 2,365 MW of generation online in North Carolina. 1) 800 MW state-of-the-art coal-fired Cliffside Steam Station Unit 6 in Cleveland County. 2) 620 MW natural gas-fired Dan River Combined Cycle Station in Rockingham County. 3) 920 MW natural gas-fired H.F. Lee Plant in Wayne County. These new units replaced older coal-fired and combustion turbines units.
- Hydro Matrix LP's 4.4 MW Jordan Hydroelectric Project in Moncure, NC is online. Jordan Hydroelectric is a first of its kind installed on the discharge tower of a U.S. Army Corps of Engineers flood storage dam. The project consists of two conventional vertical Kaplan turbine-generators located on the upstream side of the discharge tower. The electricity generated is sold to Progress Energy under long-term contract.
- Rollcast Energy, Inc's 60.5 MW biomass-fueled Piedmont Green Power in Barnesville, GA is online. Piedmont Green will use 500,000 tons of woody biomass annually, consisting of urban wood waste and mill and logging solid waste. The electricity generated is sold to Georgia Power Co under long-term contract.
- Verso Paper's 25 MW biomass-fueled Bucksport Mill expansion project in Bucksport, ME is online. The biomass system will burn papermaking byproduct and logging wood waste. The electricity generated will be used at the mill and sold into the local grid.
- Photovoltaic projects in Arizona: 1) NRG Energy, Inc.'s 25 MW Avra Valley Solar Generating Station near Tucson is online. The electricity generated is sold to Tucson Electric Power under long-term contract. 2) Cate Street Capital Inc's 7.5 MW Lake Pleasant WTP Solar Project in Maricopa County is online. The electricity generated is sold to Arizona Public Service Co.
- Photovoltaic projects in North Carolina: 1) Cate Street Capital Inc's 6.1 MW Buster Solar in Alamance County is online. The electricity generated is sold to Duke Energy Carolinas on long-term contract. 2) Duke Energy Corp's 12.5 MW Washington White Post Solar in Beaufort County is online. The electricity generated is sold to North Carolina Eastern Municipal Power Agency under long-term contract. 3) Nashville Solar Farm LLC's 2 MW Wilson County project and 1.9 MW Nash County project are online. Electricity generated from both facilities is sold to Progress Energy under long-term contract. 4) FLS Energy Inc's 1.8 MW Cary Wastewater Solar in Wake County is online. The electricity generated is sold to Progress Energy under long-term contract.
- Kaua'i Island Utility Cooperative's 7.2 MW Port Allen Solar in Kaua'i, HI is online. Currently the largest solar generation in HI, this project also includes a 3 MW battery energy storage system.
- Wind projects in California: 1) MidAmerican Renewables' 300 MW combined capacity of Pinyon Pines I and II wind projects in Kern County is online. The projects consist of 100 Vestas V-90 3 MW wind turbines. The electricity generated is sold to Southern California Edison under long-term contract. 2) Riverstone Holdings LLC's 265 MW Ocotillo Express Wind Project in Imperial County is online. This facility consists of 112 Siemens SWT 2.3 wind turbines. Electricity generated is sold to San Diego G&E under long-term contract. 3) PG&E Corp's 189 MW

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- Manzanar Wind in Kern County is online. This facility consists of 126 GE 1.5 wind turbines. Electricity generated is sold to San Diego G&E and Silicon Valley Power under long-term contract. 4) EDF Groups' 102.5 MW Shiloh IV Wind Project in Solano County is online. This facility consists of 50 REpower Systems AG wind turbines. Electricity generated is sold to Pacific Gas & Electric under long-term contract. 5) Foundation Wind Power's 3.2 MW Cemex Black Mountain Quarry Wind and 3.2 MW Cemex Victorville Wind in San Bernardino County, 3.2 MW Foundation Nwna Cabazon Project and 2 MW Foundation RRM Cabazon Project in Riverside County, are online.
- E.ON Group's 200 MW Wildcat Wind Farm I in Madison County, IN is online. This facility consists of 125 GE 1.6 MW wind turbines. The electricity generated is sold to Indiana Michigan Power Company under long-term contract.
 - Minnesota Power's 210 MW Bison Wind III expansion project in Oliver County, ND is online. This facility consists of 70 Siemens 3 MW wind turbines. The electricity generated is delivered to Minnesota Power's customers transmitted through the company's DC line from Center, ND to Duluth, MN.
 - Fist Wind's 104 MW Palouse Wind Farm in Whitman County, WA is online. This facility consists of 58 Vestas 1.8 MW wind turbines. Electricity generated is sold to Avista Corp under long-term contract.
 - Wind projects in Illinois: 1) Algonquin Power and Utilities Corp's 200 MW Minonk Wind in Woodford County is online. This facility consists of 100 Gamesa 2 MW wind turbines. 2) Invenergy LLC's 214.4 MW California Ridge Wind in Vermilion County is online. This facility consists of 134 GE 1.6 MW wind turbines. Electricity generated is sold to TVA under long-term contract. 3) MidAmerican Renewables' 81 MW Bishop Hill II in Henry County is online. This facility consists of 50 GE 1.62 MW wind turbines. The electricity generated is sold to Ameren Illinois under long-term contract.
 - General Electric's 235 MW Chisholm View Wind in Garfield County, OK is online. This facility consists of 140 GE 1.68 MW wind turbines. The electricity generated is sold to Alabama Power under long-term contract.
 - Algonquin Power and Utilities Corp's 150 MW Senate Wind in Jack County, TX is online. This facility consists of 75 Gamesa 2 MW wind turbines.
 - Wind projects in Pennsylvania: 1) BP Energy's 140.8 MW Mehoopany Wind Farm in Wyoming County is online. This facility consists of 88 GE 1.6 MW wind turbines. The electricity generated is sold to Old Dominion Electric Cooperative and Southern Maryland Electric Cooperative Inc. under long-term contracts. 2) EverPower Wind Holdings' 139.4 MW Twin Ridges Wind Farm in Somerset County is online. This facility consists of 68 REpower MM92 2.05 MW wind turbines.
 - Alliant Energy Corp's 100 MW Franklin County Wind Farm in Franklin County, IA is online. This facility consists of 60 Vestas 1.65 MW wind turbines. Electricity generated is sold to Alabama Power under long-term contract.
 - DTE Energy Co.'s 110 MW total capacity Michigan Thumb Wind Parks, composed of DTE McKinley Wind, DTE Minden Wind and DTE Sigel Wind in Sanilac and Huron Counties, MI are online. Thumb Wind Parks consist of 69 GE 1.6 MW turbines. Electricity generated is sold to Detroit Edison under long-term contract.
 - Wind projects in Idaho: 1) Exelon Corp's 40 MW High Mesa Wind in Elmore County is online. High Mesa consists of 19 Suzlon 2.1 MW wind turbines. The electricity generated is sold to Idaho Power under long-term contract. 2) Terna SpA's 88.8 MW total capacity Mountain Air Wind Projects, comprised of Cold Springs Wind Farm, Desert Meadow Wind Farm, Two Ponds Wind Farm and Mainline Wind Farm in Elmore County are online. Mountain Air Wind Parks consist of 40 Siemens 2.2 MW turbines. The electricity generated is sold to Idaho Power under long-term contract.
 - Alliance Power's 67 MW Colorado Highlands Wind in Logan County, CO is online. Highlands Wind consists of 42 GE 1.6 MW turbines. The electricity generated is sold to Tri State Generation and Transmission Association under long-term contract.
 - Iberdrola SA's 48 MW Groton Wind Project in Grafton County, NH is online. Groton Wind consists of 24 Gamesa Energy USA 2 MW wind turbines. The electricity generated is sold to NSTAR Electric Co. under long-term contract.
 - Juwi Wind LLC's 31 MW Community Wind South in Nobles County, MN is online. This facility consists of 15 Repower MM92 wind turbines. The electricity generated is sold to Northern States Power Co. under long-term contract.
 - Iberdrola SA's 28.5 MW Hoosac Wind in Berkshire County, MA is online. Hoosac Wind consists of 19 GE 1.5 MW wind turbines. The electricity generated is sold to NSTAR Electric Co. under long-term contract.
 - Sempra US Gas & Power and BP Wind Energy's 21 MW Auwahi Wind Project in Maui, HI is online. Auwahi Wind consists of 8 Siemens 2.6 MW wind turbines and an 11 MW battery storage unit capable of storing power generated by the wind turbines to regulate the intermittent wind power. The electricity generated is sold to Maui Electric Co. under long-term contract.
 - Georgia Mountain Community Wind's 10 MW Georgia Mountain Wind in Chittenden County, VT is online. Georgia Mountain consists of 4 Goldwind Science & Technology 2.5 MW wind turbines. The electricity generated is sold to Burlington Electric Department under long-term contract.

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New Generation In-Service (New Build and Expansion)

Primary Fuel Type	December 2012		January – December 2012 Cumulative		January – December 2011 Cumulative	
	No. of Units	Installed Capacity (MW)	No. of Units	Installed Capacity (MW)	No. of Units	Installed Capacity (MW)
Coal	4	1,434	8	4,510	15	1,932
Natural Gas	6	2,306	94	8,746	108	11,020
Nuclear	0	0	1	125	0	0
Oil	0	0	19	49	66	136
Water	2	4	13	99	41	94
Wind	45	3,095	164	10,689	146	6,844
Biomass	5	91	100	543	131	446
Geothermal Steam	2	9	13	149	9	56
Solar	16	77	240	1,476	354	1,131
Waste Heat	0	0	1	3	2	136
Other	2	0	5	0	11	0
Total	82	7,016	658	26,387	883	21,795

Source: Data derived from Ventyx Global LLC, Velocity Suite.

Total Installed Operating Generating Capacity

	Installed Capacity (GW)	% of Total Capacity
Coal	337.71	29.17%
Natural Gas	491.82	42.48%
Nuclear	107.01	9.24%
Oil	41.32	3.57%
Water	98.12	8.47%
Wind	57.53	4.97%
Biomass	15.00	1.30%
Geothermal Steam	3.70	0.32%
Solar	3.90	0.34%
Waste Heat	0.69	0.06%
Other	1.04	0.09%
Total	1,157.86	100.00%

Source: Data derived from Ventyx Global LLC, Velocity Suite.

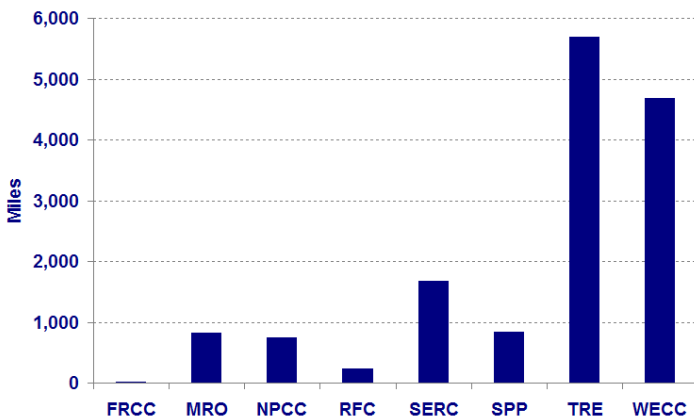
Electric Transmission Highlights

- ITC Great Plains, Nebraska Public Power District, Sunflower Electric Power Corp and Midwest Energy's KETA (Spearville - Axtell) transmission project is in-service. The 345 kV, 227 mile, interstate project connects Spearville, KS to Axtell, NE. It was completed six months ahead of schedule with an estimated cost of \$328 million.
- Valley Electric Association's 230 kV, 81 mile Pahrump - Northwest transmission project in NV is in-service.
- PSEG Power's 138 kV, 5 mile Bayonne - Marion transmission line in NJ is in-service.
- City of Grand Island's 115 kV, 7 mile Substation "F" - St. Libory in NE is in-service. The GI North transmission project cost approximately \$3.9 million.

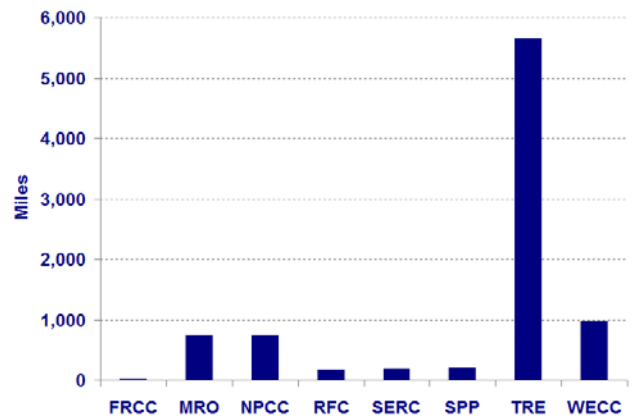
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Voltage (kV)	Transmission Projects Completed				Proposed Transmission Projects In-Service by December 2014	
	December 2012	December 2011	January – December 2012 Cumulative	January – December 2011 Cumulative	High Probability of Completion	All
	Line Length (miles)					
≤230	89.3	125.0	603.1	951.8	790.8	3,455.5
345	138.0	286.7	792.8	516.5	7,109.8	8,342.8
500	0	0	170.1	262.0	758.4	2,895.4
Total U.S.	227.3	411.7	1,566.0	1,730.3	8,659.0	14,693.7

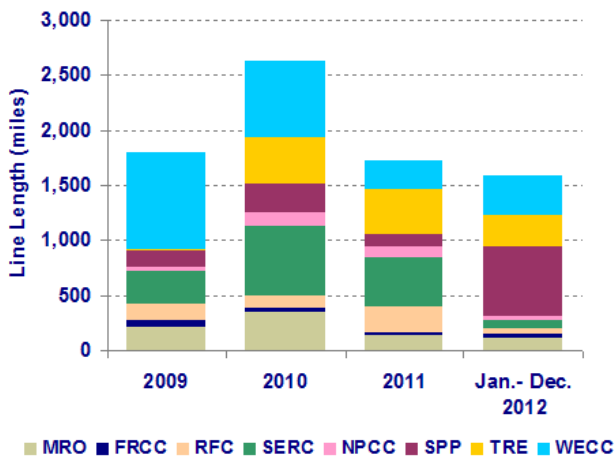
All Transmission Projects with a Proposed In-Service Date by December 2014



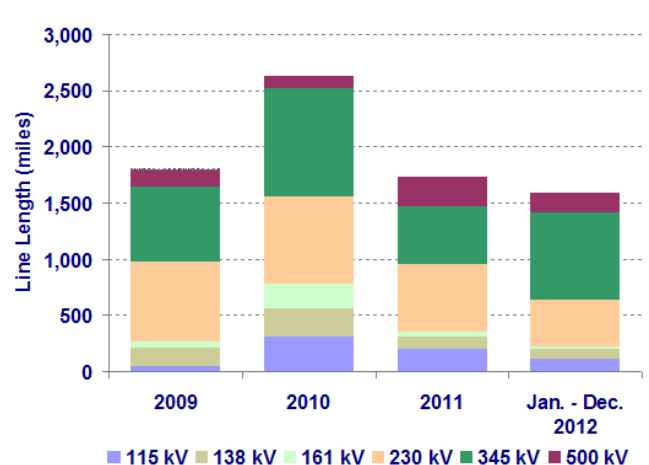
Transmission Projects with a High Probability of being completed by December 2014



New Transmission Projects by Region



New Transmission Projects by Voltage



Sources: Data derived from Staff Database and U.S. Electric Transmission Projects ©2013 The C Three Group, LLC

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