New Service Queue Update 2017

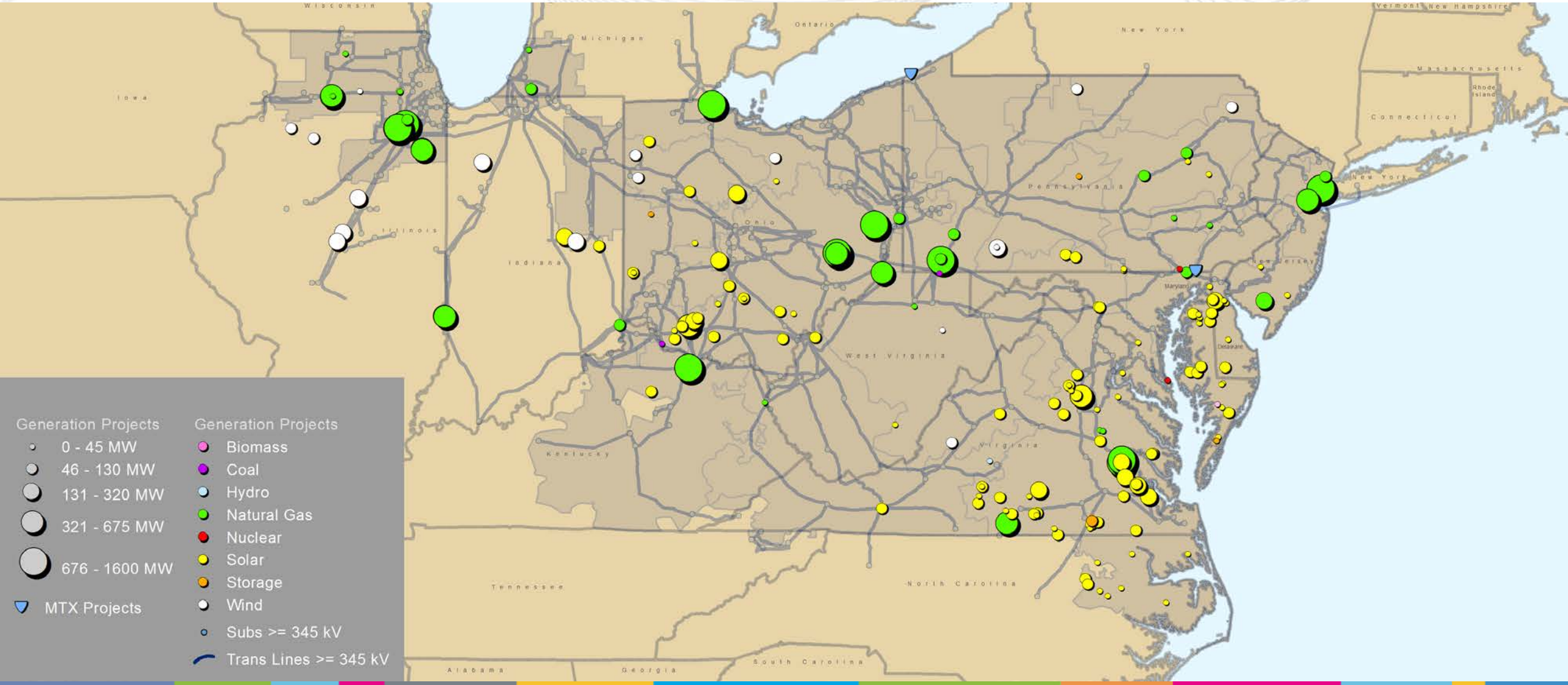
(Study reports located at: http://www.pjm.com/planning.aspx)

Transmission Expansion Advisory Committee

October 12, 2017

System Impact Studies Completed

System Impact Studies Completed



Merchant Transmission (MTX) Projects

Queue Number	Project Name	TO
AB2-019	Erie West 345kV	PENELEC
AB2-021	Keeney-Rock Springs 500kV	DPL

Long Term Firm Transmission Service (LTF) Projects

Queue Number	Path Name	MWs
AB1-100	NYIS-PJM	480
AB2-005	TVA-PJM	148
AB2-007	NYISJK-PJM-NYISABC	1000
AB2-013	AMIL-PJM	150
AB2-075	DUK-PJM	42
AB2-076	DUK-PJM	51
AC1-002	AMIL-PJM	550
AC1-004	AMIL-PJM	300
AC1-056	PJM-AMIL	100
AC1-057	PJM-MECS	200

Long Term Firm Transmission Service (LTF) Projects

Queue Number	Path Name	MWs
AC1-126	PJM-CPLE	25
AC1-127	PJM-CPLE	25
AC1-128	PJM-CPLE	25
AC1-129	PJM-CPLE	25
AC1-131	PJM-CPLE	50
AC1-132	PJM-CPLE	50
AC1-133	PJM-CPLE	100
AD1-021	PJM-LINDENVFT	330

Generation Projects

By Transmission Owner

AEC Transmission Zone

Queue Number	Fuel Type	MWC	MWE	Transmission Owner
AB2-049	Solar	3.8	10	AEC
AB2-102	Natural Gas	225	230	AEC
AB2-122	Solar	0.7	1.9	AEC

AEP Transmission Zone

Queue Number	Fuel Type	MWC	MWE	Transmission Owner
AB1-087	Natural Gas	550	575	AEP
AB1-088	Natural Gas	550	575	AEP
AB2-016	Wind	13	100	AEP
AB2-028	Wind	26	200	AEP
AB2-065	Wind	16	124.2	AEP
AB2-067	Natural Gas	1100	1100	AEP
AB2-083	Solar	27.2	40	AEP
AB2-085	Solar	54.4	80	AEP
AB2-093	Natural Gas	485	485	AEP
AB2-103	Solar	27.2	40	AEP

AEP Transmission Zone

Queue Number	Fuel Type	MWC	MWE	Transmission Owner
AB2-109	Hydro	4	12.5	AEP
AB2-145	Natural Gas	572	572	AEP
AB2-170	Solar	49.4	130	AEP
AC1-001	Solar	54.4	80	AEP
AC1-012	Solar	0	5	AEP
AC1-038	Natural Gas	13	13	AEP
AC1-040	Solar	57	150	AEP
AC1-044	Natural Gas	550	550	AEP
AC1-051	Wind	7.8	60	AEP
AC1-072	Natural Gas	20	20	AEP

AEP Transmission Zone

Queue Number	Fuel Type	MWC	MWE	Transmission Owner
AC1-082	Solar	29	48	AEP
AC1-083	Solar	38	100	AEP
AC1-088	Storage	20	20	AEP
AC1-089	Solar	57	150	AEP
AC1-100	Natural Gas	27.4	100	AEP
AC1-101	Solar	19	50	AEP
AC1-102	Solar	19	50	AEP
AC1-103	Natural Gas	1026	1050	AEP
AC1-122	Solar	40.7	60	AEP
AC1-123	Solar	13.7	20	AEP

AEP Transmission Zone

Queue Number	Fuel Type	MWC	MWE	Transmission Owner
AC1-141	Natural Gas	91	91	AEP
AC1-144	Solar	57.2	85	AEP
AC1-152	Natural Gas	50	50	AEP
AC1-167	Solar	33.6	49.9	AEP
AC1-172	Natural Gas	50	50	AEP
AC1-173	Wind	9.9	75.9	AEP
AC1-174	Solar	38	100	AEP
AC1-175	Solar	38	100	AEP
AC1-176	Wind	7.6	58.7	AEP
AC1-188	Solar	46.6	70	AEP

AEP Transmission Zone

Queue Number	Fuel Type	MWC	MWE	Transmission Owner
AC1-194	Solar	47.5	125	AEP
AC1-210	Solar	31	45	AEP
AC2-038	Solar	12	20	AEP
AC2-080	Wind	26	200	AEP
AC2-123	Solar	44.6	75	AEP

APS Transmission Zone

Queue Number	Fuel Type	MWC	MWE	Transmission Owner
AB2-041	Wind	3.7	20	APS
AB2-104	Natural Gas	65	65	APS
AB2-129	Solar	30.4	80	APS
AC1-003	Natural Gas	80	80	APS
AC1-021	Natural Gas	0	110	APS
AC1-025	Storage	0	1.5	APS
AC1-055	Natural Gas	30	30	APS
AC1-073	Wind; Storage	5.8	16.3	APS
AC1-097	Natural Gas	1040	1140	APS
AC1-139	Solar	38.8	102	APS

APS Transmission Zone

Queue Number	Fuel Type	MWC	MWE	Transmission Owner
AC1-140	Coal	10	10	APS
AC1-187	Wind	15	117	APS
AC1-211	Solar	48.1	70	APS
AC1-217	Solar	37.8	55	APS
AC2-142	Natural Gas	129.7	129.7	APS

ATSI Transmission Zone

Queue Number	Fuel Type	MWC	MWE	Transmission Owner
AB1-107	Natural Gas	860	955	ATSI
AB2-131	Solar	57	150	ATSI
AC1-078	Solar	66	176	ATSI

BGE Transmission Zone

Queue Number	Fuel Type	MWC	MWE	Transmission Owner
AC1-008	Nuclear	19.2	19.2	BGE

ComEd Transmission Zone

Queue Number	Fuel Type	MWC	MWE	Transmission Owner
AB1-089	Natural Gas	550	575	ComEd
AB1-090	Natural Gas	550	575	ComEd
AB1-091	Natural Gas	550	575	ComEd
AB1-122	Natural Gas	1150	1150	ComEd
AB2-047	Wind	32.5	250	ComEd
AB2-070	Wind	26	200	ComEd
AB2-096	Natural Gas	350	350	ComEd
AB2-132	Wind; Storage	2.2	2.5	ComEd
AB2-173	Natural Gas	28	16	ComEd
AB2-191	Wind	10.6	20	ComEd

ComEd Transmission Zone

Queue Number	Fuel Type	MWC	MWE	Transmission Owner
AC1-033	Wind	13.1	100.8	ComEd
AC1-053	Wind	26	200	ComEd
AC1-067	Natural Gas	1092	1254	ComEd
AC1-109	Natural Gas	30	30	ComEd
AC1-110	Natural Gas	30	30	ComEd
AC1-111	Natural Gas	36	36	ComEd
AC1-113	Natural Gas	20	20	ComEd
AC1-114	Natural Gas	20	20	ComEd
AC1-142A	Natural Gas	64	64	ComEd
AC1-204	Natural Gas	1115.9	1200.9	ComEd

ComEd Transmission Zone

Queue Number	Fuel Type	MWC	MWE	Transmission Owner
AC1-214	Wind	19	79.4	ComEd

DAYTON Transmission Zone

Queue Number	Fuel Type	MWC	MWE	Transmission Owner
AB1-169	Natural Gas	1100	1150	Dayton
AC1-068	Solar	34	49.9	Dayton
AC1-069	Solar	34	49.9	Dayton
AC1-085	Solar	152	400	Dayton
AC1-165	Solar	33.6	49.9	Dayton
AC1-166	Solar	33.6	49.9	Dayton
AC1-212	Storage	17	19.9	Dayton
AC2-020	Solar	7.6	20	Dayton
AC2-067	Solar	18.9	49.9	Dayton
AC2-068	Solar	7.6	20	Dayton

DAYTON Transmission Zone

Queue Number	Fuel Type	MWC	MWE	Transmission Owner
AC2-164	Solar	14.4	0	Dayton

DEOK Transmission Zone

Queue Number	Fuel Type	MWC	MWE	Transmission Owner
AC1-182	Coal	20	20	DEOK
AC2-066	Solar	28.5	75	DEOK
AC2-085	Solar	10.8	20	DEOK
AC2-088	Solar	38.4	70	DEOK

DOMINION Transmission Zone

Queue Number	Fuel Type	MWC	MWE	Transmission Owner
AB2-015	Solar	50	91	Dominion
AB2-022	Solar	13	20	Dominion
AB2-031	Solar	13.4	20	Dominion
AB2-035	Solar	2.1	3	Dominion
AB2-040	Solar	44	80	Dominion
AB2-043	Solar	18.9	49.9	Dominion
AB2-050	Natural Gas	20	20	Dominion
AB2-051	Natural Gas	765.5	884.5	Dominion
AB2-059	Solar	66	100	Dominion
AB2-060	Solar	54.4	80	Dominion

DOMINION Transmission Zone

Queue Number	Fuel Type	MWC	MWE	Transmission Owner
AB2-062	Solar	0	20	Dominion
AB2-068	Natural Gas	1060	1060	Dominion
AB2-072	Solar	13.6	20	Dominion
AB2-077	Solar	12	20	Dominion
AB2-078	Solar	12	20	Dominion
AB2-079	Solar	12	20	Dominion
AB2-087	Solar	3.4	5	Dominion
AB2-088	Solar	2.7	4	Dominion
AB2-089	Solar	13.2	20	Dominion
AB2-090	Solar	23.8	36	Dominion

DOMINION Transmission Zone

Queue Number	Fuel Type	MWC	MWE	Transmission Owner
AB2-098	Solar	3.5	5	Dominion
AB2-099	Solar	3.5	5	Dominion
AB2-100	Solar	67	100	Dominion
AB2-134	Solar	71.8	142.4	Dominion
AB2-158	Solar	61	88.2	Dominion
AB2-160	Solar	30.4	80	Dominion
AB2-161	Solar	19	50	Dominion
AB2-169	Solar	39	74	Dominion
AB2-174	Solar	42	80	Dominion
AB2-176	Solar	9.8	14	Dominion

DOMINION Transmission Zone

Queue Number	Fuel Type	MWC	MWE	Transmission Owner
AB2-186	Solar	3.5	5	Dominion
AB2-188	Solar	14	20	Dominion
AB2-190	Solar	112	160	Dominion
AC1-034	Solar	42.75	75	Dominion
AC1-036	Solar	5.7	15	Dominion
AC1-042	Solar	15.96	42	Dominion
AC1-043	Solar	38	100	Dominion
AC1-054	Solar	44.5	65	Dominion
AC1-065	Solar	19	50	Dominion
AC1-070	Solar	13.3	20	Dominion

DOMINION Transmission Zone

Queue Number	Fuel Type	MWC	MWE	Transmission Owner
AC1-075	Solar	38.3	60	Dominion
AC1-076	Solar	23.8	62.5	Dominion
AC1-080	Solar	12.8	20	Dominion
AC1-086	Solar	123.7	180	Dominion
AC1-098	Solar	37.6	60	Dominion
AC1-099	Solar	12.6	20	Dominion
AC1-105	Solar	34.5	51	Dominion
AC1-107	Natural Gas	1600	1600	Dominion
AC1-115	Solar	5.7	14.9	Dominion
AC1-120	Solar	39.6	60	Dominion

DOMINION Transmission Zone

Queue Number	Fuel Type	MWC	MWE	Transmission Owner
AC1-121	Solar	13.6	20	Dominion
AC1-134	Natural Gas	50	0	Dominion
AC1-143	Solar	41.2	60	Dominion
AC1-145	Solar	19	50	Dominion
AC1-158	Solar	347.5	500	Dominion
AC1-161	Solar	168.2	240	Dominion
AC1-162	Solar	168.9	240	Dominion
AC1-163	Solar	11.54	16.94	Dominion
AC1-164	Solar	220.8	320	Dominion
AC1-189	Solar	53.4	80	Dominion

DOMINION Transmission Zone

Queue Number	Fuel Type	MWC	MWE	Transmission Owner
AC1-191	Solar	53.4	80	Dominion
AC1-206	Storage; Solar	57.72	85	Dominion
AC1-208	Solar	55.4	80	Dominion
AC1-216	Solar	54.8	97.9	Dominion
AC1-221	Solar	14.6	29.2	Dominion
AC1-222	Solar	22.9	44.7	Dominion
AC1-227	Wind	12	96.6	Dominion

DPL Transmission Zone

Queue Number	Fuel Type	MWC	MWE	Transmission Owner
AB2-030	Storage	0	4	DPL
AB2-032	Solar	13.6	20	DPL
AB2-036	Solar	34.9	92	DPL
AB2-037	Solar	76.7	202	DPL
AB2-063	Solar	7.6	20	DPL
AB2-084	Solar	3.8	10	DPL
AB2-120	Solar	38	100	DPL
AB2-130	Solar	32.3	85	DPL
AB2-133	Solar	24.6	55.8	DPL
AB2-135	Solar	29.9	64	DPL

DPL Transmission Zone

Queue Number	Fuel Type	MWC	MWE	Transmission Owner
AB2-136	Solar	24.8	51.1	DPL
AB2-153	Solar	7.6	20	DPL
AB2-166	Solar	2	5.5	DPL
AB2-168	Solar	3.8	10	DPL
AB2-172	Solar	19	50	DPL
AB2-179	Solar	37.6	50	DPL
AB2-180	Solar	14	20	DPL
AB2-185	Solar	14	20	DPL
AC1-009	Solar	7.6	20	DPL
AC1-041	Solar	1.9	5	DPL

DPL Transmission Zone

Queue Number	Fuel Type	MWC	MWE	Transmission Owner
AC1-049	Solar	1.5	4	DPL
AC1-050	Solar	1.9	5	DPL
AC1-052	Solar	6.4	9	DPL
AC1-091	Solar	7.5	19.8	DPL
AC1-092	Solar	7.5	19.8	DPL
AC1-093	Solar	7.1	18.8	DPL
AC1-094	Solar	6	15.9	DPL
AC1-095	Solar	3.8	9.9	DPL
AC1-154	Solar	1.2	3.2	DPL
AC1-177	Biomass	4	4	DPL

DPL Transmission Zone

Queue Number	Fuel Type	MWC	MWE	Transmission Owner
AC1-190	Solar	35	50	DPL
AC1-213	Solar	3.2	5.3	DPL
AC1-220	Solar	15.5	26.5	DPL
AC1-228	Solar	1.1	3	DPL
AC1-229	Solar	3.8	10	DPL
AC2-018	Natural Gas	8	60	DPL
AC2-187	Solar	7.6	20	DPL

EKPC Transmission Zone

Queue Number	Fuel Type	MWC	MWE	Transmission Owner
AC1-074	Solar	56	80	EKPC

METED Transmission Zone

Queue Number	Fuel Type	MWC	MWE	Transmission Owner
AB2-112	Natural Gas	35	35	ME
AC1-035	Natural Gas	30	30	ME
AC1-048	Solar	13.3	35	ME
AC2-053	Solar	7.6	20	ME

ODEC Transmission Zone

Queue Number	Fuel Type	MWC	MWE	Transmission Owner
AB2-033	Solar	7.16	10	ODEC

PECO Transmission Zone

Queue Number	Fuel Type	MWC	MWE	Transmission Owner
AB2-175	Nuclear	44	44	PECO

PENELEC Transmission Zone

Queue Number	Fuel Type	MWC	MWE	Transmission Owner
AC1-108	Natural Gas	100	50	PENELEC
AC1-186	Wind	17.9	138	PENELEC

PEPCO Transmission Zone

Queue Number	Fuel Type	MWC	MWE	Transmission Owner
AB2-157	Solar	0.8	2.5	PEPCO

PPL Transmission Zone

Queue Number	Fuel Type	MWC	MWE	Transmission Owner
AB2-074	Natural Gas	50	113	PPL
AC1-071	Wind	8.74	67.25	PPL
AC1-087	Solar	3.8	10	PPL
AC1-151	Solar	7.6	20	PPL
AC2-092	Natural Gas	65	55	PPL

PSEG Transmission Zone

Queue Number	Fuel Type	MWC	MWE	Transmission Owner
AB2-055	Natural Gas	1041.4	1041.4	PSEG
AB2-082	Natural Gas	671	675	PSEG
AB2-092	Natural Gas	51.1	51.1	PSEG

SMECO Transmission Zone

Queue Number	Fuel Type	MWC	MWE	Transmission Owner
AC2-101	Solar	12.35	32.5	SMECO

Network Upgrades

AEC Transmission Zone

Upgrade Id	Project Description	Cost Estimate ($M)	Driver
n5210.1	Tap the existing new Orchard – Cardiff 230kV line to install a 230kV 4 position ring bus at Minotola substation, with 4-230 kV breakers	11.2	AB1-169A
n5210.2	Install 1-138kV breaker and 1-230/138kV transformer at Minotola Substation	5.284	AB1-169A
n5210.3	Install 1-138kV breaker and 1-230/138kV transformer at Minotola Substation	5.284	AB1-169A

AEP Transmission Zone

Upgrade Id	Project Description	Cost Estimate ($M)	Driver
n4729	Build a second parallel Breed – Casey 345 kV line	78	AA1-053
n5335	Re-conductor Cherry Valley - Garden PR 345 kV line	25	AA1-120
n5336	Re-conductor Garden PR - Silver Lake 345 kV line	25	AA1-120
n5337	Rebuild 8.3 miles of Burroak – Plymouth 138 kV line	10.4	AA1-120
n5338	Replace Circuit Breaker 7-8 and Circuit Breaker 8-9 at Nelson 345 kV substation	6	AA1-120
n5339	Rebuild Eugene - Cayuga complete line with steel structures and larger conductor -(2)1272ACSR45X7: 3028A rating @ 100C	18.6	AA1-120

AEP Transmission Zone

Upgrade Id	Project Description	Cost Estimate ($M)	Driver
n5340	Six Wire the Kyger - Sporn 345 kV No 1 and No 2 Circuits together	0.3	AA1-120
n5341	Mitigate sag limits on 345 kV line 11212 from Loretto - Wilton Center	30	AA1-120
n5342	Re-conductor of Michigan City - Bosserman 138 kV line to 397 ACSS. Michigan City to Laporte is now Michigan City to Bosserman	0.5	AA1-120
n5343	Rebuild 24 miles of 138 kV line from Monticello – Winamac	3	AA1-120
n5344	Replace two MODs at Electric Junction	5	AA1-120
n5345	Replace terminal equipment at Pierce-Foster 345 kV line	0.25	AA1-120

AEP Transmission Zone

Upgrade Id	Project Description	Cost Estimate ($M)	Driver
n5346	Mitigate sag on the Pontiac – Loretto 345 kV line	12	AA1-120
n5347	Replace line riser at Muskingum 345 kV substation	0.2	AA1-120
n5348	Re-conductor Lee - Byron 345 kV line	0.4	AA1-120
n5349	Upgrade station conductor at ESS H471 on L0404	57.5	AA1-120
n5350.1	Replace the Wave Trap (3000A) at Eugene substation	0.4	AA1-120
n5350.2	Build a new 345 kV line from Bunsonville – Eugene substations	57.5	AA1-120

AEP Transmission Zone

Upgrade Id	Project Description	Cost Estimate ($M)	Driver
n5008	Reconfigure the Kewanee 138 kV bus by swapping the Bishop Hill & Edwards line terminals	7.5	AA2-039
n4810	Remove a line capacitor on the Catoctin – Catoctin Furnace 12.5 kV circuit	0.0015	AA2-143
n5109	Expand the proposed in-line switching station identified as an attachment facility for PJM project W4-004 & W4-008. Add three (3) 138 kV circuit breakers. The expanded switching station will have a configuration of a breaker and one half bus arrangement. Associated disconnect switches, bus work, SCADA and 138 kV revenue metering will also be required	3.45	AA2-148
n5110	Bring the Tanners Creek – Pendleton 138 kV circuit into the proposed W4-004 & W4-008 138 kV switching station which will require adding an additional string and three (3) new 138 kV circuit breakers, associated disconnect switches, bus work, SCADA and 138 kV revenue metering	3.45	AA2-148
n5111	Install line protection and controls at the newly expanded 138 kV switching station	0.25	AA2-148
n5112	Update relay settings at Madison 138 kV substation	0.05	AA2-148

AEP Transmission Zone

Upgrade Id	Project Description	Cost Estimate ($M)	Driver
n5113	Update relay settings at Tanners Creek 138 kV substation	0.05	AA2-148
n5114	Update line protection and controls at Pendleton 138 kV substation	0.2	AA2-148
n5334	Modify remote end relaying to reflect the added 40 MW of Energy at Elderberry 345 kV substation	0.025	AB1-080
n4790	Rebuild 9 miles of the AEP portion of the Stillwell – Dumont 345 kV line and upgrade necessary Dumont terminal equipment	20	AB1-089
n4789	Replace the Dumont 765 kV Wave Trap and evaluate relay compliance thermal limit to increase ratings on the Wilton – Dumont 765 kV line	1.5	AB1-091
n5413	Install a 69 kV Circuit Breaker, SCADA, bus work, metering, and disconnect switches at South Cumberland 69 kV Substation	1.25	AB1-167

AEP Transmission Zone

Upgrade Id	Project Description	Cost Estimate ($M)	Driver
n5414	Install line protection and controls at South Cumberland 69 kV Substation	0.25	AB1-167
n5415	Install a 345 kV Circuit Breaker, SCADA, bus work, metering, and disconnect switches at Maddox Creek 345 kV Substation	2.5	AB2-016
n5416	Install line protection and controls at Maddox Creek 345 kV Substation	0.65	AB2-016
n5426	Upgrade Line Relaying on the RP Mone – Maddox Creek 345 kV Line	0.025	AB2-016
n5427	Upgrade Line Relaying on the East Lima – Maddox Creek 345 kV Line	0.025	AB2-016
n5417	Construct a new three (3) circuit breaker 345 kV switching station along the Desoto – Fall Creek 345 kV Line	5.55	AB2-028

AEP Transmission Zone

Upgrade Id	Project Description	Cost Estimate ($M)	Driver
n5418	Upgrade Line Relaying on the Desoto – Fall Creek 345 kV Line	0.3	AB2-028
n5419	Upgrade Line Relaying on the Desoto – Fall Creek 345 kV Line	0.3	AB2-028
n5352	Construct a new three (3) circuit breaker 765 kV switching station physically configured in a breaker and half bus arrangement but operated as a ring-bus to accommodate the interconnection on the Kammer – Vassell 765 kV circuit	25	AB2-067
n5353	Install 765 kV Revenue Metering at the new 765 kV switching station	0.465	AB2-067
n5354	Install line protection and controls at the new 765 kV switching station	1	AB2-067
n5355	Kammer – Vassell 765 kV T-Line Cut In for the new 765 kV switching Station	3.1	AB2-067

AEP Transmission Zone

Upgrade Id	Project Description	Cost Estimate ($M)	Driver
n5356	Upgrade line protection and controls at the Kammer 138 kV substation to coordinate with the new 138 kV switching station	0.6	AB2-067
n5357	Upgrade line protection and controls at the Vassell 765 kV substation to coordinate with the new 765 kV switching station	0.6	AB2-067
n5420	Install a 138 kV Circuit Breaker, SCADA, bus work, metering, and disconnect switches at Delano 138 kV Substation	0.65	AB2-083
n5421	Install line protection and controls at Delano 138 kV Substation	0.3	AB2-083
n5422	Install a 138 kV Circuit Breaker, SCADA, bus work, metering, and disconnect switches at Adams 138 kV substation	0.65	AB2-085
n5423	Install line protection and controls at the Adams 138 kV substation	0.2	AB2-085

AEP Transmission Zone

Upgrade Id	Project Description	Cost Estimate ($M)	Driver
n5304	Re-conductor 0.08 miles of the ACSR 1590 (54/19) Falcon conductor section 2, replace the George Washington Wave Trap (2000 A) and replace the Kammer Wave Trap (2000 A)	0.3	AB2-093
n5327	Construct a new nine (9) circuit breaker 138 kV switching station physically configured in a breaker and half bus arrangement at or near the existing Ormet 138 kV station site	13	AB2-093
n5328	Install associated protection and control equipment, 138 kV line risers, SCADA, and 138 kV revenue metering at the new switching station	2	AB2-093
n5329	Install revenue metering at the new switching station	0.15	AB2-093
n5330	Retire existing Ormet 138 kV Substation	2	AB2-093
n5331	Upgrade line protection and controls at the Kammer 138 kV substation to coordinate with the new 138 kV switching station	0.5	AB2-093

AEP Transmission Zone

Upgrade Id	Project Description	Cost Estimate ($M)	Driver
n5424	Install a 138 kV Circuit Breaker, SCADA, bus work, metering, and disconnect switches at the Seaman 138 kV substation	0.55	AB2-103
n5425	Install line protection and controls at the Seaman 138 kV substation	0.2	AB2-103
n5428	Install a 345 kV Circuit Breaker, SCADA, bus work, metering, and disconnect switches at the Hardin Switch 345 kV substation	2	AB2-170
n5429	Install line protection and controls at the Hardin Switch 345 kV substation	0.25	AB2-170
n5430	Upgrade Line Relaying on the East Lima – Marysville 345 kV Line	0.025	AB2-170
n5431	Upgrade Line Relaying on the East Lima – Marysville 345 kV Line	0.025	AB2-170

AEP Transmission Zone

Upgrade Id	Project Description	Cost Estimate ($M)	Driver
n5470	Perform a sag study on the Banister - East Danville 138 kV line	0.015	AC1-083
n5471	Perform a sag study on the AC1-083 TAP - Bearskin 138 kV line	0.015	AC1-083
n5472	Perform a sag study on the Wildcat - Hillsboro 138 kV line	0.04	AC1-089
n5473	Re-conductor the Nottingham - Yager 138 kV line	30.4495	AC1-103
n5474	Replace the Wave Traps at the East Lima and Haviland substations	0.1	AC1-176
n5106	Rebuild the portions of 345 kV lines between the Benton Harbor and Segreto 345 kV substations	19	J298 (MISO)

AEP Transmission Zone

Upgrade Id	Project Description	Cost Estimate ($M)	Driver
n5312.1	Replace the Benton 345 kV H Wave Trap	0.4	J298 (MISO)
n5312.2	Replace the Benton 345 kV H Line Riser	0.2	J298 (MISO)
n5064	Re-conductor AEP end of Stillwell – Dumont 345 kV line with 1272 dual ACSR and upgrade the Dumont risers	2	J351 (MISO)
n5065	Re-conductor or rebuild the Eugene – Dequine 345 kV line and replace the Dequine riser	88.3	J351 (MISO)
n5310.1	Replace Wave Trap at the Twin Branch substation	0.4	J439 (MISO)
n5310.2	Replace substation structure at Argenta substation to accommodate larger wire	0.5	J439 (MISO)

AEP Transmission Zone

Upgrade Id	Project Description	Cost Estimate ($M)	Driver
n5311	Rebuild or Re-conductor approximately 30 miles of the Cook – T-094 (Segreto) 345 kV line	60	J439 (MISO)
n5251	Re-conductor 0.8 miles of the Casey - Breed 345 kV line	0.0007	J475 (MISO)
n5240	Perform a sag study on the Twin – Argenta 345 kV line to determine if the line section can be operated above its emergency rating of 1409 MVA	0.2	J498 (MISO)
N4747	Engineering Oversight to Construct New Interconnection Substation	1.02	U3-021
n4748	Transmission cut in work for TSS 971 Garden Prairie Road	1.635	U3-021
n4749	Upgrade relaying and communications equipment to coordinate with cut in of TSS 971 Garden Prairie Road	0.495	U3-021

AEP Transmission Zone

Upgrade Id	Project Description	Cost Estimate ($M)	Driver
n4750	Upgrade relaying and communications equipment to coordinate with cut in of TSS 971 Garden Prairie Road	0.495	U3-021
n4754	Upgrade relaying and communication equipment to coordinate with cut in of TSS 96 King Creek	0.446	U4-027
n4755	Upgrade relaying and communication equipment to coordinate with cut in of TSS 96 King Creek	0.341	U4-027
n5045	Construct a new switching station (Saxony) connecting to the East Leipsic – Richlands 138 kV line, including four (4) 138 kV circuit breakers, relays, SCADA, and associated equipment	4.29	V2-006
n5046	Install Saxony 138kV Primary and back-up 138 kV revenue metering	0.19	V2-006
n5047	Upgrade relaying at Yellow Creek substation	0.25	V2-006

AEP Transmission Zone

Upgrade Id	Project Description	Cost Estimate ($M)	Driver
n5048	Construct Saxony 138kV Line extension	7.24	V2-006
n5049	Relocate from its existing position, the portion of the existing East Leipsic - Richlands 138kV circuit that shares the 6 miles of double circuit towers with the E. Lima – E. Leipsic 138 kV circuit	0.83	V2-006
n5050	Upgrade relaying at East Lima 138 kV substation	0.12	V2-006
n5051	Upgrade relaying at East Leipsic 138 kV substation	0.38	V2-006
n5052	Upgrade relaying at Richland 138 kV substation	0.25	V2-006
n5053	Construct a new 138kV T-Line from Saxony to the existing East Leipsic – Richland line	0.15	V2-006

AEP Transmission Zone

Upgrade Id	Project Description	Cost Estimate ($M)	Driver
n4773	Install three 345 kV breakers at Losantville substation to accommodate the connection for V3-007	2.6061	V3-007
n4774	Install 345 kV metering on the new line exit for the V3-007 connection	0.3477	V3-007
n4713.1	Sturgis - Howe 69kV T-Line Removal for the rebuild of the 2.83 miles of existing Howe – Sturgis 69 kV line (AEP Portion)	0.266	X1-020
n4713.2	Right Of Way for the rebuild of the 2.83 miles of existing Howe – Sturgis 69 kV line (AEP Portion)	2.382	X1-020
n4742.1	Greentown - Dumont 765kV T-Line Circuit Cut-In for the new 765 kV switching Station	3.06	X1-020
n4742.2	Install 765 kV Metering at the new substation	1.284	X1-020

AEP Transmission Zone

Upgrade Id	Project Description	Cost Estimate ($M)	Driver
n4742.4	Install Telecommunications - Fiber Optic for the new substation	0.226	X1-020
n4347.1	Replace 25kA E. Towanda 230kV Hillside breaker with 50kA	0.45	X1-109
n3666	Construct a new Iron Ridge 138kV Switching Station	5.4077	Y1-006
n3666.1	Install ADSS Fiber at the new Iron Ridge 138kV substation	0.0546	Y1-006
n3666.2	Construct Jubal Early – Austinville 138kV T-Line Cut In	1.8549	Y1-006
n3666.3	Install 138 kV Revenue Metering at the new Iron Ridge 138kV substation	0.2006	Y1-006

APS Transmission Zone

Upgrade Id	Project Description	Cost Estimate ($M)	Driver
n5206	Replace 6 345 kV breakers with 3000A, 63 kA breakers at Wylie Ridge substation. Estimate assumes foundations, risers, and control cables will be replaced. Rewire 345 kV line transducers	4.6006	AA2-121
n5401	Install 138 kV rated breaker, breaker disconnects, and 138 kV bus including equipment and structures necessary for the installation and operation at the Hillcrest substation	1.6825	AB1-014
n5205	Loop existing Harrison-Wylie Ridge 500 kV transmission line into proposed Strope Road substation, approximately one span (at Strope Road Loop, Harrison-Wylie Ridge 500 kV line).	2.3293	AB1-069
n5207	Upgrade line relaying on 500 kV Strope Road (former Harrison line) at Wylie Ridge Substation	0.4181	AB1-069
n5208	Upgrade line relaying on 500 kV Strope Road (former Wylie Ridge) line at Harrison Substation	0.4181	AB1-069
n5333	Replace relaying on the Coneville 46kV line terminal at Potter Substation and install anti-islanding scheme including fiber communication cable	0.1489	AB1-082

APS Transmission Zone

Upgrade Id	Project Description	Cost Estimate ($M)	Driver
n5239	Adjust remote end relaying and metering settings at Yukon and Hatfield substations	0.0127	AB1-106
n5108	Replace the Wayne Junction and Sexton Junction 25 kV circuit breakers at Franklin Substation	0.71	AB1-171
n5104	Adjust Remote Relay and Metering Settings at Tidd and Wylie Ridge substations	0.1525	AB2-104
n5255	Adjust Remote Relay and Metering Settings at the Wylie Ridge 345 kV substation	0.0061	AB2-104
n5325	Upgrade remote-end protection, communications & metering equipment at Tidd 345kV substation	0.45	AB2-104
n5216	Modify relay settings for AC1-039 interconnection at Catoctin substation	0.0068	AC1-039

APS Transmission Zone

Upgrade Id	Project Description	Cost Estimate ($M)	Driver
n5217	Modify relay settings for AC1-039 interconnection at Monocacy substation	0.0068	AC1-039
n5250	Install a line tap from Catoctin – Monocacy 34.5 kV line to the Point of Interconnection including the installation of two (2) fully rated load-breaker air switches at the tap point and meter equipment inside the Interconnection Customer facilities	0.12	AC1-039
n5215	Adjust remote end relaying and metering settings at Greencastle 34.5 kV substation	0.0127	AC1-064
n5218	Adjust remote end relaying and metering settings at North Longview 500 kV substation	0.0127	AC1-140

ATSI Transmission Zone

Upgrade Id	Project Description	Cost Estimate ($M)	Driver
n5238	Replace 138kV Circuit Breaker B16 at Crossland Substation	0.2085	AA1-044
n5130	Adjust remote end relaying and metering settings at Highland, Mansfield, and Sammis 345kV Substations	0.0133	AB1-017
n5194.1	Replace 345kV Circuit Breaker with a 80kA Breaker B5213(GEN B) at Sammis substation	0.765	AB1-105
n5194.2	Replace 345kV Circuit Breaker with a 80kA BreakerB5218(GEN B) at Sammis substation	0.765	AB1-105
n5194.3	Replace 345kV Circuit Breaker with a 80kA Breaker BVR VLY(B456) at Sammis substation	0.765	AB1-105
n5194.4	Replace 345kV Circuit Breaker with a 80kA Breaker BVR VLY(B459) at Sammis substation	0.765	AB1-105

ATSI Transmission Zone

Upgrade Id	Project Description	Cost Estimate ($M)	Driver
n5194.5	Replace 345kV Circuit Breaker with a 80kA Breaker GEN.3-E(B279) at Sammis substation	0.765	AB1-105
n5194.6	Replace 345kV Circuit Breaker with a 80kA Breaker GEN.4-E.(B11) at Sammis substation	0.765	AB1-105
n5194.7	Replace 345kV Circuit Breaker with a 80kA Breaker GEN.5-E(B284) at Sammis substation	0.765	AB1-105
n5194.8	Replace 345kV Circuit Breaker with a 80kA Breaker GEN.6-E.B(B5) at Sammis substation	0.765	AB1-105
n5194.9	Replace 345kV Circuit Breaker with a 80kA Breaker GEN.7-E(B453) at Sammis substation	0.765	AB1-105
n5194.10	Replace 345kV Circuit Breaker with a 80kA Breaker HIL-W.B(B280) at Sammis substation	0.765	AB1-105

ATSI Transmission Zone

Upgrade Id	Project Description	Cost Estimate ($M)	Driver
n5194.11	Replace 345kV Circuit Breaker with a 80kA Breaker HL-GEN3(B278) at Sammis substation	0.765	AB1-105
n5194.12	Replace 345kV Circuit Breaker with a 80kA Breaker S.CAN-W(B290) at Sammis substation	0.765	AB1-105
n5194.13	Replace 345kV Circuit Breaker with a 80kA Breaker SN-GEN5(B287) at Sammis substation	0.765	AB1-105
n5194.14	Replace 345kV Circuit Breaker with a 80kA Breaker SR-W.BUS(B17) at Sammis substation	0.765	AB1-105
n5194.15	Replace 345kV Circuit Breaker with a 80kA Breaker STRGEN.4(B14) at Sammis substation	0.765	AB1-105
n5194.16	Replace 345kV Circuit Breaker with a 80kA Breaker TR-GEN6(B295) at Sammis substation	0.765	AB1-105

ATSI Transmission Zone

Upgrade Id	Project Description	Cost Estimate ($M)	Driver
n5194.17	Replace 345kV Circuit Breaker with a 80kA Breaker TRW.BUS(B298) at Sammis substation	0.765	AB1-105
n5195	Replace 138kV Circuit Breakers B16, B6, and B65 at Evergreen substation	0.76	AB1-105
n5196	Install a new AB1-105 Interconnection substation, 345kV 3-breaker ring bus along the Hannah-Highland line	8.7236	AB1-105
n5197	Loop the Hanna-Highland 345kV circuit into the new 345kV ring bus approximately 1.3 circuit miles southwest of Highland substation to create a new circuit from Highland substation to the new ring bus	0.6839	AB1-105
n5198	Loop the Hanna-Highland 345kV circuit into the new 345kV ring bus approximately 1.3 circuit miles southwest of Highland substation to create a new circuit from Hanna substation to the new ring bus	0.6709	AB1-105
n5199	Install new line relaying for future AB1-105 Interconnect line exit at Highland substation	0.1609	AB1-105

ATSI Transmission Zone

Upgrade Id	Project Description	Cost Estimate ($M)	Driver
n5200	Install new communications equipment at existing Hanna substation for the future AB1-105 Interconnect and install new line relaying panel	0.2241	AB1-105
n5201	Install Fiber Optic Cable from the AB1-105 Interconnection to the Highland substations and back, approximately 2.9 miles each way	0.5055	AB1-105
n5241	Replace (78-B-1-J) 138kV overdutied breakers, bus work, and ground grid with 145kV 80kA breakers at Bayshore substation	0.8586	AB1-107
n5242	Replace (78-B-1-K) 138kV overdutied breakers, bus work, and ground grid with 145kV 80kA breakers at Bayshore substation	0.8586	AB1-107
n5243	Replace (78-B-13103) 138kV overdutied breakers, bus work, and ground grid with 145kV 80kA breakers at Bayshore substation	0.8586	AB1-107
n5244	Replace (78-B-13104) 138kV overdutied breakers, bus work, and ground grid with 145kV 80kA breakers at Bayshore substation	0.8586	AB1-107

ATSI Transmission Zone

Upgrade Id	Project Description	Cost Estimate ($M)	Driver
n5245	Replace (78-B-13252) 138kV overdutied breakers, bus work, and ground grid with 145kV 80kA breakers at Bayshore substation	0.8586	AB1-107
n5246	Replace (78-B-13253) 138kV overdutied breakers, bus work, and ground grid with 145kV 80kA breakers at Bayshore substation	0.8586	AB1-107
n5247	Replace (78-B-13254) 138kV overdutied breakers, bus work, and ground grid with 145kV 80kA breakers at Bayshore substation	0.8586	AB1-107
n5248	Replace (78-B-1-J) 138kV overdutied breakers, bus work, and ground grid with 145kV 80kA breakers at Bayshore substation	0.8586	AB1-107
n5249	Replace (78-B-2-K) 138kV overdutied breakers, bus work, and ground grid with 145kV 80kA breakers at Bayshore substation	0.8586	AB1-107
n5286	Construct a 138kV three breaker ring bus at AB1-107 GT-1 substation, interconnect substation on the Bayshore-GM Powertrain line	5.217	AB1-107

ATSI Transmission Zone

Upgrade Id	Project Description	Cost Estimate ($M)	Driver
n5287	Loop the Oregon Generation facility GT-1 to the Bayshore - GM Powertrain 138kV line at Bayshore - GM Powertrain 138kV - Loop to Interconnection Station for Oregon Gen GT-1_AB1-107	2.26	AB1-107
n5288	Provide a single span tap from Lallendorf substation ring bus to Oregon Generation facility Steam Turbine at Lallendorf Tap for Oregon Gen Steam Turbine_AB1-107	0.34	AB1-107
n5289	Replace line relaying on the Bayshore (AB1-1007 GT-1) 138kV Line at the GM Powertrain substation	0.208	AB1-107
n5290	Upgrade 138kV line relaying to GM Powertrain (AB1-107 GT-1) 138kV Line at Bayshore substation	0.203	AB1-107
n5291	Interconnection (GT-1) to Bayshore and GM Powertrain substations. Install Fiber Optic Cable from Interconnection (GT-1) to Bayshore substations and back, approximately 1.8 miles. Install Fiber Optic Cable from Interconnection (GT-1) to GM Powertrain substations	1.048	AB1-107
n5292	Install a 345kV Breaker and Line terminal for the AB1-107 ST, GT2 Interconnection at Lallendorf substation	1.699	AB1-107

ATSI Transmission Zone

Upgrade Id	Project Description	Cost Estimate ($M)	Driver
n5293	Install new relaying on Ottawa line at Greenfield substation	0.245	AB1-107
n5294	Install new breaker bay and line exit to Greenfield at Ottawa substation	1.58	AB1-107
n5305	Replace (78-B-3-J) 138kV overdutied breakers, bus work, and ground grid with 145kV 80kA breakers at Bayshore substation	0.8586	AB1-107
n5306	Replace (78-B-3-K) 138kV overdutied breakers, bus work, and ground grid with 145kV 80kA breakers at Bayshore substation	0.8586	AB1-107
n5307	Replace (78-B-J_L) 138kV overdutied breakers, bus work, and ground grid with 145kV 80kA breakers at Bayshore substation	0.8586	AB1-107
n5308	Replace (78-B-13251) 138kV overdutied breakers, bus work, and ground grid with 145kV 80kA breakers at Bayshore substation	0.8586	AB1-107

ATSI Transmission Zone

Upgrade Id	Project Description	Cost Estimate ($M)	Driver
n5309	Replace (78-B-13261) 138kV overdutied breakers, bus work, and ground grid with 145kV 80kA breakers at Bayshore substation	0.8586	AB1-107
n5258	Install 138kV three breaker ring bus connector station for new customer generation addition along the Galion-Roberts South 138kV line	5.148	AB2-131
n5259	Loop the Galion-Roberts South 138kV circuit into the proposed 3-breaker ring bus near tower #3801 at Galion-Roberts South 138kV Loop	0.489	AB2-131
n5260	Upgrade line relaying for Roberts 138kV line exit and rename for new AB2-131 PJM station at Galion substation	0.178	AB2-131
n5261	Upgrade line relaying for Galion 138kV line exit and rename for new AB2-131 PJM station at Roberts substation	0.178	AB2-131
n5262	Install new ADSS fiber build from the proposed ring bus to both Galion and Roberts substations	2.618	AB2-131

ATSI Transmission Zone

Upgrade Id	Project Description	Cost Estimate ($M)	Driver
n5313	Upgrade the Monroe – Lallendorf 345 kV line span over the Maumee River	1	J572 (MISO)
n5054	Relocate the existing East Leipsic-Yellow Creek T-Line exit at East Leipsic Station	0.3	V2-006
n5055	Reconfigure the East Leipsic-East Lima 138kV circuit to provide a loop to East Leipsic and an extension to Yellow Creek	0.11	V2-006

COMED Transmission Zone

Upgrade Id	Project Description	Cost Estimate ($M)	Driver
n4617	Rebuild 7.5 miles of the Timblin-Trade City 115kV line to 636 kcmil ACSS and replace existing structures	18.5593	AA1-087
n5144	Upgrade L10805 Kendall - Lockport 345 kV line conductor	18.2	AA2-035
n5145	Reconfigure Wilton 765kV bus thereby allowing for 765kV L11216 (currently on Bus 6) to be relocated to Bus 8. Along with this line relocation, installation of 2-765kV BT CB's (6-8 & 8-2)	11	AA2-035
n5178.1	Replacement of 345kV breaker at Sta 6 Byron BT5-6 with 2-cycle IPO breaker	3	AB1-089
n5178.2	Replacement of 345kV breaker at Sta 6 Byron BT4-5 with 2-cycle IPO breaker	3	AB1-089
n5178.3	Replacement of 345kV breaker at Sta 6 Byron BT11-12 with 2-cycle IPO breaker	3	AB1-089

COMED Transmission Zone

Upgrade Id	Project Description	Cost Estimate ($M)	Driver
n5178.4	Replacement of 345kV breaker at Sta 6 Byron BT12-13 with 2-cycle IPO breaker	3	AB1-089
n5179	Installation of about 50 miles of 345kV line from AB1-089/AB1-090 to Wayne	100	AB1-089
n5179.1	Installation of 2-345kV breakers at Wayne and 3-345kV breakers at AB1-089/AB1-090 terminal station	15	AB1-089
n5315	Re-conductor the Cherry Valley – Garden Prairie 345 kV line and upgrade terminal equipment at both ends	50	AB1-089
n5318	Re-conductor the Garden Prairie – Silver Lake 345 kV line and station conductor at both terminals	50	AB1-090
n5252	Mitigate the sag on the Wilton - Dumont 765 kV line L11215 to achieve an ALDR that exceeds 6166 MVA	9	AB1-122

COMED Transmission Zone

Upgrade Id	Project Description	Cost Estimate ($M)	Driver
n5253	Re-conductor the ComEd portion of Crete - St John 345 kV line	18	AB1-122
n5303	Rebuild/Re-conductor 40.61 miles of the AEP owned section of the Olive - University Park 345 kV ACSR/PE 1414 62/19 line section 1 and replace Olive switches and riser	82.6	AB1-122
n5324	Re-conductor the AB1-122 Tap – Dresden 345 kV line	20	AB1-122
n5358	Re-conductor 28 miles of 345kV Wempletown - Byron line and upgrade Substation Conductor at both Wempletown and Byron substations	56.1	AB1-185
n5359	Re-conductor 40.5 miles of 345kV Silver lake – Garden Prairie (U3-021) line and upgrade Substation Conductor at Silver Lake substation	54.1	AB1-185
n5360	Re-conductor 13.8 miles of 345kV Cherry Valley – Garden Prairie (U3-021) line	27	AB1-185

COMED Transmission Zone

Upgrade Id	Project Description	Cost Estimate ($M)	Driver
n5361	Re-conductor 2.8 miles of 138kV of Nelson - Rock Falls; and upgrade Substation Conductor at Nelson substation	2.9	AB1-185
n5362	Re-conductor 40 miles of 345kV Nelson - Cordova line	80	AB1-185
n5363	Upgrade substation conductor at Nelson substation	0.1	AB1-185
n5364	Upgrade substation conductor at Electric junction substation	0.1	AB1-185
n5365	Re-conductor 10.4 miles of 138kV Rock Falls line	10.4	AB1-185
n5366	Re-conductor 0.045 miles of 138kV Kickapoo - LaSalle County line; and upgrade Substation Conductor at LaSalle County substation	0.145	AB1-185

COMED Transmission Zone

Upgrade Id	Project Description	Cost Estimate ($M)	Driver
n5367	Perform sag study on the Byron to Cherry Valley 345 kV line	0.15	AB1-185
n5368	Re-conductor 26.9 miles of 138 kV Normandy to Kewannee line	26.9	AB1-185
n5369	Re-conductor 5.4 miles of 138kV Normandy line	5.4	AB1-185
n5370	Re-conductor 13.6 miles of 345kV Electric Junction to Lombard line	27.2	AB1-185
n5371	Re-conductor 6.7 miles of 345kV Byron to Cherry Valley line	13.4	AB1-185
n5372	Upgrade the substation Conductor at Lasalle County 345 kV substation	0.1	AB1-185

COMED Transmission Zone

Upgrade Id	Project Description	Cost Estimate ($M)	Driver
n5373	Re-conductor 1 mile of 138kV Plano - Plano West Line; and upgrade Substation Conductor at Plano substation	1.1	AB1-185
n5374	Install 138kV Circuit Breaker at Cherry valley substation	1.5	AB1-185
n5375	Replace Wave Trap at Belvidere substation	0.1	AB1-185
n5376	Perform Sag study on the Marengo to Pleasant Valley line and update the Station Conductor at Pleasant Valley substation	4.5	AB1-185
n5377	Replace 138kV Circuit Breaker at Cherry Valley substation	1.5	AB1-185
n5378	Replace (2) Circuit Switches on the Belvidere to Marengo line (one at Belvidere substation and one at Marengo substation)	0.2	AB1-185

COMED Transmission Zone

Upgrade Id	Project Description	Cost Estimate ($M)	Driver
n5379	Replace Wave Trap at Belvidere substation on the Belvidere – B465 line 15624	0.1	AB1-185
n5380	Re-conductor 4 miles of 138kV Belvidere to Alpine line	4	AB1-185
n5381	Upgrade relaying at the Waterman 138 kV substation	0.1	AB1-185
n5382	Upgrade station conductor at the Waterman substation	0.1	AB1-185
n5383	Replace 345kV Bus Tie Breaker 1-2 at H471 substation	2	AB1-185
n5384	Reconductor 8.8 miles of 138kV West Plano to Sandwich line	8.8	AB1-185

COMED Transmission Zone

Upgrade Id	Project Description	Cost Estimate ($M)	Driver
n5385	Re-conductor 12.5 miles of 138kV Nelson to O-029 line	12.5	AB1-185
n5386	Replace the Disconnect Switches on the Nelson to Rock Fall line at Rock Fall substation	0.05	AB1-185
n5387	Re-conductor 7.9 miles of 345kV line from Nelson to ESSH471 substations	15.8	AB1-185
n5388	Replace (2) Disconnects at Nelson – Electric Junction line at Nelson substation	0.1	AB1-185
n5389	Replace (2) Disconnects on the Nelson – Electric Junction line at Electric-junction substation	0.1	AB1-185
n5390	Re-conductor 11 miles of line from GardenPL - ESSH71 line	11	AB1-185

COMED Transmission Zone

Upgrade Id	Project Description	Cost Estimate ($M)	Driver
n5391	Replace 345kV bus tie breaker 4-7 at Cherry Valley substation	2	AB1-185
n5392	Re-conductor 19.472 miles of 345kV line from Byron – Lee County Energy Center and upgrade Substation Conductor at Byron substation	39.044	AB1-185
n5393	Re-conductor 5.4 miles of 138kV line from O-029 to Normandy substation	5.4	AB1-185
n5394	Re-conductor 17.9 miles of 138kV line from Normandy to Annawan (U4-027) substation	17.9	AB1-185
n5395	Replace Wave Trap at Kewannee substation	0.1	AB1-185
n5396	Re-conductor 6.7 miles of 138kV line from Byron to Cherry Valley substations	13.4	AB1-185

COMED Transmission Zone

Upgrade Id	Project Description	Cost Estimate ($M)	Driver
n5397	Replace TR. 81 138kV Circuit Breaker at Cherry Valley substation	1.5	AB1-185
n5398	Install an additional (fourth) Auto transformer 300 MVA at Nelson substation	15	AB1-185
n5399	Replace TR. 84 138kV Circuit Breaker at Nelson substation	1.5	AB1-185
n5400	Replace two (2) Wave Traps at Quadcities substation	0.2	AB1-185
n5302	Mitigate sag limits on the Wayne – Tollway ; B 345 kV line	3	AB2-096
n5316	Re-conductor the Cordova - Nelson 345 kV line and replace station conductor at Cordova	20.2	J302 (MISO)

COMED Transmission Zone

Upgrade Id	Project Description	Cost Estimate ($M)	Driver
n5321	Re-conductor the Quad Cities – ESS H471 345 kV line and upgrade station conductor at Sterling Steel and Quad Cities	20.2	J302 (MISO)
n5322	Re-conductor the ESS H471 - Nelson 345 kV line and upgrade station conductor	20.2	J414 (MISO)
n5317	Re-conductor the E. Frankfort – Crete 345 kV line	10	J415 (MISO)
n5319	Re-conductor the Nelson – Lee County 345 kV line and upgrade station conductor, 2-345kV Bus Tie Circuit Breakers, and disconnect switches at Nelson	15	J456 (MISO)
n5320	Re-conductor the Pontiac - Dresden 345 kV line	22	J474 (MISO)
n4734	Upgrade 345kV switches at TSS 155 for L15502, upgrade station conductor and adjust CT ratios at the two station terminals	0.35	J498 (MISO)

COMED Transmission Zone

Upgrade Id	Project Description	Cost Estimate ($M)	Driver
n5254	Re-conductor the Lee County - Byron 345 kV line	6	J534 (MISO)
n5326	Build a 2nd Nelson - Electric Junction 345 kV line	300	J577 (MISO)
n5323	Re-conductor the Lee County – Byron 345 kV line, upgrade station conductor, and replace bus disconnect switches at Byron	6.5	J594 (MISO)
n4751	Engineering Oversight to Construct New Interconnection Substation	1.12	U4-027
n4752	Transmission cut in work for TSS 96 King Creek	1.435	U4-027
n4753	Upgrade relaying and communication equipment to coordinate with cut in of TSS 96 King Creek	0.337	U4-027

COMED Transmission Zone

Upgrade Id	Project Description	Cost Estimate ($M)	Driver
n5171.1	Replace Gang operated circuit breaker at Kewanee TSS 138 kV bus 2 (circuit 7411) with Independent Pole Operated breaker	0.126	U4-027
n5171.2	Replace Gang operated circuit breaker at Kewanee TSS 138 kV bus 1 with Independent Pole Operated breaker	0.126	U4-027
n5171.3	Replace Gang operated circuit breaker at Kewanee TSS 138 kV bus 1 (circuit 7423) with Independent Pole Operated breaker	0.126	U4-027
n5171.4	Replace Gang operated circuit breaker at Kewanee TSS 138 kV bus 1 (circuit 7421) with Independent Pole Operated breaker	0.126	U4-027
n5171.5	Replace Gang operated circuit breaker at Kewanee TSS 138 kV bus 2 (circuit 6101) with Independent Pole Operated breaker	0.126	U4-027
n5171.6	Replace Gang operated circuit breaker at Kewanee TSS 138 kV bus 1 (circuit 7413) with Independent Pole Operated breaker	0.126	U4-027

COMED Transmission Zone

Upgrade Id	Project Description	Cost Estimate ($M)	Driver
n5173	Replace dual primary relaying at U4-027 138 kV substation	1	U4-027
n2115	Construct a new switching station (U4-028), including four 138 kV circuit breakers, relays, 138 kV revenue metering, SCADA, and associated equipment	5.86	U4-028
n4797	Add new 138 kV breaker and electrically re-route high side of Transformer #2 to the 138 kV East Bus at West Fremont substation	0.5509	U4-028
n4347.2	Replace 25kA E. Towanda 230kV Moshannon breaker with 50kA	0.45	X1-109
n5295	Engineering and Construction Oversight at TSS 92 McLean substation	1.36	Z2-087
n5296	Transmission Line Cut In and Turning Structures at TSS 92 McLean substation	3.2	Z2-087

COMED Transmission Zone

Upgrade Id	Project Description	Cost Estimate ($M)	Driver
n5297	Upgrade Relay, Protection, and Communication equipment at TSS80 Pontiac substation	0.22	Z2-087
n5298	Upgrade Relay, Protection, and Communication equipment at RP4 Brokaw substation	0.025	Z2-087

DAYTON Transmission Zone

Upgrade Id	Project Description	Cost Estimate ($M)	Driver
n5136	Replace the Beatty road line riser section (sub cond 2-1024.5 ACAR) to increase the ratings on the Adkins – Beatty 345 kV line	0.1	AB1-169
n5211	Install new 345 kV bay including 2 circuit breakers at Stuart 345 kV substation	2.5	AB1-169
n5456	Replace a 1200 Amp Wave Trap at Robinson substation on the Holland - Robinson 69 kV line	0.04	AC1-069
n5457	Re-conductor/rebuild the AEP portion of the Adkins-Beatty 345 kV line	26	AC1-069

DOMINION Transmission Zone

Upgrade Id	Project Description	Cost Estimate ($M)	Driver
n5191	Build a three breaker ring bus at Occoneechee 115kV substation	5.56544	AA2-053
n5192	Install transmission structures on the Carolina – Jackson DP 115 kV line to split the existing line and connect new substation	0.49715	AA2-053
n5193	Upgrade relaying on the Carolina – Earleys 115 kV line to accommodate new generation and interconnection substation	0.10288	AA2-053
n5209	Install Relay for breaker failure lockout trip at South Justice substation	0.04858	AA2-068
n5351	Install substation relay for transfer trip from Carolina and Palmer Springs substations	0.1791	AA2-169
n5202	Build a three breaker ring bus at Wards Creek substation	5.98734	AA2-177

DOMINION Transmission Zone

Upgrade Id	Project Description	Cost Estimate ($M)	Driver
n5203	Install transmission structures on the Hopewell – Surry 230kV line to split the existing line and connect the new substation	0.9552	AA2-177
n5204	Upgrade relaying at Hopewell – Surry 230 kV line to accommodate new generation and interconnection substation	0.06254	AA2-177
n5175	Upgrade substation equipment to add a fourth ring bus position at Mackeys substation	1.5	AA2-178
n5468	Install transfer trip transmitters for anti islanding scheme on the Trowbridge – Mackeys – Winfall 230 kV line	0.0567	AA2-178
n5458	Install circuit breaker to create a new line terminal at Riders Creek substation	2.4689	AB1-013
n5459	Install Wave Trap and a line CCVT for power Line Carrier communication on the Riders Creek – Mackeys 115 kV line	0.1933	AB1-013

DOMINION Transmission Zone

Upgrade Id	Project Description	Cost Estimate ($M)	Driver
n5257	Install new transmission structures, as well as 2 switches and one Wave Trap at the new Meherrin substation	0.7	AB1-173
n5212	Add three new 500 kV breakers and associated equipment to the exsiting Chickahominy 500 kV substation	6.5	AB2-068
n5407	Build one span of 230 kV attachment line between the AB2-158 generation station and the new AB2-158 switching substation (Desper Substation)	1.2	AB2-158
n5408	Install metering and associated protection equipment at AB2-158 generation substation	0.6	AB2-158
n5409	Build the new AB2-158 Switching substation (interconnection substation)	6.3	AB2-158
n5410	Install Transmission structure in line with South Anna - Louisa 230 kV transmission line to allow the proposed interconnection switching station to be interconnected with the transmission system	1	AB2-158

DOMINION Transmission Zone

Upgrade Id	Project Description	Cost Estimate ($M)	Driver
n5465	Wreck and rebuild the Skiff Creek-Kings Mill 230 kV line	8.4	AC1-107
n5466	Replace Wave Traps at both Chickahominy and Surry 500 kV substations	1	AC1-107
n5460	Wreck and rebuild the Penniman - Waller 230 kV line	13	AC1-159
n5461	Wreck and rebuild the Kings Mill - Penniman 230 kV line	6.8	AC1-159
n5462	Install a third Chesapeake 230/115 kV transformer	7	AC1-159
n5463	Wreck and rebuild 11 miles of Chesapeake-Greenwich 230 kV line	21.2	AC1-159

DOMINION Transmission Zone

Upgrade Id	Project Description	Cost Estimate ($M)	Driver
n5464	Replace Wave Traps at both Chickahominy and Elmont 500 kV substations	0.5	AC1-159

DPL Transmission Zone

Upgrade Id	Project Description	Cost Estimate ($M)	Driver
n5115	Build a new 230 kV line terminal at the Indian River 230 kV North Substation. The new terminal will be designed and constructed off an existing breaker and a half leg with Indian River AT22	1.3	AB1-056
n5116	Build a new 230 kV line terminal at the Indian River 230 kV North Substation. This project will require the expansion of the substation to the northwest, the extension of the end buses, and the construction of a new breaker and a half leg to add one new terminal position	3.9	AB1-057
n5117	Increase the emergency rating of the Milford to Steele 230 kV line by rebuilding the circuit, including the replacement of poles	43.9	AB1-057
n5119	Build a new 138 kV substation with a 3 position ring bus (with provisions to add a 4th position for PJM Queue Project AB2-032)	4.6	AB1-141
n5118	Reconfigure Price 69 kV Substation to be a 4 position ring bus (with provisions to add a 5th position). This will include adding 3 new 69 kV circuit breakers, disconnect switches, CVTs, line relays, breaker relays, and associated bus equipment and support	3.4	AB1-162

DPL Transmission Zone

Upgrade Id	Project Description	Cost Estimate ($M)	Driver
n5015	Replace disconnect switch, rebuild line & replace conductor for Church - New Meredith 69kV line	11.3	AB1-186
n5019	Replace bushing for Easton 138/69kV transformer	0.08	AB1-186
n5442	Rebuild Line #23033 from Cartanza - Mil 230 kV substations	39.75	AB1-186
n5443	Replace auto transformer 2 from Church - Church 69 substation	2.75	AB1-186
n5444	Replace disconnect switch, rebuild line 6704-1 from Church 69 – N. Meredth and replace conductor on 6701-1 line	11.3	AB1-186
n5445	Replace bushing on Auto transformer 1 at Easton 138 kV substation	0.08	AB1-186

DPL Transmission Zone

Upgrade Id	Project Description	Cost Estimate ($M)	Driver
n5446	Rebuild Line #22085 from Edgemr5 - Linwood with dual 1590 ACSR	38.25	AB1-186
n5447	Rebuild line #13773 from Farm view - MILF_138 with 954 ACSR 125 C	2.7715	AB1-186
n5448	Rebuild line #13703 from INDRV 2&3 - NELSON and replace substation bus	31.53	AB1-186
n5449	Re-conductor C & D canal crossing from Keen - Steele 23001 line	0.32	AB1-186
n5450	Replace relays on Keen - Steele 230 KV line	0.5	AB1-186
n5451	Rebuild 69 kV line 6705_1 from Laurel - AA1-142 Tap with 954 ACSR	10.91	AB1-186

DPL Transmission Zone

Upgrade Id	Project Description	Cost Estimate ($M)	Driver
n5452	Rebuild 69 kV line 6705_1 from Sharptown - AA1-142 Tap with 954 ACSR	10.91	AB1-186
n5453	Rebuild 230 kV line #23076 from Milford - Steele with 1590 ACSR 125 C	43.965	AB1-186
n5454	Rebuild 138 kV line 13707 from Nelson - Vienna with 1590 ACSR	17.473	AB1-186
n5455	Rebuild Line 6705 _2 from Sharptown - Vienna 69 kV with 1590 ASCR and upgrade all substation equipment to 2000 A	12.4698	AB1-186
n5105	Replace the two existing Wave Traps and potential transformers at the Rock Springs 500kV substation to increase their emergency rating from 2905 to 3014 MVA	0.42	AB2-021
n5299	Build a new 138 kV terminal off of the new 138 kV substation created for PJM Queue Project AB1-141	1	AB2-032

DPL Transmission Zone

Upgrade Id	Project Description	Cost Estimate ($M)	Driver
n5300	Rebuild a small section of the Middletown Tap – Mt. Pleasant 138 kV circuit, install new poles, and re-mount the 138 kV disconnect switches	0.0008	AB2-032
n5301	Rebuild a small section of the Townsend - Middletown Tap 138 kV circuit, install new poles, and re-mount the 138 kV disconnect switches	0.0008	AB2-032

JCPL Transmission Zone

Upgrade Id	Project Description	Cost Estimate ($M)	Driver
n5146	Install line riser and connection hardware to accept the Interconnection Customer 2156 ACSS Bluebird conductor terminating at Gilbert 230kV substation	1.45	AB1-154
n5147	Build new 0.05 mile interconnection of AB1-154 to accommodate reconstruction of the Gilbert 230kV yard as breaker and a half configuration	0.943	AB1-154
n5148	Install two line terminal breakers, risers, necessary disconnects and controls for the AB1-154 terminal at Gilbert 230kV substation	5.171	AB1-154
n5149	Install fiber optic cable from Gilbert 230kV to the AB1-154 generator	0.0197	AB1-154
n5150	Reconstruct Gilbert 230kV yard as a breaker and a half layout	12.155	AB1-154
n5150.1	Replace Gilbert 230 kV breaker A13 with a 63 kA breaker Note: the cost of the replacement is lumped in the n5150 Network upgrade	0	AB1-154

JCPL Transmission Zone

Upgrade Id	Project Description	Cost Estimate ($M)	Driver
n5150.2	Replace Gilbert 230 kV breaker PV with a 63 kA breaker Note: the cost of the replacement is lumped in the n5150 Network upgrade	0	AB1-154
n5150.3	Replace Gilbert 230 kV breaker C11 with a 63 kA breaker Note: the cost of the replacement is lumped in the n5150 Network upgrade	0	AB1-154
n5150.4	Replace Gilbert 230 kV breaker 13P with a 63 kA breaker Note: the cost of the replacement is lumped in the n5150 Network upgrade	0	AB1-154
n5150.5	Replace Gilbert 230 kV breaker VC with a 63 kA breaker Note: the cost of the replacement is lumped in the n5150 Network upgrade	0	AB1-154
n5150.6	Replace Gilbert 230 kV breaker 1216 with a 63 kA breaker Note: the cost of the replacement is lumped in the n5150 Network upgrade	0	AB1-154
n5151	Reconfigure the existing Gilbert - Martins Creek 230kV line (P2016) transmission exit from Gilbert to accommodate the Gilbert substation rebuild	0.898	AB1-154

JCPL Transmission Zone

Upgrade Id	Project Description	Cost Estimate ($M)	Driver
n5152	Reconfigure the existing Gilbert - Glen Gardner 230kV line (V1036) transmission exit from Gilbert to accommodate the Gilbert substation rebuild	0.931	AB1-154
n5153	Reconfigure the existing Gilbert - Morristown 230kV line (V1036) transmission exit from Gilbert to accommodate the Gilbert substation rebuild	0.918	AB1-154
n5154	Reconfigure the existing Gilbert - PPL Springfield 230kV line (A1015) transmission exit from Gilbert to accommodate the Gilbert substation rebuild	1.42	AB1-154
n5155	Rebuild existing Gilbert - Bank 16 230kV transmission line at Gilbert to accommodate the Gilbert substation rebuild	1.131	AB1-154
n5156	Rebuild existing Gilbert - Bank 13 230kV transmission line at Gilbert to accommodate the Gilbert substation rebuild	0.752	AB1-154
n5157	Reconfigure the existing Gilbert – Flanders – Gilbert – Pequest River 115kV transmission line near the Gilbert substation to accommodate the Gilbert substation rebuild	0.76	AB1-154

JCPL Transmission Zone

Upgrade Id	Project Description	Cost Estimate ($M)	Driver
n5158	Reconfigure the existing Gilbert JC - Raubsville ME 34.5kV transmission line near the Gilbert substation to accommodate the Gilbert substation rebuild	0.417	AB1-154
n5159	Reconfigure the existing Gilbert - Bank 11 34.5kV transmission line near the Gilbert substation to accommodate the Gilbert substation rebuild	0.245	AB1-154
n5160	Upgrade Gilbert - Morris Park relaying at Morris Park substation	0.465	AB1-154
n5161	Upgrade Gilbert - Morristown relaying at Morristown substation	0.352	AB1-154
n5162	Upgrade Gilbert - Glen Gardener relaying at Glen Gardener substation	0.449	AB1-154
n5163	Upgrade Gilbert-Springfield relaying at Springfield substation	0.479	AB1-154

JCPL Transmission Zone

Upgrade Id	Project Description	Cost Estimate ($M)	Driver
n5164	Install fiber optic cable from Gilbert transformer 11 low side to Gilbert, from Gilbert 230kV to the Bank 13, and from Gilbert 230kV to the CT9	0.0814	AB1-154
n5165	Re-conductor 11.9 miles of Gilbert - Springfield 230kV circuit replacing 1590 ACSR with 1590 ACSS	15.325	AB1-154
n5166	Re-conductor approximately 1700 feet of transmission three-phase 1590 ACSR with 1590 ACSS. Re-conductor approximately 50 feet of substation deadend downcomer three-phase 1590 ACSR with 1590 ACSS	0.5	AB1-154
n5226	Tap the Morris Park '27051' 12 kV distribution circuit to the AC1-018 POI with a new tap pole and 100K fuses. Install metering CTs and PTs.	0.0865	AC1-018
n5231	Tap the Englishtown-Monroe (H-34) 34.5 kV line to the AC1-207 POI through one (1) new SCADA-controlled switch	0.1116	AC1-207
n5232	Install two (2) new SCADA-controlled switches on new poles in the Englishtown - Monroe (H-34) 34.5 kV line on either side of the tap point to the AC1-207 Customer	0.223	AC1-207

JCPL Transmission Zone

Upgrade Id	Project Description	Cost Estimate ($M)	Driver
n5233	Adjust remote relay settings on the H-34 terminal at Englishtown Substation	0.0163	AC1-207
n5234	Adjust remote relay settings on the H-34 terminal at Monroe Substation	0.0163	AC1-207
n5432	Install 1 SCADA-controlled MOAB switch on the tap to the AC2-134 Customer	0.1562	AC2-134
n5433	Install 2 SCADA-controlled MOAB switches on the Franklin-Sussex 34.5 kV line on either side of the tap to the AC2-134 customer	0.2343	AC2-134
n5434	Adjust Remote Relay and Metering Settings at Franklin Substation	0.008	AC2-134

JCPL Transmission Zone

Upgrade Id	Project Description	Cost Estimate ($M)	Driver
n5435	Adjust Remote Relay and Metering Settings at Branchville Substation	0.008	AC2-134
n5436	Install 1 SCADA-controlled MOAB switch on the tap to the AC2-143 Customer	0.2092	AC2-143
n5437	Install 1 SCADA-controlled MOAB switch on the D82 34.5 kV line (Wyckoff Street - Englishtown) adjacent to the tap to the AC2-143 customer	0.2023	AC2-143
n5438	Revise relay settings on D82 line terminal at Wychoff Street substation	0.0335	AC2-143
n5439	Revise relay settings on D82 line terminal at Englishtown substation	0.0335	AC2-143
n5440	Revise relay settings on D82 line terminal at Monroe substation	0.0335	AC2-143

PECO Transmission Zone

Upgrade Id	Project Description	Cost Estimate ($M)	Driver
n5235	Install Line Terminal for Attachment Line for AA2-077 at Penrose substation	1.5	AA2-077
n5236	Modify relays for AA2-077 at Penrose substation	0.25	AA2-077
n5237	Replace #115 Circuit Breaker at Grays Ferry substation	0.5	AA2-077
n5332	Install Primary and Backup RFL Relays on the 372 34.5 kV Circuit at the North Wales substation	0.35	AB1-033

PENELEC Transmission Zone

Upgrade Id	Project Description	Cost Estimate ($M)	Driver
n5128	Adjust remote end relaying and metering settings at Potter and Niles Valley 115kV Substations	0.0127	AB1-160
n5067	Upgrade the line terminal equipment on the 115 kV to Mainesburg at the Mansfield substation	0.08	Q496 (NYISO)
n5068	Replace Wave Trap on the 230 kV Hillside line exit	0.0085	Q496 (NYISO)
n5069	Replace South Homer City Transformer	14.7947	Q496 (NYISO)
n5086	Update relay settings on 345kV Mainesburg line terminal at Homer City substation	0.1073	Q496 (NYISO)
n5087	Update relay settings and re-tune carrier equipment on 345kV Homer City line terminal at Mainesburg substation	0.1073	Q496 (NYISO)

PENELEC Transmission Zone

Upgrade Id	Project Description	Cost Estimate ($M)	Driver
n5402	Re-conductor the Everts Drive – South Troy 115 kV Line with high temperature conductor	5.9112	Q498 (NYISO)
n5403	Re-conductor ~8.8 miles of the Everts Drive – Mainesburg 115 kV Line with 795 ACSS conductor	17.5237	Q498 (NYISO)
n5404	Update relay settings on the Homer City 345kV Line at Mainesburg substation	0.0552	Q498 (NYISO)
n4317.1	Install one 345 kV breaker at the Leroy Center 345 kV substation	1.193	Y3-092
n4317.3	Build a new Leroy Center - Erie West 345 kV line	194.574	Y3-092
n4318	Re-conductor Leroy Center - Spruce 138 kV line	8.8986	Y3-092

PENELEC Transmission Zone

Upgrade Id	Project Description	Cost Estimate ($M)	Driver
n4319	Install a 50 MVAR capacitor bank at the Ashtabula 138 kV substation	1.0233	Y3-092
n4320.1	Replace the line side disconnect risers and connectors, and revise relay settings as necessary, on the Butler line terminal at the Karns City 138 kV substation	0.0132	Y3-092
n4320.2	Re-conductor the Karns City 138 kV line terminal at the Butler 138 kV substation including Wave Trap, line and bus side disconnects	0.0855	Y3-092
n4320.3	Re-conductor 15.6 miles of Butler - Karns City 138 kV line	12.8429	Y3-092

PPL Transmission Zone

Upgrade Id	Project Description	Cost Estimate ($M)	Driver
n5405	Modify relaying at East Palmerton 230-69kV Substation	0.141	AA2-017
n5406	Modify relaying at Acahela 230-69kV Substation	0.141	AA2-017
n5170	Tap Juniata - Alburtis 500 kV line to create a new DAUP 500kV station, and build 500kV line from Sunberry 500kV station to the new DAUP 500kV station	200	AA2-182
n5133	Build new 69kV transmission line from the Bear Creek tap to the Point of Interconnection	0.754	AB1-182
n5134	Modify existing protection and communication to accommodate the new AB1-182 interconnection	0.25	AB1-182
n5093	Construct new 69kV line along the Blooming Grove - West Damascus 69kV like to the AB2-012 Point of Interconnection	1.9	AB2-012

PPL Transmission Zone

Upgrade Id	Project Description	Cost Estimate ($M)	Driver
n5094	Install new protection equipment in the existing Blooming Grove substation to support the AB2-012 connection	0.158	AB2-012
n5095	Install new protection equipment in the existing Paupack substation to support the AB2-012 connection	0.158	AB2-012
n5467	Construct a new 230 kV Interconnection Switchyard along Eldred - Frackville 230kV Line	14.9	Y2-015
n5174	Install new 230kV series reactor and required associated substation equipment at Erie East substation	10	Y2-089
n4578	Install a 50MVAR capacitor bank at Juniata 500kV substation	8.75	Z1-083

PSEG Transmission Zone

Upgrade Id	Project Description	Cost Estimate ($M)	Driver
n5263	Rebuild Linden - Tosco 3 230 kV line with paired 795 ACSS	13.65	AB2-055
n5264	Rebuild TOSCO_2 - VFT 2 230 kV line with paired 1033 ACSS	7.5	AB2-055
n5265	Rebuild VFT 1 - WARINICO_1 230 kV line with paired 795 ACSS	38.925	AB2-055
n5266	Install a new GIS Breaker on the spare bay position and associated GIS / AIS bus work, UG cable, relaying, metering at the Bayonne 345kV substation	18.9	AB2-055
n5268	Rebuild SEWAREN-MINUEST_R 230 kV line with paired 795 ACSS	30.844	AB2-082
n5269	Wreck & Rebuild MINUEST_R - LINDEN 230 kV line with paired 795 ACSS	34.781	AB2-082

PSEG Transmission Zone

Upgrade Id	Project Description	Cost Estimate ($M)	Driver
n5270	Rebuild WARINICO_2 - ALDENE_4 230 kV line with 1590 ACSS	8.594	AB2-082
n5271	Rebuild METUCHEN - NEWDOVR_H 230 kV line with paired 795 ACSS	51.858	AB2-082
n5272	Rebuild NEWDOVR_H - FANWOOD_1 230 kV line with paired 795 ACSS	47.869	AB2-082
n5273	Expand the existing substation yard and Install a new breaker position and associated fencing, ground grid, dead end structures, bus work, switches, relaying, and metering at the Metuchen 230 KV substation	10.349	AB2-082

Revisions

- V1-10/02/2017- Original Slides Posted.
- V2-10/05/2017- Added new page 3, map of System Impact Studies completed.
- V3-10/09/2017- Updated Cover Page and Revision slide for consistency with other presentations.