

Connection Costs

*Loophole Costs Customers Over \$4 Billion to
Connect Data Centers to Power Grid*

Appendix: Compilation of Utility Projects by State

Mike Jacobs

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Appendix

How to Track These Costs

The PJM process for local transmission shows the trail of utilities providing data centers with multimillion-dollar connections and spreading those costs to all customers. Utilities' local transmission plans are incorporated into the Regional Transmission Expansion Plan (RTEP), and RTEP costs are integral to creating formula rates for those utilities. The Union of Concerned Scientists found that local transmission plans from utilities in seven states included projects that met the needs of a single new, large customer, which was often identified as a data center. These projects are listed in this appendix, along with the information collected from several steps in the process.

During Transmission Expansion Advisory Committee presentations, utilities label these needs with an initial number in a series reflecting the utility and the year the need was identified. When utilities submit locally planned transmission to PJM, they include the need, an initial serial number, descriptions of the physical transmission investment, project cost, and a project identification number. These project identification numbers and project costs are included in the RTEP report and several places in the OATT, including the templates used to calculate transmission formula rates. One hundred percent of the costs from Local Plan Submissions are allocated to the zone in which the transmission facilities are located.

From the local transmission plans, we found 130 projects from utilities in these seven states, including over \$4.3 billion of new costs in the 2024 PJM RTEP. These projects are listed in the appendix of this report, along with information and links that allow you to track these costs.

Table 1. Data Center–Caused Transmission Costs Approved in 2024

State	Number of Projects	Cost (Millions \$)
Illinois	3	\$239.0
Maryland	4	\$107.5
New Jersey	8	\$14.5
Ohio	37	\$1,299.7
Pennsylvania	16	\$491.8
Virginia	60	1,998
West Virginia	2	\$215.8
TOTAL:	130	\$4,356.3

Costs included in 2024 Regional Transmission Expansion Plan (RTEP). RTEP-tracked costs pass through to Federal Energy Regulatory Commission transmission rates. The transmission costs are then for paid through the retail rates of all customers of that utility.

Table 2. Illinois Data Center–Caused Transmission Costs Approved in 2024

Utility	Project #	Need #	MW	Cost (Millions \$)	Page #
ComEd	s3342.1-2	2024-01	210	175	page 134
	s3392.1	2024-006	42	0	page 134
	s3343.1-2	2024-007	113	64	page 134
TOTAL COST:				\$239	
# OF PROJECTS:				3	

Sources: ComEd Local Plan Submission and 2024 RTEP.

Table 3. Maryland Data Center–Caused Transmission Costs Approved in 2024

Utility	Project #	Need #	MW	Cost (Millions \$)	Page #
AP–First Energy	s3152.1-2	APS 2023-17	576	26.5	page 167
	s2881 earlier for same			15.1	page 151 (<u>2023 RTEP</u>)
	s3150.1-2	2023-29	300	35.4	page 167
	s3153.1	2023-31	360	28.7	page 167
	s3128.1	2023-14	5	1.8	page 166
TOTAL COST:				\$107.5	
# OF PROJECTS:				4	

Sources: AP–First Energy 2024 Supp RTEP Summary and 2024 RTEP. Note: s2881 serves the same project as Need # APS 2023-17, and is thus not reflected as a separate project in the project total number.

Table 4. New Jersey Data Center–Caused Transmission Costs Approved in 2024

Utility	Project #	Need #	MW	Cost (Millions \$)	Page #
JCPL	s3233.1	2023-007	29.9	1.5	page 193
	s3259.1	2023-058	14	1.3	page 194
	s3280.1	2023-004	22	5.8	page 195
	s3284.1	2023-059	10	0.3	page 195
	s3336.1	2024-016	11	1.4	page 196
	s3397.1	2023-003	17	1.4	page 196
	s3437.1	2022-004	10	0.8	page 196
Atlantic City Electric	s3154.1	ACE-2022-002	32	2	page 193
TOTAL COST:				\$14.5	
# OF PROJECTS:				8	

Sources: JCPL 2024 Local Plan Submission and 2024 RTEP; Atlantic City Energy 2024 Local Plan Submittal and 2024 RETP.

Table 5. Ohio Data Center–Caused Transmission Costs Approved in 2024

Utility	Project #	Need #	MW	Cost (Millions \$)	Page #
AEP	s3213.1-6	23-OH047	33	12	page 225
	s3305.1-3	23-OH78	196	9.3	page 226
	s3440.1-6	22-OH71	675	57.5	page 229
	s3441.1	21-OH49	203	30	page 229
	s3441.2	22-OH24	328	40	page 229
	s3441.3	22-OH35	218	5	page 229
	s3441.5	23-OH41	96	64.1	page 229
	s3441.7	4 of the last 4		143.7	page 229
	s3442.1	22-OH23	290	18.4	page 230
	s3442.2	22-OH34	216	1.8	page 230
	s3442.3	22-OH36	247	53.7	page 230
	s3442.4	22-OH45	200	10.8	page 230
	s3442.5	22-OH46	270	12.5	page 230
	s3442.6-7	22-OH75	125	20.3	page 230
	s3442.8	22-OH77	968	57.2	page 230
	s3442.9	23-OH16	100	14.3	page 230
	s3442.10	23-O19	337	58.3	page 231
	s3442.11	23-OH32	300	22.3	page 231
	s3442.12	23-OH40	720	13.2	page 231
	s3442.13	23-OH44	150	19	page 231
	s3442.14	23-OH52	720	1	page 231
	s3442.15	23-OH63	720	7	page 231
	s3442.16-26	above		378.7	page 231
	s3442.27-30	above		199	page 232
	s3445.1-4	23-OH48	40	5.3	page 232

(CONTINUED) Table 5. Ohio Data Center–Caused Transmission Costs Approved in 2024

Utility	Project #	Need #	MW	Cost (Millions \$)	Page #
ATSI	s3129.1	23-005	6	1.3	page 223
	s3130.1	23-006	9	0.8	page 223
	s3132.1	23-007	25	0	page 223
	s3106.1	23-022	200	0	page 222
	s3361.1	23-44	220	10.3	page 227
	s3453.1	24-23	21	0.6	page 233
	s3454.1	24-28	30	0	page 233
	s3456.1	24-30	17	1.4	page 233
	s3500.1	24-36	5	0.2	page 234
	s3499.1	24-41	11	0.7	page 234
	s3521.1	24-20	12	1.6	page 234
	s3522.1	24-42	11	1.2	page 234
	s3523.1	24-43	35	0.15	page 234
	s3524.1-2	24-44	200	26	page 234
	s3525.1	24-45	63	1	page 234
TOTAL COST:				\$1,299.7	
# OF PROJECTS:				37	

Sources: AEP 2024 Supp RTEP summary doc and 2024 RTEP; ATSI 2024 Supplemental RTEP summary and 2024 RTEP. Note: s3442.16-26 and s3442.27-30 both serve the same Need # 23-OH63 and are thus not reflected as separate projects in the project total number.

Table 6. Pennsylvania Data Center–Caused Transmission Costs Approved in 2024

Utility	Project #	Need #	MW	Cost (Millions \$)	Page #
PPL	s3082.1-2	23-0005	45	18.2	page 249
	s3089.1	23-0012	10	1	page 250
	s3391.1	24-0002	18	1.4	page 253
	s3311.1-6	24-0001	1275	244	page 252
	s3528.4	24-003	1440	6	page 253
	s3528.1-3, 4-11			190.5	page 254
Penn Electric	s3291.1	PN-23-007	22	1.5	page 251
	s3292.1	23-12	20	1.6	page 251
	s3293.1	23-17	33	8	page 251
	s3395.1	23-03	22	3.5	page 253
	s3436.1	24-20	31	1.6	page 253
Duquesne Light	s3356.1	DLC-2023-002	20	0* (funded by customer)	page 252
AP–First Energy	s3481.1	APS-2024-035	9	1.75	page 254
	s3125.1	2023-008	100	5.4	page 250
Met-Ed	s3017	ME-2023-005	12	4.9	page 249
	s3434.1	2024-010	13	0.7	page 253
	s3435.1	2024-011	22	1.7	page 253
TOTAL COST:				\$491.8	
# OF PROJECTS:				16	

Sources: PPL 2024 Supplemental Plan and 2024 RTEP; Penn Elec 2024 Supplemental Plan and 2024 RTEP; Duquesne Light 2024 Supplemental Plan and 2024 RTEP; AP–First Energy 2024 Supplemental Plan and 2024 RTEP; Met-Ed 2024 Supplemental Plan and 2024 RTEP. Note: s3528.1-3, 4-11 services Need #24-003 and is thus not reflected as a separate project in the project total number.

Table 7. Virginia Data Center–Caused Transmission Costs Approved in 2024

Utility	Project #	Need #	MW	Cost (Millions \$)	Page #
Dominion	s3027	22-01	147	24	page 281
	s3028	22-02	158	12.7	page 281
	s3029	22-10	55	1	page 281
	s3018	22-17	73	16	page 280
	s3019	22-19	60	0.75	page 281
	s3020	22-020	141	0.75	page 281
	s3021	22-27	126	30	page 281
	s3022	22-28	77	140	page 281
	s3023	22-29	37	20	page 281
	s3044	22-34	140	60	page 282
	s3024	22-35	124	42	page 281
	s3025	22-36	124	15.4	page 281
	s3026	22-37	90	19.8	page 281
	s3030.1-2	22-38	146	43.2	page 281
	s3031	22-39	283	23.7	page 281
	s3032	22-40	292	0.5	page 281
	s3033	22-41	185	24	page 282
	s3034	22-44	288	1.5	page 282
	s3035.1-2	22-45	150	45	page 282
	s3036	22-46	50	16	page 282
	s3037	22-47	95	279	page 282
	s3047.1	22-47		23	page 283
	s3047.2	22-46		269	page 283
	s3040	22-41		43.5	page 282
	s3056	22-03	160	20	page 283

(CONTINUED) Table 7. Virginia Data Center–Caused Transmission Costs Approved in 2024

Utility	Project #	Need #	MW	Cost (Millions \$)	Page #
Dominion	s3513.1	22-31	18	4	page 288
	s3061	22-32	103	120	page 284
	s3048	22-42	136	20	page 283
	s3049	22-43	209	56	page 283
	s3039	22-48	49	6.3	page 282
	s3074	22-54	188	47	page 284
	s3075	22-55	111	26	page 284
	s3080	22-56	110	20	page 285
	s3076	23-01	100	28	page 284
	s3053	23-05	141	1	page 283
	s3062	23-07	90	34.5	page 284
	s3064	23-08	260	15.3	page 284
	s3068.1	23-09	264	36.5	page 284
	23068.2	22-09		45.9	
	s3069	23-10	258	15.3	page 284
	s3070	23-11	70	15.4	page 284
	s3071	23-12	153	27.8	page 284
	s3065	23-14	270	3	page 284
	s3072	23-17	220	28	page 284
	s3066	23-18	110	21.3	page 284
	s3077	23-19	147	1	page 284
	s3079	23-20	112	30.2	page 285
	s3067	23-27	80	25	page 284
	s3220.1	23-37	64	0.76	page 286
	s3218.1	23-39	185	20	page 286

(CONTINUED) Table 7. Virginia Data Center–Caused Transmission Costs Approved in 2024

Utility	Project #	Need #	MW	Cost (Millions \$)	Page #
Dominion	s3081	23-41	48	15	page 285
	s3219.1	23-45	57	1.5	page 286
	s3221.1	23-47	32	0.5	page 287
	s3509.1	19-21	300	15	page 287
	s3504.1	22-59	112	23	page 287
	s3502.1	23-33	192	12.3	page 287
	s3501.1	23-42	154	10.3	page 287
	s3511.1	23-52	80	30	page 288
	s3508.1	24-01	288	12	page 287
	s3505.1	24-02	281	1.4	page 287
	s3507.1	24-21	98	0.35	page 287
	s3510.1	24-22	100	30	page 287
AP–First Energy	s3126.1	APS 2023-013	35	1.6	page 285
	s3127.1	2023-14	35	16	page 285
TOTAL COST:				\$1,988	
# OF PROJECTS:				60	

Sources: Dominion 2024 Local Plan Submission and 2024 RTEP; AP–First Energy 2024 Local Plan Submission and 2024 RTEP. Note: s3047.1 and s3047.2 service both Need # 22-46 and 22-47 and are thus not reflected in the project total number. s3040 services Need #22-41 and is thus not reflected in the project total number. Also s3068.2 services Need #22-09 and is thus not included in project total number.

Table 8. West Virginia Data Center–Caused Transmission Costs Approved in 2024

Utility	Project #	Need #	MW	Cost (Millions \$)	Page #
AEP	s3143.1-7	AEP-2022-AP014	450	215.8	page 301
	s3137.1-3	23-AP021	80	0	page 300
TOTAL COST:				\$215.8	
# OF PROJECTS:				2	

Sources : AEP 2024 Supplemental RTEP Summary and 2024 RTEP.