

Summary of ISO Capital Expenditure Forecast - Non-Incentive Projects
(\$000)

PIN	Project Title	C-WBS	Order #	High/ Low	OD	Project Total (ISO & non-ISO)				ISO Portion			
				Voltage		Prior	2021	2022	Total	Prior	2021	2022	Total

Non-Incentive Transmission Projects include Direct Installation and Removal Expenditures, but exclude any C-WBS or Order # with 0% ISO.

Other Transmission

07861	Colorado River (NU): Terminate the Centipede-Coloardo River 220kV T/L at Colorado River Sub	CET-ET-TP-RN-786100	901713069	High	Jul-22	29	1,000	25	1,054	29	1,000	25	1,054
Total Other Transmission						29	1,000	25	1,054	29	1,000	25	1,054
08088	Eldorado Substation (NU): Install facilities for a new 500 kV switchrack position to terminate the Eldor	CET-ET-LG-AF-808800	902245555	High	Apr-21	-	75	-	75	-	75	-	75
08088	Harry Allen - Eldorado T/L: Install one span from the SCE dead end rack to the Connecting Last Addit	CET-ET-AF-CF-808800	902245556	High	Aug-20	521	1	-	522	521	1	-	522
08088	Harry Allen - Eldorado 500kV Transmission Line Project					521	76	-	597	521	76	-	597
Total Added Facilities						521	76	-	597	521	76	-	597

TSP Projects

05383	Chino 220/66kV - Add a 4th 280MVA, 220/66kV Transformer Bank and Split the Chino 66kV System	CET-ET-LG-TS-538303	901191112	High	Sep-20	-	35	-	35	-	12	-	12
07767	Johanna Substation: Equip New 220kV position with one 220kV Circuit Breaker and two 220kV Disco	CET-ET-LG-TS-776700	901487156	High	Jul-20	-	297	-	297	-	15	-	15
Total TSP Projects						-	332	-	332	-	27	-	27

Transmission Project Reliability

07547	Eldorado-Mohave 500kV: Remove two existing transmission structures. Install three new transmissio	CET-ET-TP-RL-754701	901107560	High	Apr-20	-	230	230	460	-	230	230	460
07727	Inyokern Substation: Expand existing MEER at Inyokern Substation.	CET-ET-TP-RL-772700	901394462	Low	Jul-21	96	100	-	195	35	37	-	72
07727	Control Substation: Install 12 N60 relays, one satellite clock, and two ethernet switches	CET-ET-TP-RL-772701	901394533	Low	Dec-21	430	328	-	758	370	282	-	652
07727	Total Digital 395 Project: North-of-Kramer Area Telecom Network and RAS Upgrades					526	428	-	953	405	319	-	724
07763	Eldorado-Lugo 500 kV line: CA side - Install 85 miles of new OPGW between CA/NV border and Pisg	CET-ET-TP-RN-776304	901665563	High	Jul-22	6,471	1,000	4,174	11,645	6,471	1,000	4,174	11,645
07763	Eldorado-Lugo 500 kV line: NV Side -Install 2 miles of new OPGW between CA/NV border and Mi52	CET-ET-TP-RN-776305	901665564	High	Jul-22	504	15	60	579	504	15	60	579
07763	Mohave: Install two Relays and two Switches	CET-ET-TP-RN-776302	901484315	High	Jul-21	154	5	100	259	154	5	100	259
07763	Lugo Sub: Install new control cables	CET-ET-TP-RN-776307	902249120	High	Jan-22	22	1	45	68	22	1	45	68
07763	Eldorado: Install equipment to support N-2	CET-ET-TP-RN-776308	902249121	High	Mar-22	43	3	45	91	43	3	45	91
07763	Total Lugo-Victorville 500 kV SPS					7,194	1,024	4,424	12,642	7,194	1,024	4,424	12,642
07120	Chino Sub: equip the No.1A 220kV A-Bank positions with circuit breakers	CET-ET-TP-RL-712000	900713964	High	Dec-21	-	2,020	-	2,020	-	1,313	-	1,313
07884	Tap the remaining Lighthiipe 220kV line to Harborgen substation	CET-ET-TP-RL-788402	901822249	High	Jan-21	683	35	-	718	683	35	-	718
07884	Harbogen-Long Beach 220kV:Rmv 1 mile of line (REMOVAL ONLY)	CET-ET-TP-RL-788400	901822245	High	Jan-21	-	223	-	223	-	223	-	223
07884	Lighthiipe-Long Beach 220kV:Rmv 1 mile of lne (REMOVAL ONLY)	CET-ET-TP-RL-788401	901822246	High	Jan-21	-	930	-	930	-	930	-	930
07884	Long Beach Sub: <u>Remove</u> 220kV switchyard	CET-ET-TP-RL-788403	901822250	High	Jan-21	51	157	-	207	51	157	-	207
07884	Total Cerritos Channel Relocation Project					734	1,345	-	2,079	734	1,345	-	2,079
08019	CONTROL-SILVER PEAK "A" 55kV Install 11 sets of Remote Fault Indicators (RFIs)	CET-ET-TP-RL-801900	TD1269146	Low	May-21	639	75	-	714	639	75	-	714
08019	CONTROL-SILVER PEAK "C" 55kV Install 11 sets of Remote Fault Indicators (RFIs)	CET-ET-TP-RL-801902	TD1269499	Low	Jun-21	206	26	-	232	206	26	-	232
08019	Total Control-Silver Peak "A" Transmission Project					845	101	-	945	845	101	-	945
07115	Johanna: Install double breakers on 3A+4A	CET-ET-TP-RL-711500	902067053	High	Dec-21	2,284	1,958	200	4,442	1,873	1,605	164	3,642
06420	West of Devers 230 kV Trans Line Removals	CET-ET-TP-RN-642018	901460766	High	Jul-22	-	4,840	-	4,840	-	4,840	-	4,840
07227	Inyo Substation: Replace Inyo phase shifter and new hybrid circuit breaker.Inst	CET-ET-TP-RN-722701	902379073	Low	Jul-21	2,887	5,426	3,927	12,240	2,887	5,426	3,927	12,240
07227	Control: Install two N60 relays	CET-ET-TP-RN-722700	902448105	Low	Nov-21	21	345	4	370	21	345	4	370
07227	Total Casa Diablo IV Project Interconnection					2,908	5,771	3,931	12,610	2,908	5,771	3,931	12,610
08107	Kramer Substation (RNU): a. Engineer and construct one 230 kV line position, which includes the fol	CET-ET-TP-RN-810701	902342409	High	Jul-22	56	2,207	1,450	3,713	56	2,207	1,450	3,713
08091	Big Creek 4: Install two new N60 relays	CET-ET-TP-RL-809100	902260821	High	May-21	279	113	-	392	279	113	-	392
07546	(Removal/Expense) Eldorado Sub: Upgrade Terminal Equipment and Series Capacitors on Eldorado	CET-ET-TP-RL-754600	902287734	High	Jun-21	-	500	68	568	-	500	68	568
07546	(Removal/Expense) Lugo Sub: Upgrade Terminal Equipment and Series Capacitors on Eldorado-Lu	CET-ET-TP-RL-754601	902287735	High	Jun-21	-	1,003	-	1,003	-	1,003	-	1,003
07546	(Removal/Expense) Mohave Sub: Install Series Capes	CET-ET-TP-RL-754604	902287736	High	Jun-21	-	572	52	624	-	572	52	624
07546	(Removal/Expense) E-M: Install OPGW, Splice Fiber, and clear Infractions on the Eldorado-Mohave	CET-ET-TP-RL-754607	902287737	High	Jul-22	-	450	429	879	-	450	429	879
07546	(Removal/Expense) L-M (CA): Install OPGW, Splice Fiber, and clear Infractions on the Lugo-Mohave	CET-ET-TP-RL-754608	902287738	High	Jul-22	-	2,687	59	2,746	-	2,687	59	2,746
07546	(Removal/Expense) L-M (NV): Install OPGW, Splice Fiber, and clear Infractions on the Lugo-Mohave	CET-ET-TP-RL-754609	902288039	High	Jul-22	-	151	15	166	-	151	15	166
07546	(Removal/Expense) Eldorado-Lugo: Correct GO-95 Infractions on the Eldorado-Lugo 500 kV T/L	CET-ET-TP-RL-754610	902288040	High	Jul-22	-	70	29	99	-	70	29	99
07546	Total Eldorado-Lugo-Mohave (ELM) Series Cap Upgrades Project					-	5,433	652	6,085	-	5,433	652	6,085
07555	Mesa: <u>Remove</u> 230/66/16kV switchracks & equipment	CET-ET-TP-RL-755505	901192482	High	Apr-21	-	2,322	-	2,322	-	743	-	743
07555	Mira Loma-Vincent 500kV: <u>Remove</u> three structures and 4200 ckt ft of conductor	CET-ET-TP-RL-755507	901192484	High	Jun-20	-	21	-	21	-	21	-	21
07555	Lighthiipe-Mesa: <u>Remove</u> 8 structures and conductor	CET-ET-TP-RL-755546	902124391	High	Dec-19	-	106	-	106	-	106	-	106
07555	Mesa-Rio Hondo 220kV: <u>Remove</u> 4 structures and 2700 ckt ft of conductor.	CET-ET-TP-RL-755548	902124393	High	Jan-21	-	17	-	17	-	17	-	17
07555	Mesa-Vincent #1 220kV: <u>Remove</u> 3 structures, 2 shoofly ESPs, 800 ckt ft of shoofly conductor, and 2	CET-ET-TP-RL-755552	902124397	High	Dec-19	-	10	-	10	-	10	-	10
07555	Center-Mesa 220kV: <u>Remove</u> 4 structures and 2800 ckt ft of conductor	CET-ET-TP-RL-755535	902132962	High	Jan-21	-	253	-	253	-	253	-	253
07555	Goodrich-Laguna Bell 220kV: <u>Remove</u> 2 structures, remove 1500 ckt ft of shoofly conductor, and rem	CET-ET-TP-RL-755538	902132963	High	Jun-20	-	6	-	6	-	6	-	6
07555	Mesa-Walnut 220kV: <u>Remove</u> 2800 ckt ft of conductor	CET-ET-TP-RL-755556	902124581	High	Jan-21	-	21	-	21	-	21	-	21
07555	Total Mesa Substation Project					-	2,756	-	2,756	-	1,177	-	1,177

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						Prior	2021	2022	Total	Prior	2021	2022	Total
07558	Magunden-Springville 230 kV No.1: Remove 14 existing 220kV lattice structures; Install nine new H-F	CET-ET-TP-RL-755800	901192344	High	Jul-22	766	1,500	4,832	7,098	766	1,500	4,832	7,098
07558	Magunden-Springville 230 kV No.2: Remove 14 existing 220kV lattice structures; Install nine new H-F	CET-ET-TP-RL-755801	901192345	High	Jul-22	805	1,500	4,834	7,139	805	1,500	4,834	7,139
07558	Magunden-Springville No.1 & No.2 Tower Replacement ("Lake Success Towers in Water")					1,571	3,000	9,666	14,237	1,571	3,000	9,666	14,237
08077	Pisgah 230 kV (Option 2):A. 230 kV Switchrack=8 BCT UpgradesB. Relays=8 Racks=4 L90=4 C60	CET-ET-TP-RL-807701	902739837	High	Mar-22	285	534	1,358	2,177	285	534	1,358	2,177
08077	Lugo 230 kV Relay Upgrade	CET-ET-TP-RL-807701	902739830	High	Sep-21	508	80	409	996	508	80	409	996
08077	Eldorado 230 kV (Option 2): Cima-Pisgah #1 220kV (Pos 9N) and Cima-Pisgah #2 220kV (Pos 10N)	CET-ET-TP-RL-807702	902739829	High	Jan-22	165	40	441	646	165	40	441	646
08077	Inyokern 115 kV:Relays=2 Rack=1 L90=1 SEL311C=4 C60=	CET-ET-TP-RL-807701	902739835	Low	Jul-22	114	160	150	423	114	160	150	423
08077	Big Creek 3 230 kV:A. 230 kV Switchrack=17 BCT UpgradesB. Relays=4 Racks=4 SEL587Z=	CET-ET-TP-RL-807701	902459930	High	Jun-21	971	1,466	-	2,436	971	1,466	-	2,436
08077	Magunden230 kV:A. 230 kV Switchrack=15 BCT Upgrades=Conduit + pull-boxesB. Relays=4 Racks=	CET-ET-TP-RL-807701	902459931	High	Dec-20	-	(9)	-	(9)	-	(9)	-	(9)
08077	Pastoria 230 kV:A. 230 kV Switchrack=6 BCT Upgrades=Conduit + pull-boxes=Remove conduit + pu	CET-ET-TP-RL-807701	902459932	High	Apr-21	789	469	-	1,258	789	469	-	1,258
08077	Control 115 kV: 1)115kV Switchrack: Replace six (6) 115KV CB?s 3, 5, 11, 13, 15 & 17 W/ six (6) n	CET-ET-TP-RL-807706	902739832	High	Jun-22	992	1,935	2,550	5,477	992	1,935	2,550	5,477
08077	Downs: Logic diagrams and settings will be modified for the 115kV line D60 relays to upd PTB scherr	CET-ET-TP-RL-807708	902739834	High	Dec-20	-	1	-	1	-	-	-	-
08077	Kramer 115 kV: A. Relays ? ISO: ? 4?Racks LBFB ? 8? C60 ? 2?Racks Lines ? 2?L90 ? 2?SEL311C	CET-ET-TP-RL-807710	902739836	High	Feb-22	380	703	800	1,883	190	352	400	941
08077	Searles 115 kV: 115kV Switchrack POS No. 1 a. Use the existing BCT on 115kV circuit breaker no. 1	CET-ET-TP-RL-807712	902739838	High	Nov-20	-	3	-	3	-	-	-	-
08077	Tortilla 115 kV: A. 115 Switchrack: 2?BCT upgrades 3?PTs 4?BCT upgrades B. 66kV Switchrack	CET-ET-TP-RL-807713	902739979	High	Jun-22	191	420	900	1,511	191	420	900	1,511
08077	Coolwater 220/115 kV: A. 230 kV Switchrack -1 L90 -1 SLE311C -2 Racks (Bus) -2 SEL587 (Bus)	CET-ET-TP-RL-807707	902739833	High	Feb-22	14	1,476	2,875	4,365	14	1,476	2,875	4,365
08077	Casa Diablo 115 kV: 115kV Switchrack 115kV Line Pos. 3, CB 503: -Use existing spare BCT for new	CET-ET-TP-RL-807705	902739831	High	Sep-21	192	297	-	490	-	-	-	-
08077	Total Annual Transmission Reliability Assessment 2016 - Protection Upgrades (ATRA)					4,600	7,575	9,483	21,658	4,218	6,923	9,083	20,223
08078	Antelope (RNU): Install two N60 relays	CET-ET-TP-RN-807800	902220556	High	Dec-21	30	22	20	72	30	22	20	72
08078	Antelope Sub (RNU) - Power System Control. i. Expand existing RTU at SCE Antelope Substation an	CET-ET-TP-RN-807801	902220557	High	Dec-21	10	43	24	76	10	43	24	76
08078	Antelope 2 Solar Project Reliability Network Upgrades at Antelope Substation					40	64	44	148	40	64	44	148
08081	Colorado River Sub (RNU): 1. Install one 220kV line position which includes the following equipment:	CET-ET-TP-RN-808100	902286854	High	Jun-21	2,061	120	-	2,180	2,061	120	-	2,180
08081	Colorado River Sub (RNU) - Install two GE N60 logic processing relays or equivalent successor to se	CET-ET-TP-RN-808101	902286855	High	Jun-21	257	18	-	275	257	18	-	275
08081	Arlington Solar Project Reliability Network Upgrades at Colorado River Substation					2,318	138	-	2,456	2,318	138	-	2,456
08104	Moopark 230 kV Switchrack: Relocate the Ormond Beach No. 3 & 4 lines into positions 10N & 11N. I	CET-ET-TP-RL-810400	902315805	High	May-21	6,764	660	-	7,424	1,556	152	-	1,708
08104	Pardee 230 kV: Equip vacant Position 16E with two CBs rated at 4000A/63kA and four disconnects r	CET-ET-TP-RL-810401	902315808	High	Jun-21	6,016	1,730	-	7,746	6,016	1,730	-	7,746
08104	New Moopark-Pardee #4 230 kV line: String roughly 25.5 mile section on vacant side of existing str	CET-ET-TP-RL-810402	902315828	High	Apr-22	30,148	8,806	2,439	41,393	30,148	8,806	2,439	41,393
08104	Moopark-Santa Clara #2: String 2B-1590 one mile section on vacant side of existing structures to rel	CET-ET-TP-RL-810403	902315960	High	May-20	-	0	-	0	-	0	-	0
08104	Moopark-Pardee No. 1: Relocate Moopark - Pardee No. 1 230 kV transmission line to position 16E; C	CET-ET-TP-RL-810404	902578087	High	Jun-22	963	998	-	1,960	963	998	-	1,960
08104	Santa Clara: Replace line relays for Moopark No.1 230 kV line with one (1) G.E L90 relay and one (1	CET-ET-TP-RL-810405	902578088	High	Mar-20	-	3	-	3	-	3	-	3
08104	Total Moopark-Pardee 230 kV No. 4 Circuit Project					43,890	12,197	2,439	58,527	38,682	11,689	2,439	52,811
07073	Red Bluff RNU: Install 220kV line position	CET-ET-TP-RN-707300	902494149	High	Aug-21	4	2,000	1,000	3,004	4	2,000	1,000	3,004
08098	Calcite Substation (RNU)- Engineer and construct one (1) 230 kV line position, which will include the	CET-ET-TP-RN-809800	902310803	High	Oct-22	1	0	-	1	1	0	-	1
08100	Whirlwind Substation (RNU): a. Utilize the shared 230 kV position at Whirlwind Sub	CET-ET-TP-RN-810000	902326568	High	Jun-22	-	194	500	694	-	194	500	694
08195	Devers Substation (RNU): Engineer and construct one (1) 230 kV line position which includes the follo	CET-ET-TP-RN-819500	902748920	High	May-22	1	1,456	1,120	2,577	1	1,456	1,120	2,577
08199	Whirlwind Substation (RNU)Tehachapi Centralized RAS ("Tehachapi CRAS") Install two (2) GE N60 I	CET-ET-TP-RL-819900	902663177	High	Feb-22	27	240	903	1,170	27	240	903	1,170
08199	Windhub Substation (RNU)a. Install one (1) 230 kV transmission line position which includes the follo	CET-ET-TP-RL-819901	902663178	High	Jun-21	55	105	160	319	55	105	160	319
08199	Lone Butte Substation for Sagebrush Solar 3 project Reliability Network Upgrades					82	344	1,062	1,489	82	344	1,062	1,489
08214	Power System Control (RNU) - Expand CRAS RTUs at Red Bluff Substation to include points for stat	CET-ET-TP-RN-821400	902631060	High	Feb-22	-	39	66	105	-	39	66	105
08261	Devers Substation: Revising logic diagrams and reprogramming relay settings for total four N60 relays	CET-ET-TP-RL-826100	902852557	High	Oct-21	0	107	-	107	0	107	-	107
08261	Mirage Substation: Revising logic diagrams and reprogramming relay settings for total four N60 relays	CET-ET-TP-RL-826101	902852558	High	Sep-21	0	106	-	106	0	106	-	106
08261	Total Path 42 (Coachella Valley-Mirage and Mirage-Ramon) RAS					1	213	-	213	1	213	-	213
08091	Springville Sub: Reconnect Big Creek 4 currents and pballets to relays 37-1A and 37-1B	CET-ET-TP-RL-809101	902393260	High	May-21	199	48	-	247	199	48	-	247
08163	Red Bluff 2nd 500/230 kV AA Bank (Deliverability Network Upgrade)	CET-ET-TP-RL-816300	902494090	High	Nov-21	4,409	10,000	80	14,489	4,409	10,000	80	14,489
08205	Whirlwind Substation: Install two GE N60 logic processing relays or equivalent successor to send trip	CET-ET-TP-RN-820501	902642390	High	Oct-21	7	310	111	427	7	310	111	427
08205	Whirlwind Substation (NU): Install two GE N60 logic processing relays or equivalent successor to ser	CET-ET-TP-RN-820502	902642391	High	Dec-21	37	279	111	427	37	279	111	427
08205	Bigbeau Project Reliability Network Upgrades					44	588	221	853	44	588	221	853
08216	Colorado River Substation (RNU): a.Install one 230 kV line position, which includes the following equ	CET-ET-TP-RN-821601	902660304	High	Dec-21	372	118	-	490	372	118	-	490
08220	Power Systems Control (RNU):Add points/RAS Programming	CET-ET-TP-RN-822008	902699367	High	Jul-21	1	47	-	48	1	47	-	48
08220	Valley Sub (RNU):Add relays/points	CET-ET-TP-RN-822001	902699208	High	May-21	144	8	-	152	144	8	-	152
08220	Serrano Sub (RNU): Install relays/add points	CET-ET-TP-RN-822002	902699209	High	Sep-21	155	8	-	163	155	8	-	163
08220	Red Bluff Sub:Install line/relays/add points	CET-ET-TP-RN-822004	902699211	High	Sep-21	1,328	350	-	1,678	1,328	350	-	1,678
08220	Etiwanda Sub:Install relays/Add points	CET-ET-TP-RN-822006	902699213	High	Sep-21	162	8	-	170	162	8	-	170
08220	Athos Power Plant Project Reliability Network Upgrades					1,788	421	-	2,209	1,788	421	-	2,209
08227	Victor (RNU) - Install two GE N60 relays	CET-ET-TP-RN-822700	902732437	High	May-21	235	402	-	637	235	402	-	637
08201	Whirlwind Substation (RNU): Whirlwind AA-Bank RAS: Utilize two GE N60 logic processing relays o	CET-ET-TP-RN-820100	902668204	High	Jun-22	10	188	500	698	10	188	500	698
08241	Coolwater 220kV Substation (RNU)-Add Project to North of Lugo Centralized RAS – Install two N60 F	CET-ET-TP-RN-824100	903103547	High	Dec-22	-	107	41	148	-	107	41	148
08285	Whirlwind Substation.a. Install one (1) 230 kV line position which includes the followingequipment:CT	CET-ET-TP-RN-828500	903099017	High	Jun-22	-	321	1,286	1,607	-	321	1,286	1,607
08204	Whirlwind AA-Bank RAS. i. Whirlwind Substation: Utilize two GE N60 logic processing relays or equi	CET-ET-TP-RN-820400	902650549	High	Dec-21	0	100	243	343	0	100	243	343
08204	Tehachapi C-RAS. i. Whirlwind Substation. Install two GE N60 logic processing relays or equivalent s	CET-ET-TP-RN-820401	902722024	High	Dec-21	9	151	185	345	9	151	185	345
08204	Whirlwind Sub: Modify the programs to add the Large Generating Facility to the Whirlwind AA-Bank F	CET-ET-TP-RN-820402	902722029	High	Dec-21	-	10	9	19	-	10	9	19
08204	Rabbitbrush Solar Project Reliability Network Upgrades					9	261	437	707	9	261	437	707

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08223	Whirlwind AA Bank Centralized RAS. i. Whirlwind Substation. Utilize two GE N60 logic processing relays or equivalent	CET-ET-TP-RN-822300	902705074	High	Jul-21	4	50	276	329	4	50	276	329
08223	Tehachapi CRAS: i. Whirlwind Substation. Install two GE N60 logic processing relays or equivalent	CET-ET-TP-RN-822301	902705075	High	Jul-21	5	75	250	329	5	75	250	329
08223	Willy Interconnection at Whirlwind Substation					8	125	525	659	8	125	525	659
08238	Vista Substation: West or Colorado River CRAS Inland/Devers Extension –Monitoring Infrastructure.	CET-ET-TP-RN-823800	902760263	High	May-22	1	45	-	46	1	45	-	46
08238	Valley Substation: West or Colorado River CRAS Inland/Devers Extension –Monitoring Infrastructure	CET-ET-TP-RN-823801	902760264	High	May-22	1	45	2	48	1	45	2	48
08238	Serrano Substation: West or Colorado River CRAS Inland/Devers Extension –Monitoring Infrastructure	CET-ET-TP-RN-823802	902760265	High	Dec-21	-	45	2	47	-	45	2	47
08238	San Bernardino Substation: West or Colorado River CRAS Inland/Devers Extension –Monitoring Infrastructure	CET-ET-TP-RN-823803	902760266	High	Jan-22	2	45	2	49	2	45	2	49
08238	San Bernardino Substation: West or Colorado River CRAS – Devers Extension – generation addition.	CET-ET-TP-RN-823804	902760267	High	Jan-22	99	45	-	144	99	45	-	144
08238	Mira Loma Substation: West or Colorado River CRAS Inland/Devers Extension –Monitoring Infrastructure	CET-ET-TP-RN-823805	902760268	High	Dec-21	1	45	2	48	1	45	2	48
08238	Etiwanda Substation: West or Colorado River CRAS Inland/Devers Extension –Monitoring Infrastructure	CET-ET-TP-RN-823806	902760269	High	Dec-21	0	45	2	47	0	45	2	47
08238	Total Mountainview Generating Station Pmax Increase Project					105	315	10	430	105	315	10	430
08246	Victor Substation- North of Lugo CRAS –Monitoring infrastructure i. Install four (4) GE N60 logic processing relays or equivalent	CET-ET-TP-RN-824600	902768480	High	Feb-22	1	155	216	372	1	155	216	372
08246	Lugo Substation- North of Lugo CRAS –Monitoring infrastructure i. Install four (4) GE N60 logic processing relays or equivalent	CET-ET-TP-RN-824601	902768481	High	Feb-22	1	155	216	372	1	155	216	372
08246	Kramer Substation- North of Lugo CRAS –Monitoring infrastructure Install two (2) GE N60 logic processing relays or equivalent	CET-ET-TP-RN-824602	902768482	High	Feb-22	1	155	217	372	1	155	217	372
08246	Roadway Substation 115/33 North of Lugo CRAS – generator addition. (a) Roadway Substation. Install two (2) GE N60 logic processing relays or equivalent	CET-ET-TP-RN-824603	902768483	High	Apr-22	1	156	226	383	1	156	226	383
08246	Roadway Substation– generator addition. Mojave Desert RAS. Install two (2) GE N60 logic processing relays or equivalent	CET-ET-TP-RN-824604	902768484	High	Jan-22	66	111	98	274	66	111	98	274
08246	Baldy Mesa Project Reliability Network Upgrades					69	732	973	1,774	69	732	973	1,774
8298	Windhub Substation. i. Install one (1) 230 kV line position which includes the following equipment. 1. Windhub Substation. Install two (2) GE N60 logic processing relays or equivalent	CET-ET-TP-RN-829800	903123443	High	Jul-22	5	115	51	171	5	115	51	171
8298	Tehachapi centralized RAS – generator addition i. Windhub Substation. Install two (2) GE N60 logic processing relays or equivalent	CET-ET-TP-RN-829803	903123440	High	Jul-22	1	184	79	264	1	184	79	264
8298	Windhub AA Bank centralized RAS – monitoring infrastructure i. Windhub Substation. 1. Install eight (8) GE N60 logic processing relays or equivalent	CET-ET-TP-RN-829801	903123441	High	Jun-22	1	173	289	464	1	173	289	464
8298	Windhub AA Bank centralized RAS – generation addition i. Windhub Substation. Install two (2) GE N60 logic processing relays or equivalent	CET-ET-TP-RN-829802	903123442	High	Jun-22	-	648	1,135	1,783	-	648	1,135	1,783
8298	Bellevue Solar Farm Reliability Network Upgrades					7	1,120	1,554	2,681	7	1,120	1,554	2,681
Total Transmission Project Reliability						74,589	70,193	41,894	186,676	68,467	66,285	41,458	176,211
Infrastructure Replacement													
03138	Sylmar Converter Station: Misc Cap	CET-OT-OT-ME-313800		High	Blanket Specifics	-	7,991	3,938	11,929	-	7,991	3,938	11,929
03138	Sylmar/LADWP AC/DC Filter Replacement	CET-OT-OT-ME-313803	900713761	High	Jun-20	-	5,298	-	5,298	-	5,298	-	5,298
04651	Palo Verde Switchrack: Misc Cap	CET-OT-OT-ME-465100		High	Blanket Specifics	-	1,162	794	1,956	-	1,162	794	1,956
Total LADWP/Palo Verde - WORK PERFORMED BY OPERATING AGENT						-	14,451	4,732	19,183	-	14,451	4,732	19,183
04211	Replace Bulk Power Circuit Breakers (220kV and Above)	CET-ET-IR-CB-421100		High	Blanket Specifics	-	2,865	6,905	9,770	-	2,865	6,905	9,770
04343	Non-Bulk Relay Replacement Program ("SRPP")	CET-ET-IR-RP-434301		Low	Blanket Specifics	-	494	1,158	1,652	-	494	1,158	1,652
04756	Substation Miscellaneous Equipment Additions & Betterment	CET-ET-IR-ME-475600		High	Blanket Specifics	-	12,114	14,857	26,971	-	12,114	14,857	26,971
04837	Replace SAS Infrastructure (FERC)	CET-ET-IR-RP-483701		High	Blanket Specifics	-	1,927	1,056	2,983	-	1,927	1,056	2,983
05089	Bulk Power 500kV & 220kV Line Relay Replacement	CET-ET-IR-RP-508900		High	Blanket Specifics	-	7,150	7,358	14,508	-	7,150	7,358	14,508
05210	Substation Transformer Bank Replacement Program (AA-Bank & A-Bank)	CET-ET-IR-TB-521001		High	Blanket Specifics	-	50	2,633	2,683	-	50	2,633	2,683
06197	On-line Dissolved Gas Analysis of Bulk Power Transformer Banks	CET-ET-IR-ME-619700		High	Blanket Specifics	-	2,700	1,286	3,987	-	2,700	1,286	3,987
07713	Substation Switchrack Rebuilds (FERC)	CET-ET-IR-RB-771301		High	Blanket Specifics	-	29,000	25,000	54,000	-	6,380	5,500	11,880
07716	Substation Batteries & Chargers (FERC)	CET-ET-IR-ME-771601		High	Blanket Specifics	-	472	851	1,323	-	472	851	1,323
07957	Devers: Substation Maintenance and Test Building Improvements program	COS-00-RE-AD-SR0004	801432305	High	Dec-21	3,250	2,210	-	5,460	2,661	1,809	-	4,470
07959	Rector: Substation Maintenance and Test Building Improvements program	COS-00-RE-AD-SR0006	801432582	High	Jul-20	-	52	-	52	-	30	-	30
Total Substation Maintenance and Test Building Improvements Program						3,250	2,262	-	5,512	2,661	1,839	-	4,500
07637	Substation Facility Capital Maintenance	COS-00-RE-MA-NE7637		High	Blanket Specifics	-	16,533	16,864	33,397	-	5,787	5,902	11,689
07392	Seismic Program - Trans Subs (FERC)	COS-00-SP-TD-000000		High	Blanket Specifics	-	14,205	17,200	31,405	-	9,091	11,008	20,099
07392	Seismic Program - Trans Lines	COS-00-SP-TD-000002		High	Blanket Specifics	-	3,222	4,000	7,222	-	3,222	4,000	7,222
07392	Seismic Assessment and Mitigation Program for Transmission Assets					-	17,427	21,200	38,627	-	12,313	15,008	27,321
Physical Security Enhancement Programs:													
07949	Protection of Grid Infrastructure Assets (formerly, Physical Security Systems - Electric Facilities)	COS-00-CS-CS-745400		High	Blanket Specifics	-	13,244	16,093	29,337	-	7,661	9,310	16,971
07573	Substation Fence/Gate (Cu Theft) (aka, Security Fence and Lights Upgrade) (FERC)	CET-ET-IR-ME-757301		High	Blanket Specifics	-	2,922	4,004	6,927	-	2,922	4,004	6,927
07820	NERC CIP-14 Physical Security Enhancements	COS-00-CS-CS-782000		High	Blanket Specifics	-	680	-	680	-	666	-	666
07820	500/230 kV (ES-5069): NERC CIP-14 Physical Security Enhancements	CET-ET-IR-ME-782001	901656354	High	Dec-18	-	11	-	11	-	8	-	8
07820	220/66 kV (ES-5050): NERC CIP-14 Physical Security Enhancements	CET-ET-IR-ME-782002	901656355	High	Feb-20	-	165	-	165	-	137	-	137
07820	500/230 kV (ES-5054): NERC CIP-14 Physical Security Enhancements	CET-ET-IR-ME-782005	901656358	High	May-20	-	12	-	12	-	12	-	12
07820	500/230 kV (ES-5090): NERC CIP-14 Physical Security Enhancements	CET-ET-IR-ME-782008	901657121	High	May-20	4,316	30	-	4,347	4,316	30	-	4,347
07820	500/230 kV (ES-5061): NERC CIP-14 Physical Security Enhancements	CET-ET-IR-ME-782009	902072001	High	Jun-18	4,072	764	-	4,837	4,072	764	-	4,837
07820	Substation Physical Security Enhancements Project					8,388	1,662	-	10,051	8,388	1,618	-	10,006
08042	500/230 kV (ES-5067): Physical Security Tier 2	CET-ET-IR-ME-804200	902210275	High	Feb-22	254	270	4,291	4,815	208	221	3,519	3,948
08042	500/230 kV (ES-5047): Physical Security Tier 2	CET-ET-IR-ME-804202	902210277	High	Sep-21	8	270	3,408	3,686	8	270	3,408	3,686
08042	500/230 kV (ES-8060): Physical Security Tier 2	CET-ET-IR-ME-804203	902210452	High	Dec-22	13	270	3,347	3,630	13	270	3,347	3,630
08042	500/230 kV (ES-5080): Physical Security Tier 2	CET-ET-IR-ME-804207	903158304	High	Apr-21	2,888	403	-	3,291	2,888	403	-	3,291
08042	Physical Security Projects (Tiers 2 & 3)					3,163	1,213	11,046	15,422	3,117	1,164	10,274	14,555
Total Physical Security Enhancement Programs						11,551	19,041	31,143	61,735	11,505	13,366	23,588	48,459
Total Infrastructure Replacement						14,801	126,487	135,044	276,332	14,166	81,909	90,835	186,910

Summary of ISO Capital Expenditure Forecast - Non-Incentive Projects
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				High/ Low		Project Total (ISO & non-ISO)				ISO Portion				
PIN	Project Title	C-WBS	Order #	Voltage	OD	Prior	2021	2022	Total	Prior	2021	2022	Total	
Grid Applications														
08278	El Nido Substation- CRAS Relays and Network Gear	CET-ET-GA-CR-827800	903054557	High	Sep-21	5	599	121	725	5	599	121	725	
08278	El Segundo Substation- CRAS Relays & Network Gear: DISC & remove existing El Nido/El Segundo	CET-ET-GA-CR-827801	903054558	High	Sep-21	5	599	121	725	5	599	121	725	
08278	La Cienega Substation- CRAS Relays & Network Gear: DISC & remove existing El Nido/El Segundo	CET-ET-GA-CR-827802	903054579	High	Sep-21	3	599	121	723	3	599	121	723	
08278	La Fresa Substation-CRAS Relays & Network Gear La Fresa Substation: DISC & remove existing El	CET-ET-GA-CR-827803	903054581	High	Sep-21	3	599	121	723	3	599	121	723	
08278	El Nido/El Segundo CRAS RGOOSE (Routable Generic Object Oriented Substation Environment) Conversion						16	2,396	484	2,896	16	2,396	484	2,896
08284	West of Colorado River CRAS Inland/Devers Extension	CET-ET-GA-CR-999999		High	Blanket Specifics	-	4,776	1,989	6,764	-	4,776	1,989	6,764	
06446	VARIOUS: INSTALL PHASOR MEASUREMENT SYSTEM	CET-ET-GA-EM-644600		High	Blanket Specifics	-	5,445	5,908	11,353	-	3,635	3,943	7,578	
Total Grid Apps						16	12,617	8,380	21,013	16	10,807	6,416	17,239	
PWRD Blankets														
03363	Substation Planned Maintenance Replacements	CET-PD-IR-SP-SUBSNW		High	Blanket Specifics	-	11,000	12,000	23,000	-	585	639	1,224	
03363	Substation Unplanned Maintenance Replacements	CET-PD-BM-SU-SUBSNW		High	Blanket Specifics	-	13,300	13,633	26,933	-	609	624	1,233	
03363	Substation - Storm	CET-PD-ST-SS-SUBSNW		High	Blanket Specifics	-	1,510	1,539	3,049	-	334	340	674	
03363	Substation Maintenance, Breakdown, & Storm					-	25,810	27,171	52,981	-	1,528	1,603	3,131	
03364	Transmission Maintenance Planned - Overhead Conductor	CET-PD-IR-TP-789000		High	Blanket Specifics	-	5,250	4,500	9,750	-	5,250	4,500	9,750	
03364	Transmission Maintenance Planned - Pole Replacement	CET-PD-IR-TP-789100		Low	Blanket Specifics	-	232	1,155	1,387	-	232	1,155	1,387	
03364	Transmission Breakdown Maintenance Unplanned	CET-PD-BM-TU-TRSJAC		High	Blanket Specifics	-	2,759	2,811	5,570	-	656	668	1,324	
03364	Transmission Tower Corrosion Program	CET-PD-IR-TS-TRSJAC		High	Blanket Specifics	-	30,296	30,844	61,140	-	21,208	21,591	42,798	
03364	Transmission Grid-Based Maintenance	CET-PD-IR-TG-TRSJAC		High	Blanket Specifics	-	30,606	31,159	61,765	-	9,071	9,235	18,307	
	Transmission Maintenance & Breakdown Maintenance					-	69,143	70,469	139,612	-	36,417	37,150	73,566	
03364	Transmission Deteriorated Pole Repl & Restoration	CET-PD-IR-TR-TRSJAC		Low	Blanket Specifics	-	147,685	129,845	277,531	-	445	391	837	
03364	Pole Loading Transmission Pole Replacements	CET-PD-IR-PT-TRSJAC		Low	Blanket Specifics	-	10,958	30,541	41,499	-	33	92	125	
04056	Steel Stub Pole Remediation (Trans)	CET-PD-OT-SF-TRORAN		Low	Blanket Specifics	-	154	191	345	-	2	3	5	
	Transmission Poles (Pole Loading & Deteriorated Pole Programs)					-	158,797	160,578	319,375	-	481	486	967	
07298	Transmission Line Rating Remediation (Exempt from Licensing)	CET-PD-OT-PJ-729801		High	Blanket Specifics	-	75,137	74,252	149,388	-	75,137	74,252	149,388	
03362	Critical Infrastructure Spares - FERC Spare Transformer Equipment Program (STEP)/Emergency	CET-PD-CI-CI-CRINSP		High	Blanket Specifics	-	13,343	-	13,343	-	13,343	-	13,343	
03367	Substation - Claim	CET-PD-CL-SC-SUBSNW		High	Blanket Specifics	-	160	163	323	-	4	4	8	
03367	Transmission - Claim	CET-PD-CL-TC-TRSJAC		High	Blanket Specifics	-	1,580	1,610	3,190	-	46	46	92	
03367	Transmission - Storm	CET-PD-ST-TS-TRSJAC		High	Blanket Specifics	-	3,933	4,008	7,941	-	1,042	1,062	2,104	
04057	Big Creek 230 kV System CEMA Creek Fire Resotration	CET-OT-CM-ST-CEMAST	903186172	High	Apr-21	6,651	1,474	-	8,125	6,651	1,474	-	8,125	
04057	CEMA Creek Fire Big Creek-Shaver Lake 9/4/20	CET-OT-CM-ST-CEMAST	903186584	High	Apr-21	240	27	-	267	240	27	-	267	
04057	Erosion Control CEMA Blue Ridge Fire	CET-OT-CM-ST-CEMAST	903254337	High	Jun-21	152	146	-	298	152	146	-	298	
	Transmission Storm & Claims					7,043	7,320	5,781	20,144	7,043	2,739	1,112	10,894	
08224	Transmission Enhanced Overhead Inspections (EOI) Capital Remediations	CET-PD-WM-TP-822400		Low	Blanket Specifics	-	50,758	18,098	68,857	-	609	217	826	
Total PWRD Blankets						-	349,550	338,251	694,844	-	129,645	114,603	251,291	
Total Non-Incentive Transmission Projects						96,999	611,014	541,692	1,249,705	90,242	290,358	253,554	634,155	
Total Forecast Specific Project Expenditures (Closing by December 2022)						96,999	85,400	53,449	235,848	90,242	80,685	52,241	223,168	
Total Forecast Blanket Expenditures (Closing by December 2022)						-	525,614	488,243	1,013,857	-	209,673	201,313	410,986	