

Summary of ISO Capital Expenditure Forecast - Non-Incentive Projects
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TO2023 Draft Annual Update
Attachment 4
WP-Schedule 16-Summary of ISO Cap Exp Forecast Non-Inc Projects
Page 1 of 4

PIN		Project Title	C-WBS	Order #	High/ Low Voltage	OD	Project Total (ISO & non-ISO)				ISO Portion			
							Prior	2022	2023	Total	Prior	2022	2023	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 500/220kV Substation (NU): Terminate the Centipede-Colorado River 220kV 1	CET-ET-TP-RN-786100	901713069	High	Oct-22	75	909	266	1,251	75	909	266	1,251	
Total Other Transmission						75	909	266	1,251	75	909	266	1,251	
08088	Eldorado Substation (NU): Install facilities for a new 500 kV switchrack position to terminate the Eldorado-Harry Allen 500 kV Transmission Line.	CET-ET-LG-AF-808800	902245555	High	Aug-20	-	394	98	492	-	394	98	492	
08088	Harry Allen - Eldorado T/L: Install one span from the SCE dead end rack to the Connecting	CET-ET-AF-CF-808800	902245556	High	Aug-20	-	1	-	1	-	1	-	1	
08088	Harry Allen - Eldorado 500kV Transmission Line Project					-	395	98	493	-	395	98	493	
Total Added Facilities						-	395	98	493	-	395	98	493	
TSP Projects														
07767	Johanna Substation: Equip New 220kV position with one 220kV Circuit Breaker and two 220k	CET-ET-LG-TS-776700	901487156	High	May-20	-	415	-	415	-	21	-	21	
Total TSP Projects						-	415	-	415	-	21	-	21	
Transmission Project Reliability														
07547	Eldorado-Mohave Restoration Activities	CET-ET-TP-RL-754703	903232328	High	Apr-23	157	250	250	657	157	250	250	657	
07727	Inyokern Substation: Expand existing MEER at Inyokern Substation.	CET-ET-TP-RL-772700	901394462	Low	Nov-22	264	27	-	291	98	10	-	108	
07727	Control Substation: Install 12 N60 relays, one satellite clock, and two ethernet switches in the	CET-ET-TP-RL-772701	901394533	Low	Apr-22	910	148	-	1,058	783	127	-	910	
07727	Total Digital 395 Project: North-of-Kramer Area Telecom Network and RAS Upgrades					1,174	175	-	1,349	880	137	-	1,017	
07763	Eldorado-Lugo 500 kV line: CA side - Install 85 miles of new OPGW between CA/NV border a	CET-ET-TP-RN-776304	901665563	High	Jun-23	7,517	3,803	-	11,320	7,517	3,803	-	11,320	
07763	Eldorado-Lugo 500 kV line: NV Side -Install 2 miles of new OPGW between CA/NV border an	CET-ET-TP-RN-776305	901665564	High	Jun-23	658	32	-	690	658	32	-	690	
07763	Mohave 500 kV: Install two (2) N60 relays Install one (1) ethernet switch Install one (1) satellit	CET-ET-TP-RN-776302	901484315	High	Dec-23	244	96	16	356	244	96	16	356	
07763	Lugo Sub: Install new control cables, update station drawings, and modify settings on existing	CET-ET-TP-RN-776307	902249120	High	Aug-22	26	10	-	36	26	10	-	36	
07763	Eldorado: Install equipment to support N-2 monitoring of Eldorado-Lugo 500kV and Lugo-Moh	CET-ET-TP-RN-776308	902249121	High	Jun-23	47	10	-	57	47	10	-	57	
07763	Total Lugo-Victorville 500 kV SPS					8,493	3,951	16	12,460	8,493	3,951	16	12,460	
07120	Chino Sub: equip the No.1A 220kV A-Bank positions with circuit breakers. Equip the Mira Lon	CET-ET-TP-RL-712000	900713964	High	Apr-21	-	(2)	-	(2)	-	(2)	-	(2)	
08019	CONTROL-SILVER PEAK "A" 55KV Install 11 sets of Remote Fault Indicators (RFIs)	CET-ET-TP-RL-801900	TD1269146	Low	Oct-22	666	14	-	681	666	14	-	681	
08019	CONTROL-SILVER PEAK "C" 55KV Install 11 sets of Remote Fault Indicators (RFIs)	CET-ET-TP-RL-801902	TD1269499	Low	Oct-22	214	17	-	231	214	17	-	231	
08019	Total Control-Silver Peak "A" Transmission Project					880	31	-	911	880	31	-	911	
07115	Johanna: Install double breakers on 3A+4A.	CET-ET-TP-RL-711500	902067053	High	Dec-21	-	840	-	840	-	689	-	689	
07227	Inyo Substation: Replace Inyo phase shifter and new hybrid circuit breaker. Install 2 pairs of protection relays.	CET-ET-TP-RN-722701	902379073	High	Oct-21	5,451	416	-	5,867	5,451	416	-	5,867	
07227	Control: Install two N60 relays	CET-ET-TP-RN-722700	902448105	Low	Sep-22	56	314	-	370	56	314	-	370	
07227	Total Casa Diablo IV Project Interconnection					5,507	730	-	6,237	5,507	730	-	6,237	
08107	Kramer Substation (RNU): a. Engineer and construct one 220 kV line position, which	CET-ET-TP-RN-810701	902342409	High	Nov-22	918	1,225	1,155	3,298	918	1,225	1,155	3,298	
08090	Eldorado Substation (NU): install the following equipment on a dedicated 220kV double	CET-ET-LG-AF-809000	902249125	High	May-20	-	22	-	22	-	22	-	22	
08171	Eldorado Substation (Reliability Network Upgrades):a. Install one (1) 220 kV transmission line	CET-ET-TP-RN-817100	902460358	High	Jun-23	91	1,016	2,459	3,566	91	1,016	2,459	3,566	
08207	Colorado River Substation (RNU)(i) Colorado River Substation. 1. Engineer and construct on	CET-ET-TP-RN-820700	902598927	High	Sep-23	20	155	400	575	20	155	400	575	
08214	Red Bluff Substation (RNU):1. Engineer and construct one (1) 220 kV line position which incl	CET-ET-TP-RN-821401	902630576	High	Jun-23	4	808	650	1,461	4	808	650	1,461	
07546	(Removal/Expense) Eldorado Sub: Upgrade Terminal Equipment and Series Capacitors on El	CET-ET-TP-RL-754600	902287734	High	Jun-23	-	10	-	10	-	10	-	10	
07546	(Removal/Expense) Lugo Sub: Upgrade Terminal Equipment and Series Capacitors on Eldor	CET-ET-TP-RL-754601	902287735	High	Jun-23	-	512	-	512	-	512	-	512	
07546	(Removal/Expense) Mohave Sub: Install Series Capes.	CET-ET-TP-RL-754604	902287736	High	Jun-22	-	3	-	3	-	3	-	3	
07546	(Removal/Expense) E-M: Install OPGW, Splice Fiber, and clear Infractions on the Eldorado-M	CET-ET-TP-RL-754607	902287737	High	Apr-21	-	175	-	175	-	175	-	175	
07546	(Removal/Expense) L-M (CA): Install OPGW, Splice Fiber, and clear Infractions on the Lugo-I	CET-ET-TP-RL-754608	902287738	High	Jun-22	-	956	14	970	-	956	14	970	
07546	(Removal/Expense) L-M (NV): Install OPGW, Splice Fiber, and clear Infractions on the Lugo-I	CET-ET-TP-RL-754609	902288039	High	Jun-22	-	345	-	345	-	345	-	345	
07546	(Removal/Expense) Eldorado-Lugo: Correct GO-95 Infractions on the Eldorado-Lugo 500 kV	CET-ET-TP-RL-754610	902288040	High	Jun-23	-	344	-	344	-	344	-	344	
07546	Total Eldorado-Lugo-Mohave (ELM) Series Cap Upgrades Project					-	2,345	14	2,359	-	2,345	14	2,359	
07555	Mesa: Remove 230/66/16kV switchracks & equipment, substructures, and foundations.	CET-ET-TP-RL-755505	901192482	High	Dec-22	-	1,556	-	1,556	-	498	-	498	
07555	Total Mesa Substation Project					-	1,556	-	1,556	-	498	-	498	
07558	Magunden-Springville 230 kV No.1: Remove 14 existing 220kV lattice structures; Install nine i	CET-ET-TP-RL-755800	901192344	High	Feb-22	3,632	2,604	763	6,998	3,632	2,604	763	6,998	
07558	Magunden-Springville 230 kV No.2: Remove 14 existing 220kV lattice structures; Install nine i	CET-ET-TP-RL-755801	901192345	High	Jan-22	4,459	904	763	6,125	4,459	904	763	6,125	
07558	Magunden-Springville No.1 & No.2 Tower Replacement ("Lake Success Towers in Water")					8,090	3,509	1,525	13,124	8,090	3,509	1,525	13,124	
08077	Inyokern 115 kV Relay Upgrades for ATRA	CET-ET-TP-RL-807709	902739835	Low	Jul-22	236	119	-	355	236	119	-	355	
08077	Control 115 kV CBs and MEER for ATRA	CET-ET-TP-RL-807706	902739832	Low	Aug-22	2,723	2,403	-	5,126	2,723	2,403	-	5,126	
08077	Kramer 115 kV Relay Upgrades for ATRA	CET-ET-TP-RL-807710	902739836	Low	Jun-22	665	952	-	1,617	332	476	-	808	
08077	Tortilla 115 kV CBs nand MEER for ATRA	CET-ET-TP-RL-807713	902739979	Low	Jun-22	710	924	-	1,634	710	924	-	1,634	
08077	Antelope 230kV Circuit Breaker Replacement	CET-ET-TP-RL-807701		High	Dec-23	-	284	1,160	1,444	-	284	1,160	1,444	
08077	Vincent 230kV Circuit Breaker Replacement	CET-ET-TP-RL-807701		High	Dec-23	-	1,000	8,281	9,281	-	1,000	8,281	9,281	
08077	Vista 230kV Circuit Breaker Replacement	CET-ET-TP-RL-807701		High	Dec-23	-	289	433	722	-	289	433	722	

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WP-Schedule 16-Summary of ISO Cap Exp Forecast Non-Inc Projects

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Page 2 of 4

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				Voltage		Prior	2022	2023	Total	Prior	2022	2023	Total
08077	Whirlwind 230kV Circuit Breaker Replacement	CET-ET-TP-RL-807701		High	Dec-23	-	120	492	612	-	120	492	612
08077	Laguna Bell - Mesa No. 1 Transmission Line Rating Increase	CET-ET-TP-RL-807701		High	Dec-23	-	1,000	13,590	14,590	-	1,000	13,590	14,590
08077	Laguna Bell Transmission Substation	CET-ET-TP-RL-807701		High	Dec-23	-	544	2,173	2,717	-	544	2,173	2,717
08077	Total Annual Transmission Reliability Assessment 2016 - Protection Upgrades (ATRA)					4,334	7,635	26,129	38,098	4,002	7,159	26,129	37,290
08078	Antelope (RNU): Install two N60 relays.	CET-ET-TP-RN-807800	902220556	High	Dec-22	244	232	-	476	244	232	-	476
08078	Antelope Sub (RNU) - Power System Control. i. Expand existing RTU at SCE Antelope Subst:	CET-ET-TP-RN-807801	902220557	High	Jun-22	13	64	-	77	13	64	-	77
08078	Antelope 2 Solar Project Reliability Network Upgrades at Antelope Substation					257	296	-	552	257	296	-	552
08081	Colorado River Sub (RNU): 1. Install one 220kV line position which includes the following equ	CET-ET-TP-RN-808100	902286854	High	Oct-21	-	60	-	60	-	60	-	60
08081	Colorado River Sub (RNU) - Install two GE N60 logic processing relays or equivalent success	CET-ET-TP-RN-808101	902286855	High	Dec-21	-	20	-	20	-	20	-	20
08081	Arlington Solar Project Reliability Network Upgrades at Colorado River Substation					-	80	-	80	-	80	-	80
08104	Moorpark 230 kV Switchrack: Relocate the Ormond Beach No. 3 & 4 lines into positions 10N	CET-ET-TP-RL-810400	902315805	High	May-22	7,001	376	-	7,376	1,610	86	-	1,697
08104	Pardee 230 kV: Equip vacant Position 16E with two CBs rated at 4000A/63kA and four disco	CET-ET-TP-RL-810401	902315808	High	Apr-21	-	42	-	42	-	42	-	42
08104	New Moorpark-Pardee #4 230 kV line: String roughly 25.5 mile section on vacant side of exis	CET-ET-TP-RL-810402	902315828	High	Jan-22	38,624	1,432	-	40,056	38,624	1,432	-	40,056
08104	Moorpark-Pardee No. 1: Relocate Moorpark - Pardee No. 1 230 kV transmission line to positio	CET-ET-TP-RL-810404	902578087	High	Apr-21	-	3	-	3	-	3	-	3
08104	Total Moorpark-Pardee 230 kV No. 4 Circuit Project					45,624	1,853	-	47,477	40,234	1,564	-	41,798
07073	Red Bluff RNU: Install 220kV line position.	CET-ET-TP-RN-707300	902494149	High	Oct-23	5	312	312	629	5	312	312	629
08098	Calcite Substation (RNU): Engineer and construct one (1) 230 kV line position, which will incl	CET-ET-TP-RN-809800	902310803	High	Sep-23	1	-	-	1	-	-	-	1
08100	Whirlwind Substation (NU): a. Utilize the shared 230 kV position at Whirlwind Substation to te	CET-ET-TP-RN-810000	902326568	High	Jun-23	-	179	350	529	-	179	350	529
08195	Devers Substation (RNU): Engineer and construct one (1) 220 kV line position which	CET-ET-TP-RN-819500	902748920	High	Nov-22	172	1,526	1,000	2,698	172	1,526	1,000	2,698
08199	Windhub Substation (RNU) a. Install one (1) 220 kV transmission line position which includes	CET-ET-TP-RL-819901	902663178	High	Jul-21	-	60	100	160	-	60	100	160
08214	Power System Control (RNU) - Expand CRAS RTUs at Red Bluff Substation to include points	CET-ET-TP-RN-821400	902631060	High	Feb-22	-	23	15	38	-	23	15	38
08091	Springville Sub: Reconnect Big Creek 4 currents and bpanels to relays 37-1A and 37-1B.	CET-ET-TP-RL-809101	902393260	High	May-21	-	2	-	2	-	2	-	2
08163	Red Bluff 2nd 500/230 kV AA Bank (Deliverability Network Upgrade).	CET-ET-TP-RL-816300	902494090	High	Apr-22	18,821	1,150	1,000	20,971	18,821	1,150	1,000	20,971
07059	Red Bluff Substation (NU): Install the following additional equipment for a dedicated 220kV	CET-ET-TP-RN-705900	900346247	High	Feb-21	-	53	-	53	-	53	-	53
08205	Whirlwind Substation: Install two GE N60 logic processing relays or equivalent successor to	CET-ET-TP-RN-820501	902642390	High	Feb-22	7	-	-	7	-	-	-	7
08205	Whirlwind Substation (NU): Install two GE N60 logic processing relays or equivalent success	CET-ET-TP-RN-820502	902642391	High	Jun-22	226	-	-	226	226	-	-	226
08205	Bigbeau Project Reliability Network Upgrades					233	-	-	233	233	-	-	233
08216	Colorado River Substation (RNU): a. Install one 230 kV line position, which includes the follow	CET-ET-TP-RN-821601	902660304	High	May-22	1,231	492	1,000	2,723	1,231	492	1,000	2,723
08220	Valley Sub (RNU): Add relays/points.	CET-ET-TP-RN-822001	902699208	High	Jun-22	729	1,000	-	1,729	729	1,000	-	1,729
08220	Serrano Sub (RNU): Install relays/add points.	CET-ET-TP-RN-822002	902699209	High	Sep-22	574	750	-	1,324	574	750	-	1,324
08220	Red Bluff Sub: Install line/relays/add points.	CET-ET-TP-RN-822004	902699211	High	Oct-21	-	94	950	1,044	-	94	950	1,044
08220	Etiwanda Sub: Install relays/Add points.	CET-ET-TP-RN-822006	902699213	High	Jun-22	749	500	-	1,249	749	500	-	1,249
08220	Athos Power Plant Project Reliability Network Upgrades					2,052	2,344	950	5,346	2,052	2,344	950	5,346
08227	Victor (RNU) - Install two GE N60 relays.	CET-ET-TP-RN-822700	902732437	High	May-21	411	100	300	811	411	100	300	811
08201	Whirlwind Substation (RNU): Whirlwind AA-Bank RAS: Utilize two GE N60 logic processing r	CET-ET-TP-RN-820100	902668204	High	Jun-23	11	612	75	698	11	612	75	698
08241	Coolwater 220kV Substation (RNU)-Add Project to North of Lugo Centralized RAS - Install tw	CET-ET-TP-RN-824100	903103547	High	Sep-22	-	235	-	235	-	235	-	235
08285	Whirlwind Substation.	CET-ET-TP-RN-828500	903099017	High	Jun-23	-	587	2,220	2,807	-	587	2,220	2,807
	a. Install one (1) 230 kV line position which includes the following equipment:												
	i. Two (2) 230 kV circuit breakers and foundations.												
	ii. One (1) 230 kV group operated disconnect switch with grounding attachment.												
	iii. Four (4) sets of 223 kV disconnect switches, steel support structures, and foundations.												
	b. Protection Relays: Two local breaker failure backup relays, General Electric ("GE") C60 or												
08204	Whirlwind AA-Bank RAS. i. Whirlwind Substation: Utilize two GE N60 logic processing relays	CET-ET-TP-RN-820400	902650549	High	May-23	-	343	120	463	-	343	120	463
08204	Tehachapi C-RAS. i. Whirlwind Substation. Install two GE N60 logic processing relays or	CET-ET-TP-RN-820401	902722024	High	May-23	337	78	51	465	337	78	51	465
08204	Whirlwind Sub: Modify the programs to add the Large Generating Facility to the Whirlwind	CET-ET-TP-RN-820402	902722029	High	Jan-23	-	19	7	26	-	19	7	26
	AA-Bank RAS.												
	Expand existing RTU at Whirlwind Substation to include points for status and alarms related to the new Whirlwind AA-Bank RAS relays required to add the Large Generating Facility to Whirlwind RAS. Expand existing RTU at Whirlwind Substation to include points for status and alarms related to the new Tehachapi CRAS relays required to add the Large Generating Facility to the Tehachapi CRAS.												
08204	Rabbtbrush Solar Project Reliability Network Upgrades					337	440	178	954	337	440	178	954
08223	Whirlwind AA Bank Centralized RAS. i. Whirlwind Substation. Utilize two GE N60 logic proce	CET-ET-TP-RN-822300	902705074	High	Jul-21	7	323	115	445	7	323	115	445
08223	Tehachapi CRAS: i. Whirlwind Substation. Install two GE N60 logic processing relays or equi	CET-ET-TP-RN-822301	902705075	High	Jul-21	5	324	115	445	5	324	115	445
08223	Willy Interconnection at Whirlwind Substation					12	647	231	889	12	647	231	889
08238	Valley Substation: West of Colorado River CRAS Inland/Devers Extension -Monitoring Infrast	CET-ET-TP-RN-823801	902760264	High	Mar-23	1	27	20	48	1	27	20	48
08238	San Bernardino Substation: West of Colorado River CRAS Inland/Devers Extension	CET-ET-TP-RN-823803	902760266	High	Apr-22	0	27	20	47	0	27	20	47
08238	San Bernardino Substation: West of Colorado River CRAS - Devers Extension - generation s	CET-ET-TP-RN-823804	902760267	High	Jun-22	344	40	-	384	344	40	-	384
08238	Etiwanda Substation: West of Colorado River CRAS Inland/Devers Extension -Monitoring Infr	CET-ET-TP-RN-823806	902760269	High	Aug-22	2	22	20	44	2	22	20	44

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WP-Schedule 16-Summary of ISO Cap Exp Forecast Non-Inc Projects

Page 3 of 4

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				Voltage		Prior	2022	2023	Total	Prior	2022	2023	Total
08238	Total Mountainview Generating Station Pmax Increase Project					348	116	60	524	348	116	60	524
08246	Victor Substation- North of Lugo CRAS –Monitoring infrastructure i. Install four (4) GE N60 log	CET-ET-TP-RN-824600	902768480	High	Aug-23	1	204	110	315	1	204	110	315
08246	Lugo Substation- North of Lugo CRAS –Monitoring infrastructure i. Install four (4) GE N60 logi	CET-ET-TP-RN-824601	902768481	High	May-23	2	204	110	316	2	204	110	316
08246	Kramer Substation- North of Lugo CRAS –Monitoring infrastructure Install two (2) GE N60 log	CET-ET-TP-RN-824602	902768482	High	Dec-23	1	205	110	316	1	205	110	316
08246	Roadway Substation 115/33 North of Lugo CRAS – generator addition. (a) Roadway Substati	CET-ET-TP-RN-824603	902768483	Low	May-23	3	204	110	316	3	204	110	316
08246	Roadway Substation–generator addition. Mojave Desert RAS. Install two (2) GE N60 logic pr	CET-ET-TP-RN-824604	902768484	Low	May-22	162	36	19	218	162	36	19	218
08246	Baldy Mesa Project Reliability Network Upgrades					168	853	459	1,481	168	853	459	1,481
08298	Windhub Substation. i. Install one (1) 220 kV line position which includes the following equipm	CET-ET-TP-RN-829803	903123443	High	Jan-23	583	965	235	1,783	583	965	235	1,783
08298	Tehachapi centralized RAS – generator addition i. Windhub Substation. Install two (2) GE N6i	CET-ET-TP-RN-829800	903123440	High	Dec-22	14	78	172	264	14	78	172	264
08298	Windhub AA Bank centralized RAS – monitoring infrastructure i. Windhub Substation. 1.	CET-ET-TP-RN-829801	903123441	High	Jan-23	25	515	487	1,027	25	515	487	1,027
08298	Windhub AA Bank centralized RAS – generation addition i. Windhub Substation. Install two	CET-ET-TP-RN-829802	903123442	High	Jan-23	6	102	62	171	6	102	62	171
08298	Bellefield Solar Farm Reliability Network Upgrades					629	1,660	956	3,245	629	1,660	956	3,245
08294	Pardee SubstationUpgrade 220kV Position 17 CB's (#4172, 5172, 6172) and Position 19 CB's	CET-ET-TP-RL-829400	903135849	High	Dec-22	70	2,366	6,186	8,623	70	2,366	6,186	8,623
08294	Pardee-Sylmar 220kV Transmission Line [North Coast Grid ET-00664-04601]: Replace one st	CET-ET-TP-RL-829401	903135850	High	Nov-22	23	934	-	957	23	934	-	957
08294	Pardee-Sylmar 220kV Transmission Line [Metro West Grid ET-00664-04645]:	CET-ET-TP-RL-829402	903135851	High	Dec-22	44	1,960	-	2,004	44	1,960	-	2,004
08294	Sylmar Substation (Work to be paid for by SCE but performed by LADWP): Upgrade 220kV P	CET-ET-TP-RL-829400	1002527	High	Jun-23	-	1,003	6,186	7,189	-	1,003	6,186	7,189
08294	Pardee-Sylmar No. 1 and No. 2 230kV Line Rating Increase Project					137	6,263	12,372	18,773	137	6,263	12,372	18,773
08355	Tehachapi CRAS – Monitoring infrastructurei. Whirlwind Substation.1. Install two (2) GE N60 i	CET-ET-TP-RN-835500	903429710	High	Oct-23	6	128	162	297	6	128	162	297
08355	Tehachapi CRAS – Monitoring infrastructureii. Vincent Substation.1. Install two (2) GE N60 lo	CET-ET-TP-RN-835502	903429712	High	Oct-23	1	98	198	297	1	98	198	297
08355	Tehachapi CRAS – Monitoring infrastructureMidway Substation.Install four (4) GE N60 logic p	CET-ET-TP-RN-835503	903429713	High	Oct-23	0	98	198	297	0	98	198	297
08355	Tehachapi CRAS – Monitoring infrastructureWindhub Substation.1. Install two (2) GE N60 log	CET-ET-TP-RN-835504	903429714	High	Oct-23	5	98	193	297	5	98	193	297
08355	TOT909-Q1631 -Glenfeliz Solar Farm					12	424	752	1,188	12	424	752	1,188
08358	Eldorado Substation IF (RNU) Sloan Canyon RAS	CET-ET-TP-RN-835800	903427639	High	Feb-23	22	685	236	943	22	685	236	943
08359	Eldorado RNU (IF)	CET-ET-TP-RN-835801	903427640	High	Feb-23	10	262	91	363	10	262	91	363
08358	TOT796/Q1341, Yellow Pine 2, LLC, Install Reliability Network Upgrades Eldorado 500/220kV (T)7588					32	947	327	1,306	32	947	327	1,306
Total Transmission Project Reliability						100,162	45,497	55,255	200,914	94,146	43,486	55,255	192,886
Infrastructure Replacement													
03138	Sylmar Convertor Station: Misc Cap	CET-OT-OT-ME-313800		High	Blanket Specifics	-	5,819	2,647	8,466	-	5,819	2,647	8,466
04651	Palo Verde Switchrack: Misc Cap	CET-OT-OT-ME-465100		High	Blanket Specifics	-	759	927	1,686	-	759	927	1,686
Total LADWP/Palo Verde - WORK PERFORMED BY OPERATING AGENT						-	6,578	3,574	10,152	-	6,578	3,574	10,152
04211	Replace Bulk Power Circuit Breakers (220kV and Above)	CET-ET-IR-CB-421100		High	Blanket Specifics	-	5,124	5,928	11,052	-	5,124	5,928	11,052
04343	Non-Bulk Relay Replacement Program ("SRRP")	CET-ET-IR-RP-434301		Low	Blanket Specifics	-	3,053	3,192	6,245	-	3,053	3,192	6,245
04756	Substation Miscellaneous Equipment Additions & Betterment	CET-ET-IR-ME-475600		High	Blanket Specifics	-	12,475	23,252	35,727	-	12,211	23,252	35,463
04837	Replace SAS Infrastructure (FERC)	CET-ET-IR-RP-483701		High	Blanket Specifics	-	1,088	100	1,188	-	1,088	100	1,189
05089	Bulk Power 500kV & 220kV Line Relay Replacement	CET-ET-IR-RP-508900		High	Blanket Specifics	-	8,842	10,248	19,090	-	8,842	10,248	19,090
05210	Substation Transformer Bank Replacement Program (AA-Bank & A-Bank)	CET-ET-IR-TB-521001		High	Blanket Specifics	-	3,663	4,377	8,041	-	3,663	4,377	8,041
06197	On-line Dissolved Gas Analysis of Bulk Power Transformer Banks	CET-ET-IR-ME-619700		High	Blanket Specifics	-	1,975	669	2,644	-	1,938	669	2,607
07713	Substation Switchrack Rebuilds (FERC)	CET-ET-IR-RB-771301		High	Blanket Specifics	-	16,818	7,855	24,673	-	989	462	1,451
07716	Substation Batteries & Chargers (FERC)	CET-ET-IR-ME-771601		High	Blanket Specifics	-	999	650	1,649	-	999	650	1,649
07957	Devers: Substation Maintenance and Test Building Improvements program	COS-00-RE-AD-SR0004	801432305	High	Dec-21	4,449	4,701	799	9,949	4,449	3,849	654	8,951
Total Substation Maintenance and Test Building Improvements Program						4,449	4,701	799	9,949	4,449	3,849	654	8,951
07637	Substation Facility Capital Maintenance	COS-00-RE-MA-NE7637		High	Blanket Specifics	-	15,247	15,301	30,548	-	5,337	5,355	10,692
07392	Seismic Program - Trans Subs (FERC)	COS-00-SP-TD-000000		High	Blanket Specifics	-	17,800	22,000	39,800	-	11,392	14,080	25,472
07392	Seismic Program - Trans Lines	COS-00-SP-TD-000002		High	Blanket Specifics	-	3,150	4,000	7,150	-	3,150	4,000	7,150
07392	Seismic Assessment and Mitigation Program for Transmission Assets					-	20,950	26,000	46,950	-	14,542	18,080	32,622
Physical Security Enhancement Programs:													
07949	Protection of Grid Infrastructure Assets (formerly, Physical Security Systems - Electric Faciliti	COS-00-CS-CS-745400		High	Blanket Specifics	-	15,073	16,621	31,694	-	8,720	9,615	18,335
07573	Substation Fence/Gate (Cu Theft) (aka, Security Fence and Lights Upgrade) (FERC)	CET-ET-IR-ME-757301		High	Blanket Specifics	-	8,828	6,265	15,093	-	3,611	3,192	6,804
07820	220/66 kV (ES-5050): NERC CIP-14 Physical Security Enhancements	CET-ET-IR-ME-782002	901656355	High	Sep-18	-	13	-	13	-	11	-	11
07820	500/230 kV (ES-5054): NERC CIP-14 Physical Security Enhancements	CET-ET-IR-ME-782005	901656358	High	May-20	-	1	-	1	-	1	-	1
07820	500/230 kV (ES-5090): NERC CIP-14 Physical Security Enhancements	CET-ET-IR-ME-782008	901657121	High	May-20	-	25	-	25	-	25	-	25
07820	500/230 kV (ES-5061): NERC CIP-14 Physical Security Enhancements	CET-ET-IR-ME-782009	902072001	High	Jul-21	-	0	-	0	-	0	-	0
07820	Substation Physical Security Enhancements Project					-	39	-	39	-	36	-	36
08042	500/230 kV (ES-5067): Physical Security Tier 2	CET-ET-IR-ME-804200	902210275	High	Dec-22	766	5,436	-	6,202	628	4,457	-	5,086
08042	500/230 kV (ES-5047): Physical Security Tier 2	CET-ET-IR-ME-804202	902210277	High	Sep-23	343	700	2,506	3,549	343	700	2,506	3,549
08042	500/230 kV (ES-8060): Physical Security Tier 2	CET-ET-IR-ME-804203	902210452	High	Dec-22	28	700	3,929	4,657	28	700	3,929	4,657
08042	500/230 kV (ES-5079): Physical Security Tier 2	CET-ET-IR-ME-804204	902210453	High	Nov-23	25	700	3,689	4,414	23	623	3,283	3,929
08042	500/230 kV (ES-5070): Physical Security Tier 2	CET-ET-IR-ME-804202	903511341	High	May-23	76	700	12,457	13,234	76	700	12,457	13,234
08042	Physical Security Projects (Tiers 2 & 3)					1,239	8,236	22,581	32,055	1,098	7,180	22,175	30,453
Total Physical Security Enhancement Programs						1,239	32,176	45,467	78,882	1,098	19,548	34,982	55,629

Summary of ISO Capital Expenditure Forecast - Non-Incentive Projects

WP-Schedule 16-Summary of ISO Cap Exp Forecast Non-Inc Projects

Page 4 of 4

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			High/ Low	Project Total (ISO & non-ISO)				ISO Portion					
PIN	Project Title	C-WBS	Order #	Voltage	OD	Prior	2022	2023	Total	Prior	2022	2023	Total
Total Infrastructure Replacement						5,687	133,689	147,414	286,790	5,547	87,761	111,525	204,833
Grid Applications													
08278	El Nido Substation- CRAS Relays and Network Gear	CET-ET-GA-CR-827800	903054557	High	Mar-22	327	171	-	498	327	171	-	498
08278	El Segundo Substation- CRAS Relays & Network Gear: DISC & remove existing El Nido/El Se	CET-ET-GA-CR-827801	903054558	High	Mar-22	-	51	-	51	-	51	-	51
08278	La Cienega Substation- CRAS Relays & Network Gear: DISC & remove existing El Nido/El Se	CET-ET-GA-CR-827802	903054579	High	Mar-22	354	51	-	406	354	51	-	406
08278	La Fresa Substation-CRAS Relays & Network Gear La Fresa Substation: DISC & remove exis	CET-ET-GA-CR-827803	903054581	High	Mar-22	190	87	-	277	190	87	-	277
08278	El Nido/El Segundo CRAS RGOOSE (Routable Generic Object Oriented Substation Environment) Conversion					872	360	-	1,231	872	360	-	1,231
08284	Colorado River Substation (Q1402 Atlas Solar Tripping):Install ten (10) GE N60 logic	CET-ET-GA-CR-828403	903110310	High	Dec-22	9	452	760	1,221	9	452	760	1,221
08284	Colorado River Substation (Removal CRC RAS)	CET-ET-GA-CR-828402	903109578	High	Nov-22	32	102	142	276	32	102	142	276
08284	Vista Sub: Install relays/Add points. Vista Substation (RNU): a. Install four (4) G.E. N60 logic	CET-ET-GA-CR-828401	902699207	High	Jun-22	1,113	400	-	1,513	1,113	400	-	1,513
08284	San Bernardino Sub:Install relays/add points	CET-ET-GA-CR-828407	902699210	High	Jun-22	355	350	-	705	355	350	-	705
08284	Mira Loma Sub:Add relays/add points	CET-ET-GA-CR-828402	902699212	High	Jun-22	698	500	-	1,198	698	500	-	1,198
08284	Devers Sub:Install relays/add points	CET-ET-GA-CR-828403	902699214	High	Sep-22	1,005	508	-	1,513	1,005	508	-	1,513
08284	West of Colorado River CRAS Inland/Devers Extension					3,212	2,312	902	6,426	3,212	2,312	902	6,426
06446	VARIOUS: INSTALL PHASOR MEASUREMENT SYSTEM					-	8,238	5,143	13,380	-	6,208	2,770	8,978
Total Grid Apps						4,083	10,909	6,045	21,038	4,083	8,880	3,672	16,635
PWRD Blankets													
03363	Substation Planned Maintenance Replacements	CET-PD-IR-SP-SUBSNW		High	Blanket Specifics	-	13,000	13,500	26,500	-	692	718	1,410
03363	Substation Unplanned Maintenance Replacements	CET-PD-BM-SU-SUBSNW		High	Blanket Specifics	-	26,388	26,388	52,777	-	1,209	1,209	2,417
03363	Substation - Storm	CET-PD-ST-SS-SUBSNW		High	Blanket Specifics	-	1,033	1,033	2,067	-	228	228	457
03363	Substation Maintenance, Breakdown, & Storm					-	40,422	40,922	81,343	-	2,129	2,155	4,284
07890	Transmission Maintenance Planned - Overhead Conductor	CET-PD-IR-TP		High	Blanket Specifics	-	1,504	-	1,504	-	1,504	-	1,504
07891	Transmission Maintenance Planned - Pole Replacement	CET-PD-IR-TP-789100		Low	Blanket Specifics	-	176	-	176	-	176	-	176
03364	Transmission Breakdown Maintenance Unplanned	CET-PD-BM-TU-TRSJAC		High	Blanket Specifics	-	2,811	2,873	5,684	-	668	683	1,352
03364	Transmission Tower Corrosion Program	CET-PD-IR-TS-TRSJAC		High	Blanket Specifics	-	5,255	20,874	26,129	-	3,678	14,612	18,290
03364	Transmission Grid-Based Maintenance	CET-PD-IR-TG-TRSJAC		High	Blanket Specifics	-	31,157	31,812	62,969	-	9,235	9,429	18,664
	Transmission Maintenance & Breakdown Maintenance					-	40,902	55,559	96,462	-	15,261	24,724	39,985
03364	Transmission Deteriorated Pole Repl & Restoration	CET-PD-IR-TR-TRSJAC		Low	Blanket Specifics	-	115,990	112,599	228,589	-	5,544	5,382	10,927
03364	Pole Loading Transmission Pole Replacements	CET-PD-IR-PT-TRSJAC		Low	Blanket Specifics	-	19,881	24,366	44,248	-	243	297	540
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)					-	136,025	137,157	273,182	-	5,789	5,682	11,472
07298	Transmission Line Rating Remediation (Exempt from Licensing)	CET-PD-OT-PJ-729801		High	Blanket Specifics	-	64,588	65,503	130,091	-	64,588	65,503	130,091
03362	Critical Infrastructure Spares - FERC Spare Transformer Equipment Program (STEP)/Emerg	CET-PD-CI-CI-CRINSP		High	Blanket Specifics	-	6,200	4,216	10,416	-	6,200	4,216	10,416
03367	Substation - Claim	CET-PD-CL-SC-SUBSNW		High	Blanket Specifics	-	141	141	283	-	3	3	7
03367	Transmission - Claim	CET-PD-CL-TC-TRSJAC		High	Blanket Specifics	-	1,610	1,644	3,254	-	46	47	94
03367	Transmission - Storm	CET-PD-ST-TS-TRSJAC		High	Blanket Specifics	-	4,008	4,100	8,108	-	1,062	1,086	2,148
04057	RE Erosion Control CEMA Creek Fire	CET-OT-CM-ST-CEMAST	903237253	High	Nov-22	2,782	4,000	700	7,482	2,782	4,000	700	7,482
	Transmission Storm & Claims					2,782	9,759	6,585	19,126	2,782	5,112	1,837	9,731
08224	Transmission Enhanced Overhead Inspections (EOI) Capital Remediations	CET-PD-WM-TP-822400		Low	Blanket Specifics	-	439	239	678	-	439	239	678
Total PWRD Blankets						-	297,897	309,943	610,621	-	99,080	104,118	205,980
Total Non-Incentive Transmission Projects						112,790	490,150	519,259	1,122,199	106,632	240,970	275,174	622,777
Total Forecast Specific Project Expenditures (Closing by December 2023)						112,790	66,864	80,601	260,254	106,632	62,548	80,050	249,231
Total Forecast Blanket Expenditures (Closing by December 2023)						-	423,286	438,659	861,945	-	178,422	195,124	373,546