

California ISO
Projects Completed July 2019 through June 2020

Capital ID #	Year Approved	Project Description	Approved Project Budget	Final Cost	% Completed to Budget
Capital Projects					
12224	2016	EMS	\$ 14,750,946	\$ 14,750,946	100%
12233	2017	Market Enhancement for EMS	\$ 131,370	\$ 131,370	100%
12241	2019	Model Synchronization & Activation	\$ 263,934	\$ 261,779	99%
12242	2019	RMR & CPM Enhancements	\$ 361,105	\$ 361,105	100%
12243	2019	FERC Order 841	\$ 15,572	\$ 15,572	100%
12244	2019	CRR Transparency Enhancements	\$ 67,389	\$ 73,940	110%
12394	2019	VER Forecasting CR	\$ 45,290	\$ 45,290	100%
12399	2017	Weather & Geospatial Data Sourcing	\$ 225,114	\$ 225,114	100%
12415	2017	ETSR Enhancements for EMS	\$ 239,529	\$ 239,529	100%
12417	2018/2019	RC Services	\$ 5,135,855	\$ 4,838,784	94%
12418	2018	Day Ahead Market Enhancements	\$ 258,500	\$ 254,493	98%
12423	2018	EMNA Functional Enhancements	\$ 1,068,149	\$ 1,048,535	98%
12427	2019	Operation System Improvements 2019	\$ 150,910	\$ 150,910	100%
12430	2019	Energy Storage & Distribution Energy Resources Phase 3A	\$ 234,047	\$ 234,047	100%
12431	2019	LMPM Enhancements	\$ 446,689	\$ 446,689	100%
12432	2019	EIM Enhancements 2019	\$ 410,255	\$ 411,515	100%
12433	2019	MIP Engine Improvements 2019	\$ 200,000	\$ 199,951	100%
12434	2019	Real Time Market Neutrality Settlement	\$ 38,496	\$ 25,555	66%
12436	2019	AS Procurement Enhancements	\$ 32,000	\$ 29,624	93%
12444	2019	Black Start Restoration Phase 1	\$ 11,960	\$ 4,144	35%
12512-	2018	Lincoln Video Wall	\$ 1,159,439	\$ 1,159,439	100%
12512	2020	Folsom Video Wall upgrade	\$ 955,000	\$ 945,395	99%
12514	2018	New Vehicle Purchase	\$ 100,000	\$ 99,620	100%
12516	2019	Campus Operations 2019	\$ 1,056,526	\$ 1,034,968	98%
12517	2019	Interconnection Process Enhancements	\$ 1,150	\$ 1,150	100%

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12518	2019	FERC Order 845	\$ 770	\$ 770	100%
12646 /21358	2018/2019	RC Hardware/Facilities Costs	\$ 1,803,086	\$ 1,803,086	100%
12649/ 12650/ 21370	2019	2019 Hardware and Software Purchases	\$ 4,000,000	\$ 3,998,520	100%
13269	2018	Hosted Advanced Network Applications	\$ 588,349	\$ 588,349	100%
26		Total Completed Capital Projects	\$ 33,751,429.3	\$ 33,380,188.0	99%

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Requirements and Other Projects					
21278	2016	EMS Capital Non Capital	\$ 324,852	\$ 324,852	100%
21304	2018	Folsom Lighting Retrofit to LED	\$ 375,000	\$ 342,800	91%
21314	2017	Market Enhancement for EMS	\$ 12,100	\$ 12,100	100%
21316	2018	BAL -002 - OATI changes	\$ 23,917	\$ 23,917	100%
21317	2018/2019	RC Services Requirements	\$ 1,270,568	\$ 1,270,568	100%
21353	2018	FERC Order 844 Uplift Cost Allocation & Transparency	\$ 113,048	\$ 85,578	76%
21355	2018	ETCC Replacement Phase 2 PLC	\$ 62,924	\$ 62,924	100%
21357	2018	Plan B for RCSI	\$ 303,358	\$ 303,358	100%
21360	2018	Excess Behind the Meter Production	\$ 29,454	\$ 29,454	100%
21361	2018	FERC Order 845	\$ 40,078	\$ 40,078	100%
21362	2018/ 2019	Settlement Replacement	\$ 47,495	\$ 47,495	100%
21363	2018/ 2019	FERC 841 - NGR Model	\$ 25,510	\$ 25,510	100%
21366	2018	Dispatch Operating Target Tariff Clarification	\$ 18,080	\$ 896	5%
21367	2018	Intertie Deviation Settlements	\$ 16,440	\$ 15,873	97%
21368	2018	Interconnection Process Enhancements	\$ 7,050	\$ 7,050	100%
21371	2019	OSI 2019 Non Capital	\$ 991,787	\$ 915,637	92%
21372	2019	TSI 2019 Non Capital	\$ 650,000	\$ 609,213	94%
21380	2019	VERS Forecasting	\$ 11,455	\$ 11,455	100%
21381	2019	Software Security Implementation	\$ 119,070	\$ 119,070	100%
21384	2019	Real Time Market Neutrality Settlement	\$ 4,968	\$ 4,968	100%
21389	2019	IT Systems Robustness (AIM)	\$ 10,561	\$ 10,561	100%
21390	2019	Black Start Restoration Phase 2	\$ 17,365	\$ 17,365	100%
21392	2019	Day Ahead Reliability Tool (DART)	\$ 5,276	\$ 5,276	100%
21396	2019	Market Settlement Timeline Transformation	\$ 29,703	\$ 23,643	80%
21397	2019	EIM Enhancements 2020	\$ 48,640	\$ 48,640	100%
21398	2019	Day Ahead Nodal Pricing Model	\$ 2,300	\$ 2,300	100%

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21404	2019	Outage Optimization Phase 2	\$ 8,475	\$ 8,475	100%
21405	2019	RC Enhancements 2020	\$ 21,840	\$ 21,840	100%
21406	2019	Model Synchronization & Automation Phase 2	\$ 10,775	\$ 10,775	100%
21408	2020	FERC Order 841 - Adjustments	\$ 29,177	\$ 29,177	100%
21409	2020	FRP Enhancements Buffer and Min	\$ 31,382	\$ 31,382	100%
21412	2020	RC Onboarding	\$ 5,254	\$ 5,254	100%
21414	2020	Enhance Hydro DEB calculations	\$ 3,000	\$ 3,000	100%
21415	2020	Slow Demand Response	\$ 4,935	\$ 4,935	100%
21417	2020	IT System Robustness CTS-Upgrade	\$ 8,150	\$ 8,150	100%
35		Total Requirement and Other Projects	\$ 4,683,987	\$ 4,483,569	96%
61		Grand Total Completed Projects	\$ 38,435,416	\$ 37,863,757	99%