

Application No.: A.22-04-001
Exhibit No.: SCE-03
Witnesses: C. Balgos
E. Castano
D. Coher
D. Cox
L. Gaillac
O. Heum



(U 338-E)

***Energy Resource Recovery Account (ERRA)
Review of Operations, 2021
Chapters I - II***

PUBLIC VERSION

**Before the
Public Utilities Commission of the State of California**

Rosemead, California
April 1, 2022

**SCE-03: Testimony of Southern California Edison Company in Support of Its
Energy Resource Recovery Account (ERRA) Review of Operations, 2021
Chapters I - II**

Table Of Contents

Section	Page	Witness
I. LEAST-COST DISPATCH.....	1	C. Balgos
A. Introduction and Commission Standard Review	1	
1. Information in SCE’s Testimony and Workpapers.....	1	
2. The Commission’s LCD Standard.....	2	
B. Overview of LCD in the CAISO Wholesale Market	4	
1. Supply and Demand Bidding/Scheduling	4	
2. Spot Market Electrical and Natural Gas Transactions	5	
C. LCD Principles during the Record Period	5	
D. Implementing the LCD Standard.....	6	
1. SCE’s Bidding Strategy	6	
a) Supply Bidding Strategy	6	
(1) Opportunity Cost Bidding.....	7	
(2) Dispatch Efficiency Bidding.....	8	
(3) Import Bidding.....	8	
2. Renewable Curtailment Bidding.....	9	
3. Demand Bidding Strategy	9	
4. Demand Response Bidding Strategy	10	
5. Eastwood and Hoover Hydro Bidding Strategy.....	10	
E. Daily LCD Process	10	
1. SCE Managed Its Resources in Compliance with SOC 4.....	11	
F. Summary Reports – Annual Exception Rates.....	12	

**SCE-03: Testimony of Southern California Edison Company in Support of Its
Energy Resource Recovery Account (ERRA) Review of Operations, 2021
Chapters I - II**

Table Of Contents (Continued)

	Section	Page	Witness
1.	Incremental Bid Cost Calculations	12	
2.	Self-Commitment Exceptions	13	
3.	Master File (RDT) Change Exceptions	13	
G.	Market and Business Process Changes	14	
1.	FERC Order 831	14	
2.	Energy Storage and Distributed Energy Resource Phase 4A	15	
3.	Hybrid Resources Phase 2A	15	
4.	Market Enhancements for Summer 2021 Readiness	15	
5.	Internal Software Changes	16	
6.	LCD-Related Process Changes	16	
H.	Background Summary Tables	17	
I.	Demand Response Resources	17	
J.	SCE's Market Purchases and Sales	18	
1.	Day-Ahead Transaction Summary	19	
2.	SCE's Day-Ahead Transactions Were Competitive and in Compliance with SOC 4	20	
3.	Hour-Ahead Transaction Summary	21	
4.	SCE's Hour-Ahead Transactions Were Competitive and in Compliance with SOC 4	22	
5.	Gas Procurement Supporting LCD	22	
6.	Gas Transaction Summary	23	
7.	SCE's Spot Gas Transactions Were Competitive and in Compliance with SOC 4	24	

**SCE-03: Testimony of Southern California Edison Company in Support of Its
Energy Resource Recovery Account (ERRA) Review of Operations, 2021
Chapters I - II**

Table Of Contents (Continued)

	Section	Page	Witness
K.	SCE’s Spot Electric and Gas Transactions Met LCD Compliance Requirements	24	
L.	Conclusion	24	
II.	CONTRACT ADMINISTRATION AND COSTS	25	D. Coher L. Gaillac
A.	Introduction.....	25	
1.	Behind-The-Meter Contracts	25	E. Castano
2.	Conventional and Natural Gas Contracts.....	25	D. Coher L. Gaillac
3.	PURPA and CHP Contracts.....	26	
4.	RPS Contracts	27	
5.	BESS Contracts.....	28	
B.	Safety	29	
1.	BTM Contract Development Project Monitoring and Safety.....	29	E. Castano
2.	Non-BTM Contract Administration Safety Practices	29	D. Coher L. Gaillac
C.	Authorization for Recovery of Contract Expenses	32	
1.	The Standard of Review for Cost Recovery	34	
D.	Summary of Contract Administration and Management Processes	35	E. Castano
1.	Behind-The-Meter.....	36	
a)	Contract Administration.....	36	
b)	Summary of Contract Activity.....	36	
c)	Contract Development	37	

**SCE-03: Testimony of Southern California Edison Company in Support of Its
Energy Resource Recovery Account (ERRA) Review of Operations, 2021
Chapters I - II**

Table Of Contents (Continued)

	Section	Page	Witness
d)	Contract Amendment Administration.....	37	
(1)	Metrus Energy Hercules 1, LLC (Offer 408001)	39	
(2)	Metrus Energy Hercules 1, LLC (Offer 408002)	39	
(3)	Metrus Energy Hercules 1, LLC (Offer 408003)	39	
(4)	Metrus Energy Hercules 1, LLC (Offer 408004)	40	
(5)	Metrus Energy Hercules 1, LLC (Offer 408005)	40	
(6)	Metrus Energy Hercules 1, LLC (Offer 408006)	40	
(7)	Metrus Energy Hercules 1, LLC (Offer 408007)	41	
(8)	Metrus Energy Hercules 1, LLC (Offer 408008)	41	
(9)	Metrus Energy Hercules 1, LLC (Offer 408009)	41	
(10)	Metrus Energy Hercules 1, LLC (Offer 408010)	42	
(11)	Metrus Energy Hercules 1, LLC (Offer 408011)	42	
(12)	Metrus Energy Hercules 1, LLC (Offer 408012)	42	
(13)	Metrus Energy Hercules 1, LLC (Offer 408013)	43	
(14)	Metrus Energy Hercules 1, LLC (Offer 408014)	43	

**SCE-03: Testimony of Southern California Edison Company in Support of Its
Energy Resource Recovery Account (ERRA) Review of Operations, 2021
Chapters I - II**

Table Of Contents (Continued)

	Section	Page	Witness
(15)	Metrus Energy Hercules 1, LLC (Offer 408015)	43	
(16)	Metrus Energy Hercules 1, LLC (Offer 408016)	44	
(17)	Metrus Energy Hercules 1, LLC (Offer 408017)	44	
(18)	FSG Energy Efficiency, LLC (Offer 447102)	44	
(19)	Ice Bear SPV #1 (Offer 431154)	45	
(20)	Ice Bear SPV #1, LLC (Offer 431157)	45	
(21)	Ice Bear SPV #1, LLC (Offer 431160)	45	
(22)	Ice Bear SPV #1, LLC (Offer 431163)	46	
(23)	Ice Bear SPV #1, LLC (Offer 431166)	46	
(24)	Swell Energy VPP Fund (Offer ACES2-2019-DRES-001)	46	
(25)	Sunrun Inc (SR-2019-DRES-01)	47	
(26)	Sunrun Inc (SR-2019-DRES-02)	47	
e)	Contract Assignment Administration	47	
f)	Contract Capacity Verifications.....	51	
g)	Measurement of Energy Deliveries	52	
(1)	Energy Efficiency:	52	
(2)	Renewable Distributed Generation:	53	

**SCE-03: Testimony of Southern California Edison Company in Support of Its
Energy Resource Recovery Account (ERRA) Review of Operations, 2021
Chapters I - II**

Table Of Contents (Continued)

	Section	Page	Witness
	(3) Permanent Load Shift:	53	
	(4) Demand Response:.....	53	
h)	Dispute Resolution and Litigation	54	
	(1) Willdan Energy Solutions, Inc (ID 408001, 408002, 408003, 408004, 408005, 408006, 408007, 408008, 408009, 408010, 408011, 408012, 408013, 408014, 408015, 408016, 408017)	54	
i)	Contract Terminations	54	
j)	Contracts that Achieved Commercial Operation.....	55	
k)	Other Contract Activities	55	
l)	BTM Contract Payment Process.....	56	
	(1) Energy Efficiency:	56	
	(2) Renewable Distributed Generation:	56	
	(3) Permanent Load Shift:	57	
	(4) Demand Response:.....	58	
m)	BTM Contract Collateral	58	
2.	Conventional and Natural Gas	58	D. Coher
			L. Gaillac
a)	Contract Administration.....	60	
b)	Summary of Contract Activity	60	
c)	Conventional Contract Delivery	60	
d)	Contract Development	61	
e)	Contract Amendment Administration.....	64	

**SCE-03: Testimony of Southern California Edison Company in Support of Its
Energy Resource Recovery Account (ERRA) Review of Operations, 2021
Chapters I - II**

Table Of Contents (Continued)

	Section	Page	Witness
(1)	Stanton Energy Reliability Center, LLC (ID 10051)	66	
(2)	Peninsula Clean Energy Authority (ID 11252).....	66	
(3)	Walnut Creek Energy, LLC (ID 10047) 2/12	66	
(4)	El Segundo Energy Center LC (ID 11080)	66	
(5)	Shell Energy North America (US), L.P (ID 11240)	67	
(6)	AES Alamitos Energy, LLC (ID 10001)	67	
(7)	AES Huntington Beach Energy, LLC (ID10002).....	67	
(8)	Silicon Valley Clean Energy Authority (ID 11229)	68	
(9)	BP Energy Company (ID11025).....	68	
(10)	BP Products North America Inc. (ID 11241)	68	
(11)	Central Coast Community Energy (ID 112532).....	68	
(12)	AES Alamitos Energy, LLC (ID 10001)	69	
(13)	AES Huntington Beach, LLC (ID 10002)	69	
(14)	AES Alamitos Energy, LLC (ID 10001)	70	
(15)	AES Huntington Beach, LLC (ID 10002)	70	

**SCE-03: Testimony of Southern California Edison Company in Support of Its
Energy Resource Recovery Account (ERRA) Review of Operations, 2021
Chapters I - II**

Table Of Contents (Continued)

	Section	Page	Witness
	(16) El Segundo Energy Center LC (ID 11080)	70	
f)	Contract Assignment Administration	71	
g)	Affiliate Transactions and Contract Information	71	
h)	Dispute Resolution and Litigation	71	
	(1) Carson Cogeneration Company, LLC (ID 11038 f/k/a 2087)	71	
i)	Contract Termination	72	
j)	Inter-utility Contracts.....	73	
	(1) WAPA / Bureau of Reclamation (ID 10045)	74	
	(2) City of Pasadena Corporation Grant Deed (ID 11048)	74	
3.	PURPA AND CHP	74	
a)	Contract Administration.....	75	
b)	Summary of Contract Activity	77	
c)	PURPA and CHP Projects That Achieved Commercial Operation or Started Delivering to SCE under a New Contract	78	
d)	Contract Development	79	
e)	Contract Amendment Administration.....	79	
	(1) Elk Hills Power, LLC (ID 2844).....	80	
	(2) Watson Cogeneration Company (ID 2829)	80	

SCE-03: Testimony of Southern California Edison Company in Support of Its Energy Resource Recovery Account (ERRA) Review of Operations, 2021 Chapters I - II

Table Of Contents (Continued)

	Section	Page	Witness
	(3) Watson Cogeneration Company (ID 2829)	81	
f)	Contract Assignment Administration	81	
g)	Affiliate Transactions and Contract Information	82	
h)	Dispute Resolution and Litigation	82	
i)	Uncontrollable Force Administration	82	
j)	Forced Outage Claim Administration	83	
	(1) Salton Sea Power Generation Company #4 (ID 3050)	84	
k)	Contract Terminations	84	
4.	RPS	85	
a)	Contract Administration.....	85	
b)	Summary of Contract Activity.....	86	
c)	RPS Contracts that Achieved Commercial Operation.....	91	
d)	Contract Development	91	
e)	Contract Amendment Administration.....	93	
	(1) Blythe Solar II, LLC (ID 5885)	96	
	(2) Sun Streams, LLC (ID 5882).....	96	
	(3) Imperial Valley Solar 2, LLC (ID 5805)	96	
	(4) Pacific Ultrapower Chinese Station (ID 1242).....	97	
	(5) Visalia CSG, LLC (ID 5126).....	97	

**SCE-03: Testimony of Southern California Edison Company in Support of Its
Energy Resource Recovery Account (ERRA) Review of Operations, 2021
Chapters I - II**

Table Of Contents (Continued)

	Section	Page	Witness
(6)	American Kings Solar, LLC (ID 5263)	97	
(7)	Desert Sunlight 250, LLC (ID 5217)	98	
(8)	Blythe Solar II, LLC (ID 5885)	98	
(9)	Blythe Solar III, LLC (ID 5889)	99	
(10)	McCoy Solar LLC (ID 5494)	99	
(11)	North Hurlbert Wind, LLC (ID 6330), South Hurlburt Wind, LLC (ID 6331), and Horseshoe Bend Wind, LLC (ID 6332)	100	
(12)	Copper Mountain Solar 4, LLC (ID 5804)	101	
(13)	SREC Trade Inc (ID 11271-8055)	101	
(14)	Visalia CSG, LLC (ID 5126)	101	
(15)	Phelan Solar, LLC (ID 5124)	101	
(16)	Maverick Solar, LLC (ID 5264)	102	
(17)	Organic Energy Solutions, LLC (ID 1347)	102	
(18)	Visalia CSG, LLC (ID 5126)	102	
(19)	SREC Trade, Inc. (ID 88063)	103	
(20)	RE Gaskell West 1, LLC (ID 5245)	103	
(21)	SEPV 1, LLC (5396)	103	
(22)	SEPV 2, LLC (5397)	103	
f)	Contract Assignment Administration	104	
g)	Affiliate Transactions and Contract Information	105	

**SCE-03: Testimony of Southern California Edison Company in Support of Its
Energy Resource Recovery Account (ERRA) Review of Operations, 2021
Chapters I - II**

Table Of Contents (Continued)

	Section	Page	Witness
	h) Uncontrollable Force Administration	105	
	(1) Solar Partners I, LLC (ID 5208)	107	
	(2) Santa Barbara County BioMAT (ID 1346)	109	
	i) Energy Delivery Performance Administration	110	
	(1) California Water Service Company (ID 4205).....	111	
	(2) Calleguas Municipal Water District (ID 4252).....	111	
	(3) US Topco Energy, Inc. (Soccer Center) (ID 5625).....	111	
	(4) Alta Wind IV, LLC (ID 6317)	111	
	(5) Alta Wind V, LLC (ID 6318)	112	
	(6) Alta Wind VIII, LLC (ID 6321)	112	
	(7) Mammoth-Pacific, L.P. (ID 3027).....	112	
	j) Dispute Resolution and Litigation	112	
	(1) Sand Canyon of Tehachapi LLC (ID 6341)	112	
	(2) Mountain View Power Partners IV, LLC (ID 6304)	113	
	k) Contract Terminations	114	
5.	BESS	116	
	a) Contract Administration.....	116	
	b) Summary of Contract Activity.....	117	

**SCE-03: Testimony of Southern California Edison Company in Support of Its
Energy Resource Recovery Account (ERRA) Review of Operations, 2021
Chapters I - II**

Table Of Contents (Continued)

	Section	Page	Witness
c)	BESS Contracts that Achieved Commercial Operation.....	119	
d)	Contract Development	119	
e)	Contract Amendment Administration.....	120	
(1)	Johanna Energy Center, LLC (ID 12002)	125	
(2)	Quarantina Energy Storage, LLC (ID 12021)	125	
(3)	Silverstrand Grid LLC (ID 12026)	125	
(4)	Johanna Energy Center, LLC (ID 12002)	125	
(5)	Painter Energy Storage, LLC (ID 12032)	126	
(6)	Ventura Energy Storage, LLC (ID 12028)	126	
(7)	Johanna Energy Center, LLC (ID12002).....	126	
(8)	Blythe Energy Storage II, LLC (ID 12039)	127	
(9)	Ventura Energy Storage, LLC (ID 12028)	127	
(10)	SP Tranquillity Solar Storage, LLC (ID 12034).....	127	
(11)	SP Garland Solar Storage, LLC (ID 12035)	128	
(12)	Orange County Energy Storage 2, LLC (ID 12003)	128	

**SCE-03: Testimony of Southern California Edison Company in Support of Its
Energy Resource Recovery Account (ERRA) Review of Operations, 2021
Chapters I - II**

Table Of Contents (Continued)

	Section	Page	Witness
(13)	Orange County Energy Storage 3, LLC (ID 12004)	128	
(14)	VESI Pomona Energy Storage, Inc (ID 12010).....	128	
(15)	Acorn I Energy Storage LLC (ID 12022)	129	
(16)	Edwards Sanborn Storage I, LLC (ID 12036)	129	
(17)	SP Tranquillity Solar Storage, LLC (ID 12034).....	129	
(18)	SP Garland Solar Storage, LLC (ID 12035)	130	
(19)	SP Tranquillity Solar Storage, LLC (ID 12034).....	130	
(20)	SP Garland Solar Storage, LLC (ID 12035)	130	
(21)	Gateway Energy Storage, LLC (ID 12037)	131	
(22)	McCoy Energy Storage, LLC (ID 12038)	131	
(23)	Blythe Energy Storage II, LLC (ID 12039)	132	
(24)	Blythe Energy Storage III, LLC (ID 12040)	132	
(25)	SP Tranquillity Solar Storage, LLC (ID 12034).....	133	
(26)	Sonoran West Solar Holdings, LLC (ID 12042).....	133	

**SCE-03: Testimony of Southern California Edison Company in Support of Its
Energy Resource Recovery Account (ERRA) Review of Operations, 2021
Chapters I - II**

Table Of Contents (Continued)

	Section	Page	Witness
(27)	SP Garland Solar Storage, LLC (ID 12035)	133	
(28)	Edwards Sanborn Storage I, LLC (ID 12036)	134	
(29)	Edwards Sanborn Storage I, LLC (ID 12036)	134	
(30)	Goleta Energy Storage, LLC (ID 12033)	135	
(31)	SP Garland Solar Storage, LLC (ID 12035)	135	
(32)	Orange County Energy Storage 2, LLC (ID 12003)	135	
(33)	Orange County Energy Storage 3, LLC (ID 12004)	136	
(34)	SP Garland Solar Storage, LLC (ID 12035)	136	
(35)	Painter Energy Storage, LLC (ID 12032)	136	
(36)	SP Tranquillity Solar Storage, LLC (ID 12034)	137	
(37)	Hecate Energy Johanna Facility, LLC (ID 12005)	137	
(38)	Hecate Energy Johanna Facility, LLC (ID 12006)	137	
(39)	Wildcat I Energy Storage LLC (ID 12025)	138	
(40)	McCoy Energy Storage, LLC (ID 12025)	138	
(41)	AES ES Alamitos, LLC (ID 12001)	138	

**SCE-03: Testimony of Southern California Edison Company in Support of Its
Energy Resource Recovery Account (ERRA) Review of Operations, 2021
Chapters I - II**

Table Of Contents (Continued)

	Section	Page	Witness
	(42) SP Tranquillity Solar Storage, LLC (ID 12034).....	139	
	(43) Johanna Energy Center, LLC (ID12002).....	139	
	f) Contract Assignment Administration	139	
	g) Affiliate Transactions and Contract Information	140	
	h) Uncontrollable Force Administration	140	
	i) Dispute Resolution and Litigation	141	
	j) Contract Terminations	141	
E.	Other Contract Administration Activities	141	
	1. COVID-19 Force Majeure Claims.....	142	
	2. CAISO System Emergency.....	144	
	3. Community Choice Aggregator Implementation and RA Compliance Agreements	145	
	4. Supplier Diversity	147	
	5. Enterprise Contract Management System and Training.....	148	
	6. Portfolio Optimization	148	
F.	Contract Collateral	149	
	1. Conventional	149	
	a) Development Security and Performance Assurance.....	149	
	2. PURPA and CHP	149	
	3. RPS	149	

**SCE-03: Testimony of Southern California Edison Company in Support of Its
Energy Resource Recovery Account (ERRA) Review of Operations, 2021
Chapters I - II**

Table Of Contents (Continued)

Section		Page	Witness
a)	Development Security.....	150	
b)	Performance Assurance	150	
4.	BESS	151	
5.	Contribution in Aid of Construction (CIAC) Tax.....	151	
G.	Contract Compliance	152	O. Heum
1.	Conventional	152	
a)	Insurance Verification.....	152	
2.	PURPA and CHP	153	
a)	Capacity Performance Programs and Verification	153	
(1)	CapDemo Program.....	153	
(2)	CapPerformance Program.....	154	
b)	Metering Energy Deliveries.....	155	
(1)	PURPA and CHP Projects within SCE's Territory	156	
(2)	Out-of-Service Territory PURPA Projects.....	158	
c)	Prescribed Dispatch	159	
d)	Protection Equipment Testing Program.....	159	
e)	QF Efficiency Monitoring Program.....	160	
f)	Scheduled Maintenance	161	
g)	Wind Operating Programs	162	
h)	Insurance Verification.....	162	
i)	Forecasting and Scheduling Accuracy.....	163	

**SCE-03: Testimony of Southern California Edison Company in Support of Its
Energy Resource Recovery Account (ERRA) Review of Operations, 2021
Chapters I - II**

Table Of Contents (Continued)

	Section	Page	Witness
3.	RPS	164	
a)	Renewable Capacity Verification	164	
b)	Metering Energy Deliveries	164	
c)	Active Monitoring	165	
(1)	Terra-Gen Dixie Valley, LLC (ID 3011/3106)	166	
d)	Western Renewable Energy Generation Information System (WREGIS)	167	
e)	RPS Insurance Verification	167	
f)	Wind Operating Programs	168	
g)	Renewable Energy Credit (REC) Retirement	168	
h)	Curtailment of Renewable Resources	170	
4.	BESS	170	
a)	BESS Performance Verifications	170	
b)	BESS Insurance Verification	171	
H.	Contract Payment Process	171	D. Cox
1.	Conventional	172	
a)	RA	172	
b)	BESS	173	
c)	DRAM	174	
d)	Gas Transactions	174	
e)	Transmission	174	
f)	Power Purchase Tolling Agreements	174	

**SCE-03: Testimony of Southern California Edison Company in Support of Its
Energy Resource Recovery Account (ERRA) Review of Operations, 2021
Chapters I - II**

Table Of Contents (Continued)

	Section	Page	Witness
	g) Power Transactions.....	175	
2.	PURPA and CHP	175	
	a) Energy Rates for PURPA and CHP Contracts	175	
	b) Capacity for PURPA and CHP Contracts.....	177	
	c) Performance Bonus – Capacity.....	177	
	d) Out of Service Territory Projects.....	178	
	e) Line Loss Factor	178	
	f) Time of Delivery (TOD) Periods.....	178	
3.	RPS	178	
	a) Out of Service Area Projects.....	179	
	b) Renewable Energy Credit (REC) Sales	179	
	c) Energy Payment Calculations	179	
	(1) Time of Delivery (TOD) Periods.....	179	
4.	Other Impacts to Payments	179	
	a) CAISO Charges	179	
	b) Scheduled Delivery Deviation Adjustments (SDD).....	180	
	c) Scheduling Coordinator Fees.....	180	
	d) Mean Absolute Error (MAE).....	180	
	e) Energy Delivery Performance Administration	180	
	f) Economic Curtailments.....	181	
	g) CAISO System Emergency.....	181	

SCE-03: Testimony of Southern California Edison Company in Support of Its Energy Resource Recovery Account (ERRA) Review of Operations, 2021 Chapters I - II

List Of Tables

Table	Page
Table I-1 Summary of 2021 Thermal Resource Incremental Bid Cost Exceptions	13
Table I-2 Background Summary of 2021 Resource Capacity and Awards.....	17
Table I-3 Summary of 2021 Day-Ahead Spot Electric Transactions (Physical and Financial)	20
Table I-4 Summary of 2021 Hour-Ahead Spot Electric Transactions (Physical and Financial)	22
Table I-5 Summary of 2021 Spot Gas Transactions	24
Table II-6 Conventional Projects Costs Recovered Through CAM/NSGBA, ERRA BA, and PABA January 1, 2021 Through December 31, 2021	34
Table II-7 SCE BTM Contract Amendments January 1, 2021, through December 31, 2021	38
Table II-8 SCE BTM Contract Consents January 1, 2021, through December 31, 2021	49
Table II-9 BTM Contracts that Terminated January 1, 2021, Through December 31, 2021	55
Table II-10 BTM Contracts that Achieved Commercial Operation January 1, 2021, Through December 31, 2021	55
Table II-11 Other Activities January 1, 2021, through December 31, 2021	56
Table II-12 New Conventional and Natural Gas Contracts January 1, 2021 Through December 31, 2021	62
Table II-13 Conventional and Gas Amendments and Letter Agreements January 1, 2021 Through December 31, 2021	65
Table II-14 Conventional and Gas Contract Consents and Consents to Assignments January 1, 2021 Through December 31, 2021	71
Table II-15 Conventional Contract Terminations January 1, 2021 Through December 31, 2021	73
Table II-16 Non-Coincident Contract Capacity Quantities and Expiration Dates for SCE's Major Inter-utility for 2021 Contracts	74
Table II-17 PURPA and CHP Contract Costs Recovered Through CAM and ERRA BA	77

SCE-03: Testimony of Southern California Edison Company in Support of Its Energy Resource Recovery Account (ERRA) Review of Operations, 2021 Chapters I - II

List Of Tables (Continued)

Table	Page
Table II-18 PURPA and CHP Contracts that Achieved Commercial Operation January 1, 2021 Through December 31, 2021	79
Table II-19 PURPA and CHP Contract Amendments and Letter Agreements January 1, 2021 Through December 31, 2021	80
Table II-20 CHP and PURPA Contract Consents and Consents to Assignments January 1, 2021 Through December 31, 2021	82
Table II-21 PURPA and CHP Uncontrollable Force Claims – Tendered or Pending January 1, 2021 through December 31, 2021	83
Table II-22 PURPA and CHP Contract Terminations January 1, 2021 Through December 31, 2021	85
Table II-23 New RPS Contracts Executed January 1, 2021 Through December 31, 2021	92
Table II-24 RPS Contract Amendments and Letter Agreements January 1, 2021 Through December 31, 2021	94
Table II-25 RPS Contract Consents and Consents to Assignments January 1, 2021 Through December 31, 2021	105
Table II-26 RPS Uncontrollable Force Claims Tendered and/or Pending January 1, 2021 Through December 31, 2021	107
Table II-27 RPS Contract Terminations January 1, 2021 Through December 31, 2021	115
Table II-28 BESS Projects that Achieved Commercial Operation January 1, 2021 through December 31, 2021	119
Table II-29 New BESS Contracts Executed, Pre-Approved or Submitted for Approval January 1, 2021 through December 31, 2021	120
Table II-30 BESS Contract Amendments and Letter Agreements January 1, 2021 through December 31, 2021	121
Table II-31 BESS Contract Consents and Consents to Assignments January 1, 2021 through December 31, 2021	140
Table II-32 BESS Contract Terminations January 1, 2021 through December 31, 2021	141
Table II-33 COVID-19 Force Majeure Claims.....	143

SCE-03: Testimony of Southern California Edison Company in Support of Its Energy Resource Recovery Account (ERRA) Review of Operations, 2021 Chapters I - II

List Of Tables (Continued)

Table	Page
Table II-34 CAISO System Emergency	145
Table II-35 CCA RA Compliance Agreements January 1, 2021 Through December 31, 2021	147
Table II-36 PURPA and CHP Indemnity Agreements January 1, 2021 through December 31, 2021.....	152
Table II-37 Projects That Failed to Submit Operation and Efficiency Data for Operating Year 2021	161
Table II-38 BESS Performance Verifications	171
Table II-39 QF Legacy Amendment Energy Pricing Options	177

1 I.

2 **LEAST-COST DISPATCH**

3 A. Introduction and Commission Standard Review

4 This section discusses SCE's compliance with least-cost dispatch (LCD) principles and
5 requirements as specified by applicable Commission orders. The fundamental design of the CAISO
6 Market Redesign and Technology Upgrade (MRTU) environment impacts how SCE "achieves" LCD.
7 In D.11-10-002 (on SCE's 2009 ERRRA Review proceeding), the Commission acknowledged this,
8 stating "[o]n April 1, 2009, the CAISO began implementation of [MRTU], which substantially changed
9 the least-cost dispatch processes of SCE and other utilities."¹ More recent Commission guidance
10 defines how SCE must demonstrate that it adhered to LCD principles, and the Commission formalized
11 that guidance in D.15-05-007.

12 1. Information in SCE's Testimony and Workpapers

13 SCE's testimony and workpapers provide detailed documentation for the Record Period,
14 as required by D.15-05-007. The testimony includes information on:

- 15 • Overview/narrative of LCD in the CAISO markets;
- 16 • Description of SCE's bidding and scheduling processes;
- 17 • Summary reports/tables documenting dispatchable thermal resource aggregated
18 annual exception rates for:
 - 19 ▪ Incremental cost bid calculations;
 - 20 ▪ Self-commitment decisions; and
 - 21 ▪ Master File data changes;
- 22 • Narratives reviewing significant strategy changes, internal software and/or process
23 changes, and the CAISO market design changes during the Record Period, including
24 documentation of SCE's review of market changes;

¹ D.11-10-002, Finding of Fact (FOF) 1.

- Background summary tables including:
 - Total capacity of the dispatchable portfolio;
 - Total dispatchable capacity lost due to planned or forced outages;
 - Total capacity of the non-dispatchable portfolio;
 - Total non-dispatchable capacity lost due to planned or forced outages; and
 - Total energy awards (dispatchable and non-dispatchable) by resource type (e.g., hydro, pumped storage, thermal), broken down by self-scheduled versus market awards; and,
- Spot market electric and natural gas transactions made by SCE.

SCE's workpapers provide other information required by the relevant decisions and fully document all key LCD-related activities as well as spot market transactions SCE made during the Record Period.² A close examination of SCE's LCD practices, or of any particular decision or energy transaction made during the Record Period, will confirm that SCE's procurement practices were consistent with SOC 4 and its LCD protocols (keeping in mind that any *ex post* analysis must appropriately consider the contemporaneous information SCE had when making *ex ante* LCD decisions).

2. The Commission's LCD Standard

In D.02-12-074, which was issued pre-MRTU, the Commission placed the following explanation of SOC 4 in the utilities' approved procurement plans:

² Dispatchable resource commitment and dispatch decisions are made by the CAISO, not SCE, although these decisions are based on the bids SCE submits to the CAISO.

1 Prudent contract administration includes administration of all contracts within the
2 terms and conditions of those contracts, to include dispatching dispatchable contracts
3 when it is most economical to do so. In administering contracts, the utilities have the
4 responsibility to dispose of economic long power and to purchase economic short
5 power in a manner that minimizes ratepayer costs. Least-cost dispatch refers to a
6 situation in which the most cost-effective mix of total resources is used, thereby
7 minimizing the cost of delivering electric services. . . . The utility bears the burden of
8 proving compliance with the standard set forth in its plan.³
9

10 In D.05-01-054, also issued pre-MRTU, the Commission affirmed that in conducting the
11 daily economic dispatch of energy, utilities must comply with SOC 4, which states:

12 The utilities shall prudently administer all contracts and generation resources and
13 dispatch the energy in a least-cost manner. Our definitions of prudent contract
14 administration and least-cost dispatch are the same as our existing standard.⁴
15

16 According to the Commission, once this definition of SOC 4 was placed in the utilities'
17 procurement plans, it became the "upfront standard" under AB 57 regarding prudent contract
18 administration and the daily dispatch of energy. As a result, the question addressed in the ERRR
19 Review proceeding regarding LCD is whether the utility has complied with this standard – that is:
20 (1) whether the utility has dispatched⁵ the dispatchable contracts and Utility-Owned Generation (UOG)
21 under its control "when it is most economical to do so;" (2) whether it has "disposed of economic long
22 power and purchased economic short power in a manner that minimizes customer costs;" and
23 (3) whether it has used "the most cost-effective mix of its total resources, thereby minimizing the cost of
24 delivering electrical services."

25 Based on past Commission guidance and the application of basic economic principles,
26 SCE bases its compliance with the LCD standard set forth in SOC 4 on the following operating
27 objectives: (1) a dispatchable resource should run only when its variable costs can be expected to be

³ D.02-12-074, Ordering Paragraph (OP) 24b. The ellipsis indicates language deleted by D.03-06-076, p. 27 and OP 16.

⁴ D.02-10-062, Conclusion of Law (COL) 11.

⁵ In this context, "SCE's dispatch" of dispatchable resources is interpreted as submitting cost-based bids to the CAISO market, with the CAISO making resource commitment and dispatch decisions based on the all market participants submit for their respective resources. SCE complies with SOC 4 by appropriately executing processes under its control (e.g., bidding its resources correctly), thus enabling the CAISO to commit the resources in a least-cost manner.

recovered from the market; (2) SCE bids its dispatchable resources [REDACTED], then CAISO commits and dispatches the resources through its market co-optimization mechanism;⁶ (3) SCE purchases power bilaterally when it anticipates doing so will reduce price risk and result in a lower cost than purchasing from the CAISO market; and (4) SCE sells surplus power in a manner that reduces customer costs.⁷ Alignment with these objectives considers that CAISO may force-commit certain resources out of economic order for grid reliability reasons (e.g., to provide voltage support, to ameliorate transmission congestion, etc.), and Resource Adequacy (RA) resources must be presented to the market for SCE to comply with the Commission's and CAISO's reliability requirements.

For resource bidding, SCE employed a strategy (discussed below) to address the cost-minimization objective set forth in SOC 4. This strategy was implemented through the actions of personnel in SCE's Energy Procurement and Management organization, specifically the Trading & Market Operations (TMO) department. In the sections below, SCE explains how its procurement processes and activities aligned with these LCD principles.

B. Overview of LCD in the CAISO Wholesale Market

The CAISO operates a market environment that determines the optimal resource mix to serve each day's demand, based on supply and demand bids that all market participants (including SCE) submit. Below is a summary of SCE's LCD-related activities in the 2021 CAISO market.

1. Supply and Demand Bidding/Scheduling

During the Record Period, SCE, as a CAISO Scheduling Coordinator (SC), submitted bids and schedules for its available generator capacity and interchange schedules to the CAISO for commitment and dispatch evaluation in the day-ahead integrated forward market (IFM) and real-time market (RTM). SCE also submitted ancillary services (AS) bids to the CAISO markets, in which the CAISO's market optimization mechanism determined how to utilize resources for energy, for AS, a

⁶ The CAISO's market co-optimization process considers reliability standards and requirements, and includes a full network model reflecting transmission constraints, producing locational prices (including loss and congestion cost components) at thousands of points across the system.

⁷ Power purchases and/or sales can be through the bilateral or CAISO markets.

combination of both, or neither, if the resources are not economic relative to other resources. This process is referred to as “co-optimization,” and results in more efficient commitment and dispatch of generating resources across the CAISO-controlled grid. SCE also submitted bids for its forecasted bundled service customer demand to the CAISO to acquire energy in the IFM.

2. Spot Market Electrical and Natural Gas Transactions

SCE used market⁸ energy transactions, when appropriate, to manage its forecast residual net short (RNS) and residual net long (RNL) CAISO⁹ energy positions prior to the CAISO IFM. SCE also managed, when appropriate, its post-IFM residual net position (RNP) due to changing supply availability or load forecast changes through the hour-ahead market and/or the CAISO RTM. SCE also made physical natural gas transactions based on its forecast of the CAISO IFM results and exceptional dispatch (ED) activity.

C. LCD Principles during the Record Period

During the Record Period, SCE complied with SOC 4 by concurrently managing all of its resources, including contracts under its control, and engaging in spot market transactions in a manner designed to reduce price risk and minimize costs to bundled service customers. In making decisions regarding supply and demand bidding, scheduling, power trading, and natural gas trading, SCE sought to balance the following goals:

- Minimize the cost of energy to SCE’s customers;
- Maximize reliability for each operating day by adhering to the Commission’s RA requirements;
- Reduce SCE’s hourly RNP prior to real-time, when appropriate;

⁸ In this context, “market” refers to electrical energy transactions executed outside of the CAISO’s IFM and includes transactions executed directly (bilaterally) with counterparties, through voice or electronic brokers (e.g., ICE Brokerage) and through exchanges (e.g., ICE Clear). Trading generally takes place between 5 a.m. and 7 a.m. PPT, Monday through Friday, excluding holidays.

⁹ SCE incorporates the electrical energy positions from SCE’s ownership share of the Palo Verde Nuclear Generating Station and through other renewable and non-renewable contracts outside of the CAISO. These energy positions are managed to minimize SCE customer costs and may include scheduling and selling the energy outside of the CAISO system and markets.

- Submit economic bids/offers and schedules to the CAISO and other control areas in accordance with the applicable area timelines and reliability protocols; and,
- Mitigate financial credit risk by ensuring that counterparties meet certain credit criteria.

D. Implementing the LCD Standard

In implementing the LCD standard, SCE evaluates the economics of its dispatchable resource portfolio before submitting bids and schedules to the CAISO. These resources include UOG and utility-contracted resources, as well as spot market transactions in the day-ahead, hour-ahead, and real-time markets.¹⁰

1. SCE's Bidding Strategy

In the CAISO environment, market participants (including SCE) submit bids and self-schedules to offer energy and AS from resources available to the grid (supply bids), and to acquire energy from the grid to serve customer demand (demand bids). SCE employed a bidding strategy with the goal of serving SCE's customers at the lowest possible cost, consistent with the Commission's intent set forth in SOC 4. SCE's strategy guided its supply and demand bidding activities during the Record Period and is described in more detail below.

a) Supply Bidding Strategy

SCE's supply bidding strategy is designed to make all dispatchable resources available to the CAISO at [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

¹⁰ As the Commission explained: "It is true that the existing scope of SOC 4 does not encompass all procurement activities. Specifically, ERRR filings review the reasonableness of contract administration and least-cost dispatch. On the other hand, forward purchase and sale transactions done months prior to the time of dispatch are considered procurement activities and as such, should be reviewed in the quarterly compliance Advice Letter filings." D.05-01-054 at p. 9.

[REDACTED]

[REDACTED]¹¹

Prior to the month (in its month-ahead RA showing), SCE designates enough RA resources to meet Commission and CAISO requirements for load-serving entities (System RA capacity equal to at least 115 percent of SCE’s forecast monthly peak demand).

For dispatchable resources, SCE’s bid prices are based on [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

During the Record Period, [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

(1) Opportunity Cost Bidding

[REDACTED]

[REDACTED]

¹¹ Uplift charges are based in part on the portion of a market participant’s demand that is served by energy supplied through the CAISO market (*i.e.*, not served by self-scheduled supply).

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[REDACTED]

(2) Dispatch Efficiency Bidding

[REDACTED]

[REDACTED]

[REDACTED]

(3) Import Bidding

Import bids are grouped into the categories discussed below.

(a) Must-Take Imports

[REDACTED]

[REDACTED]

(b) Bilaterally Transacted Energy Imports

[REDACTED]

[REDACTED]

2. Renewable Curtailment Bidding

[REDACTED]

3. Demand Bidding Strategy

In the CAISO market, SCE must submit hourly IFM bids (price and quantity) to obtain the power needed to serve SCE's forecast bundled customer demand. In 2018, SCE implemented a bidding strategy [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

1 4. Demand Response Bidding Strategy

7 5. Eastwood and Hoover Hydro Bidding Strategy

12 E. Daily LCD Process

13 SCE implements the guiding principles described above in its daily operations. LCD-related
14 processes are primarily based on load and resource forecasts, as well as forecast and actual power and
15 gas prices. These forecasts are documented in the daily resource plans and are in part based on
16 continuous monitoring of market conditions. The daily forecasting and resource planning process for
17 each operating day requires close coordination within the TMO department.

18 For each day of the Record Period, SCE prepared and utilized the daily resource plans to, among
19 other things, identify the mix of available resources in SCE's portfolio, document SCE's forecast of
20 CAISO IFM results, and estimate SCE's hourly RNP. The following discussion summarizes the
21 processes and actions by SCE personnel during the Record Period to prepare robust daily resource plans.

22 TMO's Forecasting team developed hourly short-term demand forecasts for each operating day
23 for use in creating the daily resource plan. Such demand forecasts incorporated short-term weather
24 forecasts prepared by SCE's meteorologists, in addition to weather forecasts and data obtained from
25 other meteorological data providers. The demand forecasts also included expectations of customer
26 migrations from SCE to Community Choice Aggregators, as well as expected behind-the-meter solar
27 generation.

1 TMO's Forecasting team also developed short-term wholesale power price projections using data
2 gathered from internal and external sources. The hourly price forecasts were key elements in SCE's
3 daily resource plans because they guided TMO personnel in formulating projected resource output based
4 on expected CAISO IFM results. Together with the short-term demand forecasts, the short-term price
5 forecasts were used to develop SCE's RNP forecasts, which were used in power and gas hedging
6 activities.

7 TMO personnel integrated the short-term demand forecast, short-term price forecast, and then
8 projected resource availability in the planning models to prepare daily resource plans. Each plan
9 contained the following key elements:

- 10 • Projected hourly availability of SCE's non-dispatchable resources;
- 11 • Projected hourly availability of SCE's dispatchable resources;
- 12 • Forecasted hourly electricity prices in southern California;¹²
- 13 • Forecasted natural gas prices delivered to key California locations;
- 14 • Projected economic dispatch of SCE's dispatchable resources;
- 15 • Exceptions to marginal cost bidding for SCE's dispatchable resources;
- 16 • Energy transactions executed prior to daily trading;
- 17 • Forecasted hourly demand;
- 18 • Projected hourly RNP; and,
- 19 • Projected gas requirements at each generating facility for which SCE had procurement
20 responsibility.

21
22 1. SCE Managed Its Resources in Compliance with SOC 4

23 As evidenced by the documentation provided herein and in SCE's workpapers, SCE's
24 market processes and actions throughout the Record Period enabled the CAISO to commit and dispatch

¹² At the SP-15 EZ Gen Hub, SCE's Load Aggregation Point (LAP) and at the Locational Marginal Pricing (LMP) nodes with dispatchable generation from SCE's portfolio.

SCE's resource portfolio in an economic manner, as described in SOC 4 and relevant Commission decisions interpreting SOC 4.

F. Summary Reports – Annual Exception Rates

As required by D.15-05-007, this section describes SCE's annual exception rates for dispatchable thermal resource incremental bid cost calculations, self-commitment decisions, and CAISO Master File (Resource Data Template, or RDT) changes.

1. Incremental Bid Cost Calculations

All energy bids submitted to the CAISO IFM during the Record Period are documented in SCE's confidential workpapers for Chapter II.¹³

The actual incremental bid utilized by the CAISO in the IFM - the clean bid¹⁴ - is compared to the calculated [REDACTED]

[REDACTED] During the Record Period, SCE submitted 350,293 bids¹⁵ for its dispatchable thermal resources to the CAISO, with 886 bids found to have a variance¹⁶ due to user error and 67 hours where dispatchable thermal resources were not bid into the CAISO market. SCE's confidential workpapers include detailed information on the variances and evaluation methodology.¹⁷ Table I-1 below shows the estimated cost impact.

¹³ See "Chapter II_Section E_Inc Bid Cost Variance_CONFIDENTIAL" and "Chapter II_Section E_Inc Bid Cost Variance BLYTHE_CONFIDENTIAL."

¹⁴ The clean bid is a proxy for SCE's submitted bid. A clean bid is defined as, "a valid Bid submitted by a Scheduling Coordinator that requires no modification, a Default Modified Bid, or a Generated Bid deemed to be acceptable for submission to the CAISO Market applications" (CAISO Tariff, Appendix A.)

¹⁵ "Bid" is defined as an IFM energy bid for one resource, for one hour. See Section E_Inc Bid Cost Variance Not Bid Summary_CONFIDENTIAL for details.

¹⁶ Greater than \$0.10 difference between calculated and actual submitted bids. See D.15-05-007, Appendix A.

¹⁷ See "Chapter II_Section E_Inc Bid Cost Variance_CONFIDENTIAL" and "Chapter II_Section E_Inc Bid Cost Variance BLYTHE_CONFIDENTIAL".

Table I-1
Summary of 2021 Thermal Resource Incremental Bid Cost Exceptions

Description	Variances >\$0.10 (Hours)	% of Bid Hours	Resources Not Bid (Hours)	Est. Cost Impact
CAISO System Issue	0	0.00%	48	\$ -
SCE System Issue	0	0.00%	0	\$ -
User Issue	886	0.25%	19	\$ 66,833
Totals	886	0.25%	67	\$ 66,833

2. Self-Commitment Exceptions

During the Record Period, [REDACTED]

3. Master File (RDT) Change Exceptions

During the Record Period, SCE made four Master File (RDT) changes to declare startup (SU) and minimum load (ML) costs for its dispatchable use-limited thermal resources.

The CAISO tariff provides two methodologies – “Proxy” or “Registered” – to declare resource SU/ML costs:

- Proxy cost option: The SU and/or ML costs are automatically calculated each day based on pre-defined fuel quantities for each, multiplied by an indexed gas price plus a variable operations and maintenance (VOM) adder.¹⁸ The costs thus reflect any daily natural gas price variations, and certain additional non fuel-based (*i.e.*, “fixed”)¹⁹ SU cost components that were approved by the CAISO; however, this option does not account for opportunity costs.

¹⁸ Electing the Proxy cost option also allows Market Participants to submit daily SU and/or ML cost *bids*, to the extent they are lower than the resulting CAISO-calculated costs.

¹⁹ “Fixed” SU cost is a static component that does not vary with fuel price changes, but applies only when (and every time) the resource is started. As such, it is truly a variable operating cost, as it would not be incurred but for running the resource.

- Registered cost option: The SU and/or ML costs are pre-defined as static dollar amounts for the election period.²⁰ This option does not reflect the daily natural gas price changes, but allows other non-fuel based (*e.g.*, contractual) costs to be included (within certain limits). The CAISO tariff only allows this option for new use-limited resources for the first 14 months, then the resource is required to change to a proxy cost option.

During the Record Period, [REDACTED]

[REDACTED] This benefitted customers by more effectively enabling the CAISO to dispatch the resources in a least-cost manner.

G. Market and Business Process Changes

During 2021, the CAISO implemented several market changes that have impacted how market participants interact with the CAISO market, including how bids are submitted, and how bidding requirements are monitored and incentivized. Major changes are highlighted below:

1. FERC Order 831

On February 22, 2021, the CAISO filed an amendment to its tariff to implement FERC Order 831. The amendments (1) allow certain resources to bid above the \$1,000/MWh soft bid cap up to the resource's verified cost-based incremental energy offer, (2) cap the verified cost-based incremental energy offer at the hard cap of \$2,000/MWh when calculating LMPs (locational marginal prices), (3) establish a verification process for cost-based incremental offers above \$1,000/MWh that ensures that a resource's cost-based incremental energy offer reasonably reflects that resource's actual or expected costs, (4) permit market participants to submit virtual transactions up to \$2,000/MWh, and (5) permit import and export transactions up to \$2,000/MWh. FERC approved the CAISO's proposal on April 27, 2021, and the CAISO implemented the changes on June 13, 2021.²¹

²⁰ The CAISO tariff allows SU and ML cost updates every 30 days. Elections and defined values carry forward until changed.

²¹ See http://www.caiso.com/Documents/Apr27-2021_OrderAcceptingTariffRevisions-PricingParametersImportBiddingRules-ER21-1192.pdf

1 2. Energy Storage and Distributed Energy Resource Phase 4A

2 On August 27, 2021, the CAISO filed an amendment to its tariff to implement its Energy
3 Storage and Distributed Energy Resource Phase 4A stakeholder initiative to optimize the performance of
4 storage and demand response resources and improve CAISO's markets. The CAISO proposed: (1)
5 creating a biddable state-of-charge parameter for energy storage in the Real Time Market, (2) applying
6 market power mitigation to energy storage, and (3) enabling demand response resources to specify
7 maximum daily run times. FERC approved the CAISO's proposal on October 26, 2021, and the CAISO
8 implemented the changes on November 1, 2021.²²

9 3. Hybrid Resources Phase 2A

10 On September 8, 2021, the CAISO filed an amendment to its tariff to implement its
11 Hybrid Resources Phase 2A initiative. The purpose of the amendment is to clarify market rules for
12 hybrid and co-located resources. The CAISO proposed to: (1) enhance market participation for hybrid
13 and co-located resources, and (2) allow for the use of multiple aggregate capability constraints by co-
14 located resources at a single generating facility. FERC approved the CAISO's proposal on November
15 30, 2021, and the CAISO implemented the changes on December 15, 2021.²³

16 4. Market Enhancements for Summer 2021 Readiness

17 On March 26, 2021, the CAISO filed an amendment to its tariff to reduce the risks the
18 CAISO faces due to possible energy supply shortages in summer 2021 through its Market Enhancements
19 for Summer 2021 Readiness Initiative. The CAISO proposed to (1) provide bid cost payments for
20 hourly intertie block schedules issued through HASP (Hour-Ahead Scheduling Process) that provide
21 energy during tight system conditions, (2) improve the bidding, dispatch, and pricing of RDRRs
22 (Reliability Demand Response Resource), (3) improve EIM operations and coordination, (4) price all
23 operating reserves at the energy bid cap when dispatched to provide energy in a system emergency, and

²² See <https://www.caiso.com/Documents/Oct26-2021-OrderAcceptingEnergyStorage-DistributedEnergyResources-ESDER4-ER21-2779.pdf>

²³ See <http://www.caiso.com/Documents/Nov30-2021-OrderAcceptingHybrid-Resources-and-Co-located-Resources-ER21-2853.pdf>

(5) make generation interconnection process improvements. FERC approved the CAISO's proposal on May 25, 2021, and the CAISO implemented the changes on June 15, 2021.

5. Internal Software Changes

CAISO's Energy Storage and Distributed Energy Resources Phase 3A (ESDER3A) project is a multi-phase initiative stemming back to 2019 and was initiated to allow resources to participate in the CAISO markets more efficiently, thus allowing for more robust market solutions while reducing carbon emissions. Part of the scope of the ESDER3A project was to remove the single load serving entity (LSE) requirement for DR resources and SCE's internal systems were updated to reflect this change.²⁴ The removal of the LSE component resulted in resource consolidations to the program and sub load aggregation point (SLAP) level where possible, where previously the resources were broken up by program, SLAP, or LSE. In aggregate, the number of DR Resource IDs SCE manages decreased from 120 to 42 post consolidation. The new registrations containing the updated ALOCs and data were effective 12/1/2021.

6. LCD-Related Process Changes

To ensure SCE is prepared for CAISO system emergency events that could impact reliability to its customers, an EPM Alert & Warning System was developed to provide sufficient lead time to avoid or minimize any loss of load events. The internal system is a tiered alert notification network that uses lead times to events, confidence levels of forecasts, and both SCE internal and CAISO quantitative/qualitative metrics to prepare in advance of CAISO's declaration of an emergency. The Alert system notifies relevant stakeholders to activate procedures (*e.g.* deployment of reliability resources, increases in capacity during the net peak, modification of bid strategies, etc.) prior to or during an emergency.

²⁴ The CAISO ESDER3A Initiative was effective on November 13, 2019; however, due to SCE's internal system freeze as part of its Customer Service Re-Platform project, SCE was not able to implement the system enhancements until December 2021.

H. Background Summary Tables

Table I-2 below provides annual summary data for SCE's resource portfolio broken down by dispatchable and non-dispatchable resources including capacity,²⁵ unavailable capacity,²⁶ day-ahead self-schedule (SS) awards, and day-ahead market awards. The CAISO reports market awards for day-ahead exceptional dispatches and the charging of energy storage resources as self-schedules (SS).

Table I-2
Background Summary of 2021 Resource Capacity and Awards

Dispatchable	Capacity (MWh)	Unavailable Capacity (MWh)	DA SS Awards (MWh)	DA Market Awards (MWh)
Thermal	44,765,768			
Hydro	9,897,486			
Pump Storage	1,752,000			
Energy Storage	59,772,140			
Totals	116,187,394			

Non-Dispatchable	Capacity (MWh)	Unavailable Capacity (MWh)	DA SS Awards (MWh)	DA Market Awards (MWh)
Other	7,530,239			
Renewable	68,964,781			
Nuclear	5,562,600			
Hydro	1,150,670			
Totals	83,208,290			

I. Demand Response Resources

During the Record Period, all of SCE's economically triggered DR resources were available for CAISO market dispatch. PDRs and RDRRs²⁷ represented approximately 1,388 MW of integrated capacity in September 2021.²⁸ SCE's confidential workpapers include detailed information on program

²⁵ "Capacity" is calculated as the aggregate of the applicable resources' maximum capacity ratings multiplied by the number of hours during the Record Period each resource was under SCE control.

²⁶ "Unavailable capacity" is defined as zero availability (*i.e.*, excludes partial de-rates) for the applicable resources.

²⁷ PDR includes customers in the Capacity Bidding Program (CBP) and Local Capacity Requirements (LCR) DR contracts. RDRR includes customers in the Base Interruptible Program (BIP), Agricultural Pumping Interruptible (API), Summer Discount Plan (SDP) and Smart Energy Program (SEP).

²⁸ Integrated MW vary by month, due to program availability and contracts coming on or off line.

parameters, dispatch,²⁹ opportunity cost methodology (when applicable), dispatch exceptions, and estimated cost impacts.

J. SCE's Market Purchases and Sales

The CAISO determines which resources will be dispatched and ensures that physical supply and demand is matched (cleared) through its market operations. SCE's trading activities focus on managing the physical and financial risks associated with SCE's RNP. Transactions can be for physical or financial products, as both serve to hedge against the unknown IFM price at the time of the trade.

The clearing process that takes place in the IFM, where the difference between a market participant's awarded supply and demand (*i.e.*, the RNP) is cleared at the IFM price, effectively equaling SCE's IFM RNP.

During the Record Period, SCE participated in the non-CAISO market (trading physical and financial electricity products) in order to diversify its exposure. For example, [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] Furthermore, SCE is still required to manage open positions outside the CAISO system with physical electricity transactions.

As the IFM will usually clear all of SCE's RNP, SCE's Energy Trading team does not have the objective of reducing the CAISO-delivered RNP to (or near) zero; rather, the objective is price-risk mitigation. For example, [REDACTED]

[REDACTED]

[REDACTED]

²⁹ RDRR includes provisions for SCE's Grid Control Center to issue reliability-based dispatches, which are considered outside the scope of LCD and thus not included in this discussion.

1 1. Day-Ahead Transaction Summary

2 The majority (99 percent) of the day-ahead transactions were standard on-peak and off-
3 peak products. However, as discussed above, SCE also relied on the IFM to transact energy in order to
4 manage the RNP in its price-risk minimization efforts. SCE's Record Period Day-Ahead purchases and
5 sales are shown in Table I-3 below.

Table I-3
Summary of 2021 Day-Ahead Spot Electric Transactions
(Physical and Financial)

Deal Type	Annual	
	Energy (GWh)	Number of Deals
<u>Broker/Exchange Purchases</u>		
Standard On-Peak	3,373.26	257
Standard Off-Peak	46.61	19
Other Non-Standard Products	79.60	23
Subtotal Broker/Exchange	3,499.47	299
<u>Bilateral Purchases</u>		
Standard On-Peak	42.33	2
Standard Off-Peak	0.00	0
Other Non-Standard Products	0.00	0
Subtotal Bilateral	42.33	2
Total Purchased	3,541.80	301
<u>Broker/Exchange Sales</u>		
Standard On-Peak	3.19	8
Standard Off-Peak	2.40	6
Other Non-Standard Products	0.00	0
Subtotal Broker/Exchange	5.59	14
<u>Bilateral Sales</u>		
Standard On-Peak	0.40	1
Standard Off-Peak	0.00	0
Other Non-Standard Products	6.70	3
Subtotal Bilateral	7.10	4
Total Sold	12.69	18
Total Broker/Exchange	3,505.06	313
Total Bilateral	49.43	6
Total Transacted	3,554.49	319

2. SCE's Day-Ahead Transactions Were Competitive and in Compliance with SOC 4

As discussed above, SCE's day-ahead purchase and sale transactions during the Record Period were conducted via brokers/exchanges and bilateral processes in accordance with its LCD transaction protocols and SCE's Commission-approved BPP. Moderating SCE's potential exposure to

1 the CAISO's RTM was a consideration in SCE's determination of the energy quantities to potentially be
2 transacted in the hour-ahead market. In addition, the criteria previously discussed regarding day-ahead
3 transactions also applied to SCE's transaction decisions in the hour-ahead market.

4 Unlike the day-ahead spot market, which usually has many potential creditworthy
5 counterparties who trade standard and non-standard on-peak and off-peak products, the hour-ahead spot
6 market is usually far less liquid, with a low number of potential creditworthy counterparties.

7 The IFM clears most open positions in the day-ahead timeframe down to the hourly level,
8 significantly reducing the amount of potential energy to transact in the hour-ahead markets. In general,
9 low liquidity associated with hour-ahead trading is due to the following reasons:

- 10 ● The IFM clearing most open positions for most market participants, prior to real-time;
- 11 ● Many non-load-serving market participants (*e.g.*, banks and hedge funds, etc.) close
12 out their positions prior to the hour-ahead market;
- 13 ● The products transacted are for non-standard deliveries, typically for only up to a few
14 hours on a given day; and,
- 15 ● Given SCE's estimated hour-ahead RNP is usually determined just a few hours
16 before, it is often difficult to find creditworthy counterparties whose energy positions can offset SCE's
17 energy positions.

18 SCE followed SOC 4 in its hour-ahead transacting during the Record Period by
19 appropriately reducing its RNP, when feasible, through competitively-priced sales or purchases. This
20 compliance can be confirmed by understanding the market conditions that existed at the time of a given
21 transaction and reviewing SCE's daily resource plans.³⁰

22 3. Hour-Ahead Transaction Summary

23 Table I-4 below is a summary of SCE's hour-ahead purchases and sales during the
24 Record Period.

³⁰ SCE provides this information to the Commission through the Quarterly Compliance Report (QCR) process.

Table I-4
Summary of 2021 Hour-Ahead Spot Electric Transactions
(Physical and Financial)

Deal Type	Annual	
	Energy (GWh)	Number of Deals
Broker/Exchange Purchases	0.00	0
Bilateral Purchases	0.00	0
Total Purchased	0.00	0
Broker/Exchange Sales	0.00	0
Bilateral Sales	0.08	
Total Sold	0.08	2
Total Broker/Exchange	0.00	0
Total Bilateral	0.08	2
Total Transacted	0.08	2

4. SCE's Hour-Ahead Transactions Were Competitive and in Compliance with SOC 4

SCE's hour-ahead transactions during the Record Period were conducted in accordance with its LCD transaction protocols. In the absence of reliable price indices for the hour-ahead market (which, if available, would undoubtedly show a range of reported prices for each hour), SCE's price surveys are the best indicators available for hour-ahead market prices for the various products, locations, and market conditions.

5. Gas Procurement Supporting LCD

During the Record Period, SCE transacted, transported, stored, and hedged natural gas supplies in conjunction with SCE gas agreements. Only the short-term (*i.e.*, daily spot and intra-day) gas transactions that were executed in support of dispatchable resources are reviewed in this ERRR Review proceeding; SCE's long-term transactions are reviewed in its QCR submissions.

SCE's overall objective in providing gas supplies under the agreements³¹ for which it was responsible during the Record Period was to minimize costs, while ensuring operational reliability and

³¹ Relevant information regarding gas agreements is discussed in Chapter VIII.

1 flexibility to respond to continuously-changing generation requirements of SCE's resource portfolio, as
2 dictated by LCD requirements. During October through December of the Record Year, SCE utilized
3 Backbone Transportation Service (BTS) to diversify supply receipt points and hedge gas price volatility.

4 To cost-effectively manage SCE's overall physical gas position, SCE's gas trading team
5 reviewed the daily resource plan, market fundamentals, pipeline conditions, and gas imbalance account
6 to determine the quantity of day-ahead gas needed to meet SCE's gas requirements. The traders
7 purchased the required physical gas volumes utilizing a combination of daily index and fixed priced
8 transactions, daily index call options, and baseload supply arrangements. Daily index and fixed price
9 transactions are entered into bilaterally or via brokers and electronic exchanges (*e.g.* ICE). Daily index
10 call options are set up as term deals (monthly) with the right to purchase gas up to the maximum volume
11 on a daily basis, at a daily index price. Daily index call options allow SCE to secure reliable supply on a
12 day ahead basis; while baseload supply arrangements provide SCE with consistent gas supply volumes
13 across the month. Because the forecasted day-ahead gas requirements must be purchased before the
14 CAISO's daily IFM results are published, SCE utilizes the intra-day and secondary imbalance gas
15 markets to transact gas volumes due to unexpected IFM results or intra-day generation schedule
16 changes.

17 6. Gas Transaction Summary

18 Table I-5, below, is a summary of the daily spot and intra-day gas transactions during the
19 Record Period. A portion of SCE's gas purchases were daily index call options which were set up as
20 term deals; as such, their volumes are not included here. Please refer to Chapter VIII for additional
21 information regarding gas transactions.

Table I-5
Summary of 2021 Spot Gas Transactions

Deal Type	Annual	
	Volume (Billion BTU)	Number of Deals
Broker/Exchange Purchases	309,350	6,962
Bilateral Purchases	22,824	595
Total Purchased	332,174	7557
Broker/Exchange Sales	7,580	774
Bilateral Sales	578	64
Total Sold	8,157	838
Total Broker/Exchange	316,930	7,736
Total Bilateral	23,402	659
Total Transacted	340,332	8,395

7. SCE's Spot Gas Transactions Were Competitive and in Compliance with SOC 4

During the Record Period, all of SCE's spot gas transactions were at prices competitive with spot gas index prices published in recognized surveys. Accordingly, these transactions complied with SOC 4.

K. SCE's Spot Electric and Gas Transactions Met LCD Compliance Requirements

As evidenced by the foregoing discussion and the documentation provided in SCE's workpapers, SCE's electric and gas transactions and processes minimized costs to SCE's customers throughout the Record Period.

L. Conclusion

During the Record Period, SCE consistently followed prudent procurement and bidding processes and practices to satisfy SOC 4. As evidenced by this testimony and the supporting workpapers, SCE also provided qualitative and quantitative documentation that its actions met the Commission's LCD Compliance Standard, and this showing complies with the requirements established in D.15-05-007. Accordingly, the Commission should find that SCE's LCD-related activities during the Record Period were reasonable and in compliance with the applicable Commission standards.

II.

CONTRACT ADMINISTRATION AND COSTS

A. Introduction

The Commission provided guidance on what it expects from the utility when reviewing energy contract administration and on the scope and nature of such reviews. As used in this chapter, the term “contract administration” means activities implementing the exercise of contract rights and performing contract obligations after contract execution by SCE. The administration and management of these contracts is explained throughout this chapter based upon the following resource categories:

(1) Behind the Meter (BTM) contracts; (2) Conventional and Natural Gas contracts (including Demand Response Auction Mechanism (DRAM)); (3) Public Utility Regulatory Policy Act (PURPA) and Combined Heat and Power (CHP) contracts; (4) Renewables Portfolio Standard (RPS) contracts; and, (5) Battery Energy Storage System(s) (BESS) contracts.

1. Behind-The-Meter Contracts

SCE executes and administers BTM contracts, which are contracts for resources sited on the customer side of the meter, with the objective of reducing onsite load (*i.e.*, there is no export energy). BTM contracts are entered into under the procurement authority granted to SCE through its Commission-approved procurement plans including the 2012 Long Term Procurement Plan (LTPP) proceeding (Tracks 1 and 4) and other RFOs. The administration for BTM contracts is managed by SCE’s Customer Program & Services (CP&S) unit and is discussed separately from the Conventional, PURPA/CHP, RPS, or BESS sections of this chapter.

2. Conventional and Natural Gas Contracts

“Conventional energy contracts” are contracts with, or related to, non-CHP, fossil-fired, thermal resources including tolling agreements or Power Purchase Agreements (PPAs), physical or financial structured commodity transactions (*e.g.*, commodity transactions other than trades), contracts for fuel or electricity transportation, resource adequacy (RA) contracts, or demand response resource purchase agreements (RPAs), and contracts that do not fit exclusively within BTM, PURPA, CHP, RPS

1 or BESS. SCE executed conventional contracts either prior to the passage of AB 57,³² after the passage
2 of AB 57³³ under the procurement authority granted to SCE through its then-applicable Commission-
3 approved procurement plan, through various SCE RFOs, through Commission-approved DRAM
4 solicitations,³⁴ or through bilateral transactions outside of the Commission-approved procurement plan
5 for which SCE sought separate upfront approval from the Commission. In addition, SCE has Master
6 Enabling Agreements under which power, natural gas, resource adequacy capacity, transmission,
7 emissions, and financial hedging transactions (most short-term),³⁵ are executed under SCE's
8 Commission-approved procurement plan.

9 3. PURPA and CHP Contracts

10 SCE also administers PPAs entered under the Commission's implementation of
11 PURPA.³⁶ The generating facilities subject to these PPAs are referred to as Qualifying Facilities (QFs)
12 within the meaning of PURPA and consist of either small power producers fueled by renewable
13 resources, or cogeneration facilities as defined in PURPA. Most PPAs are "standard offer" contracts
14 approved by the Commission, including: Standard Offer 1 (SO1); Standard Offer 2 (SO2); Standard
15 Offer 3 (SO3); and Interim Standard Offer 4 (ISO4 or SO4) contracts. In addition, SCE has signed
16 "nonstandard" or negotiated (NEG) contracts with QFs, usually based on a standard offer, which have
17 been approved by the Commission.

18 Since November 2011, SCE administers PPAs entered into under the CHP Settlement
19 adopted by the Commission in D.10-12-035. The CHP Settlement developed a State CHP Program with
20 the intent of transitioning from the prior PURPA program to a market-based, state-administered program
21 for CHP projects above 20 MW. This program is governed by a set of provisions called the CHP

³² Inter-utility contracts that SCE entered into with other utilities prior to re-entering the procurement role on behalf of bundled service customers on January 1, 2003 are often referred to as legacy agreements.

³³ New transactions are generally reviewed in SCE's QCR advice letter filings or through a separate advice letter or application to the Commission for pre-approval.

³⁴ In accordance with D.19-12-040 and D.19-07-009.

³⁵ SCE considers short-term transactions to be those with delivery terms up to and including one quarter in duration and up to one quarter forward.

³⁶ Public Law No. 95-617 (Nov. 9, 1978), 92 Stat. 3117, *available at* <https://www.gpo.gov/fdsys/pkg/STATUTE-92/pdf/STATUTE-92-Pg3117.pdf>.

1 Settlement Term Sheet. One condition precedent to implementing the CHP Settlement was that the
2 FERC terminate the IOUs' PURPA must-take obligation pursuant to §210(m), as modified by the
3 Energy Policy Act of 2005,³⁷ for QFs above 20 MW. On June 16, 2011, the FERC granted the
4 California IOUs §210(m) application to terminate the PURPA must-take obligation for QFs above 20
5 MW.³⁸

6 The CHP Settlement provided a path for CHP resources above 20 MW to obtain PPAs in
7 the absence of the IOUs' PURPA must-take obligation and established a PURPA QF Standard Offer
8 Contract (QF SOC) for QFs 20 MW or less. The CHP Settlement created market-based agreements for
9 CHP projects. One agreement is a Standard PPA signed under the CHP Settlement's RFO PPA.
10 Bilateral negotiations are another, less common procurement process for CHP. These PPAs are known
11 as CHP Bilateral PPAs. These CHP RFO and CHP Bilateral PPA contracts are not PURPA contracts
12 but rather a result of a collaborative effort between the IOUs and the CHP parties through the CHP
13 Settlement. Additionally, qualifying CHP projects of 20 MW or less are eligible to execute a tariff
14 contract, at any time, pursuant to AB 1613.³⁹ Similar to the QF SOC, the AB 1613 program and its
15 associated contracts are administered per the requirements of PURPA, which remains in effect in
16 California for QFs of 20 MW or less.⁴⁰

17 4. RPS Contracts

18 SCE executes and administers PPAs to implement California's RPS, which became
19 effective January 1, 2003.⁴¹ Initial RPS legislation (SB 1078 and SB 107) required certain LSEs,
20 including the IOUs, to increase procurement from eligible renewable resources (ERRs), as defined in the

³⁷ Public Law No. 109-58 (Aug. 8, 2005), 119 Stat. 594, available at <https://www.gpo.gov/fdsys/pkg/PLAW-109publ58/pdf/PLAW-109publ58.pdf>.

³⁸ 135 FERC ¶ 61,234.

³⁹ Assembly Bill 1613 (Blakeslee 2007) and amended by Assembly Bill 2791 (Blakeslee 2008) directed the CEC, the CPUC, and the CARB to implement the Waste Heat and Carbon Emissions Reduction Act. The Act is designed to encourage the development of new CHP systems in California with a generating capacity of not more than 20 MW. *See also* D. 09-12-042 (as modified by D.10-04-055, D.10-12-055 and D.11-04-033) and Resolution E-4424 for approved contract form and program specifics.

⁴⁰ Adopted in D.09-12-042.

⁴¹ *See* Pub. Util. Code §399.11, et. seq.

1 legislation, by at least 1 percent of annual sales per year, so that 20 percent of retail sales are served
2 from ERRs by 2010.⁴² In 2011, SB X1-2 expanded the RPS to 33 percent by 2020.⁴³ In September
3 2015, SB 350 further expanded the RPS requirement to 50 percent by 2030. In September 2018, SB 100
4 expanded the RPS requirement to 50 percent by 2026, 60 percent by 2030 and established a state policy
5 that 100 percent of retail sales of electricity to California end-use customers come from eligible
6 renewable resources and zero-carbon resources by 2045.⁴⁴

7 SCE has an excess inventory of renewable energy credits (RECs). As such, SCE has
8 entered into REC sales agreements under the Edison Electric Institute Master Enabling Agreement
9 executed under SCE's Commission-approved RPS procurement plan to provide value to its customers.

10 5. BESS Contracts

11 SCE administers PPAs with BESS projects procured in various Commission-approved
12 solicitations, including all-source, preferred resources, local capacity reliability, or through bilateral
13 transactions. Initial legislation in AB 2514 (Stats. 2010, Ch. 469) required the Commission to determine
14 appropriate targets, if any, for each load-serving entity to procure viable and cost-effective BESS.⁴⁵
15 Rulemaking (R.)10-12-007 was opened to implement AB 2514 and was adopted by the Commission on
16 October 17, 2013 in D.13-10-040. SCE's share of the initial 1,325 MW target was 580 MW, divided
17 into biennial procurement targets in 2014, 2016, 2018, and 2020, managed through the Energy Storage
18 RFOs. On March 2, 2020, SCE demonstrated in A.20-03-002 to the Commission that it reached its
19 procurement target of BESS in its 2018 biennial procurement cycle with a total eligible procurement of
20 609.08 MW.

21 The policy objectives of AB 2514 to transform the energy storage market and overcome
22 barriers for increased adoption of BESS were realized. SCE's procurement demonstrated that battery

⁴² See Pub. Util. Code § 399.15, et. seq.

⁴³ Senate Bill X1-2, available at http://www.leginfo.ca.gov/pub/11-12/bill/sen/sb_0001-0050/sbx1_2_bill_20110412_chaptered.pdf. Additionally, this bill eliminated the 1 percent per year requirement in the previous RPS legislation.

⁴⁴ Senate Bill SB100, available at https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201720180SB100.

⁴⁵ Cal. Pub. Util. Code § 2836 et seq.

energy storage systems were cost-competitive not only on their own merits, but also in instances when valued head-to-head against other technology types. As California continues its transition to a clean energy future, battery energy storage systems will be an essential resource for keeping the state's grid safe, reliable, and affordable.

B. Safety

1. BTM Contract Development Project Monitoring and Safety

SCE is strongly committed to safety in all aspects of its business. Consistent with SCE's focus on safety, BTM contracts require that counterparty (Seller) must safely construct and operate their projects and comply with applicable safety regulations and standards. The contracts also require that the Seller provide SCE a report from an independent engineer certifying that the Seller has a written plan for the safe construction and operation of the project prior to commencement of any construction activities on the project site.

For the BTM projects interconnecting to SCE's grid, safety is addressed as part of Rule 21 generator's interconnection process, which requires testing for safety and reliability of the generation and interconnection facilities. Sellers may commence deliveries under the contract only after certain criteria have been met, including confirmation of completing safety testing and issuance of a Permission to Operate letter from SCE's interconnection department. Additionally, local, state, and federal agencies with review and approval authority over the projects are charged with enforcing safety, environmental, and other regulations (SCE requires proof from the Authority Having Jurisdiction – city, county or state officials, as applicable – that the installation and planned operation of the facilities comply with such regulations prior to issuing the Permission to Operate letter).

2. Non-BTM Contract Administration Safety Practices

Consistent with SCE's strong commitment to safety in all aspects of its business, SCE hold the Seller responsible for the safe construction and operation of their generating facilities and compliance with all safety regulations. SCE has taken several steps to address those issues over which it has the most visibility and control – the delivery of electricity products to SCE in a reliable, safe, and operationally sound manner.

1 Consistent with this focus, SCE includes a provision in many of its contracts providing
2 that prior to commencement of any construction activities on the project site, the Seller must provide to
3 SCE a report from an independent engineer certifying that the Seller has a written plan for the safe
4 construction and operation of the generating facility, in accordance with Prudent Electrical Practices.

5 All of SCE's PPAs provide that the Seller must operate the generating facility in
6 accordance with Prudent Electrical Practices. Further, these provisions specifically require that all
7 Sellers take reasonable steps to ensure that:

- 8 a) Equipment, materials, resources, and supplies, including spare parts inventories, are
9 available to meet the generating facility's needs;
- 10 b) Sufficient operating personnel are available at all times and are adequately experienced,
11 trained, and licensed as necessary to operate the generating facility properly and
12 efficiently, and are capable of responding to reasonably foreseeable emergency
13 conditions at the generating facility and emergencies whether caused by events on or off
14 the project site;
- 15 c) Preventive, routine, and non-routine maintenance and repairs are performed on a basis
16 that ensures reliable, long term and safe operation of the generating facility, and are
17 performed by knowledgeable, trained, and experienced personnel utilizing proper
18 equipment and tools;
- 19 d) Appropriate monitoring and testing are performed to ensure equipment is functioning as
20 designed;
- 21 e) Equipment is not operated in a reckless manner, in violation of manufacturer's guidelines
22 or in a manner unsafe to workers, the general public, the Transmission Provider's electric
23 system or contrary to environmental laws, permits or regulations or without regard to
24 defined limitations such as flood conditions, safety inspection requirements, operating
25 voltage, current, reactive power loading, frequency, rotational speed, polarity,
26 synchronization, and control system limits; and,

1 f) Equipment and components are designed and manufactured to meet or exceed the
2 standard of durability generally used for electric generating facilities operating in the
3 Western United States and will function properly over the full range of ambient
4 temperature and weather conditions reasonably expected to occur at the project site under
5 both normal and emergency conditions.

6 SCE Energy Contract Managers and members from SCE's Contract Compliance and
7 Technical Services group monitor the development of counterparty energy projects, from contract
8 execution throughout the term of the PPA. Typically, a contract requires the Seller to provide written
9 progress reports on their project's development status to SCE on a monthly or quarterly basis until
10 Commercial Operation is achieved. As part of these progress reports, generators must provide the status
11 of construction activities, including Occupational Health and Safety Administration (OSHA) recordable
12 and work stoppage information. The assigned contract managers and compliance team members review
13 the written progress reports, conduct conference calls with counterparty personnel, and conduct site
14 visits to ensure that SCE is consistently up-to-date regarding the status of each project, along with any
15 associated issues that impact the project. Prior to a project achieving Commercial Operation, SCE
16 consistently reviews and tracks development activities, including site control, permitting, financing,
17 construction, and safety.

18 During the onboarding process of bringing a project to commercial operation, Engineers
19 from SCE's Contract Compliance and Technical Services group conduct site visits to verify that the
20 facility has been built to the specifications referenced in the contract. Prior to the site visit, an SCE
21 Engineer contacts the counterparty to discuss any safety hazards unique to the facility such as dangerous
22 wildlife, abnormal noise issues, dangerous access roads, etc., and assess the minimum personal
23 protective equipment (PPE) required for the site visit. The SCE Engineer then reviews a technology-
24 specific hazard assessment developed by the Engineers and safety professionals from within SCE. This

1 review prepares the Engineer for the potential hazards associated with each of the generation
2 technologies and the required PPE⁴⁶ before the site visit.

3 Upon arriving at the site, the SCE Engineer and any other SCE personnel meet with the
4 site representative(s) and conduct a Safety Tailboard. During this tailboard, participants discuss the
5 planned activities and all safety considerations by using a checklist developed by SCE. The checklist
6 includes, *inter alia*, personal protective equipment, communication protocols, emergency response,
7 location of safety/first aid equipment, and location of nearest emergency room. The site contact will
8 also perform various safety trainings or reminders depending on whether the site is still under
9 construction or if control of the project has transferred to an O&M provider. In all cases, conducting the
10 Safety Tailboard prior to the inspection ensures SCE and facility personnel keep safety top of mind
11 during all site visits.

12 For procurement contracts with third-party generators, local, state, and federal agencies
13 with review and approval authority over the generation facilities are charged with enforcing safety,
14 environmental and other regulations for the project, including decommissioning. Safety is also
15 addressed as part of a generator's interconnection process, which requires testing for safety and
16 reliability of the interconnected generation. SCE declares that a facility has commenced deliveries
17 under the contract only after certain criteria has been met, including that the interconnecting utility and
18 the CAISO have concluded such testing and given permission to commence Commercial Operation.

19 C. Authorization for Recovery of Contract Expenses

20 The California Public Utilities Code, Commission decisions, and approved advice letters provide
21 for recovery of the costs associated with SCE's procurement contracts during the term of those
22 agreements. Pursuant to D.02-10-062, SCE submitted Advice 1665-E to implement the ERRRA BA and
23 allow SCE to debit and recover its net purchased power expenses,⁴⁷ including applicable energy contract

⁴⁶ The SCE Engineer maintains an inventory of PPE covering all types of generating facilities. The inventory is used to outfit, as needed, for site visits and also to replenish "site visit kits" containing a standard set of PPE provided to employees that may engage in site visits.

⁴⁷ Purchased power expenses include costs associated with renewable contracts, inter-utility contracts, bilateral contracts, ancillary services, uplift charges, and residual net short and net long procurement activities.

costs, to the ERRA BA for cost recovery. In addition, D.02-12-074 authorized cost recovery for the reasonable costs associated with administering and managing SCE's energy contracts.⁴⁸

In D.06-07-029, as modified by D.11-05-005, the Commission adopted a cost allocation methodology (CAM) to allocate the benefits and costs of new generation to all benefiting customers SCE's service territory. Specifically, the Commission allowed the IOUs to recover "net capacity costs" for certain contracts from all bundled, Direct Access (DA), and Community Choice Aggregation (CCA) customers through the CAM.

In D.07-09-044, the Commission authorized SCE to establish a balancing account to record costs and benefits associated with new generation resources. SCE established the New System Generation Balancing Account (NSGBA)⁴⁹ to track and recover the net costs of the new generation resources from all benefiting customers (including bundled service, DA, and CCA customers), while continuing to record all other costs associated with the energy contracts in the ERRA BA. Since only the net capacity costs of these resources are recovered through the CAM (*i.e.*, NSGBA), sometimes a contract has a portion of its costs recovered through the CAM and a portion of its costs recovered through the ERRA BA or the PABA.

Pursuant to D.18-10-019, SCE filed Advice 3914-E to establish the Portfolio Allocation Balancing Account (PABA),⁵⁰ with subaccounts for each vintaged portfolio, to record the costs, market revenues, actual retained RA and RPS values, and billed customer revenues associated with its Competition Transition Charge (CTC) and Power Charge Indifference Adjustment (PCIA) eligible resources. The establishment of the PABA moved recovery of certain procurement contracts out of the ERRA BA and into the PABA.

During the Record Period, the following conventional projects listed below in Table II-6, have costs recovered through CAM/NSGBA, the ERRA BA, and/or the PABA.

⁴⁸ See D.02-12-074 and Pub. Util. Code Section 454.5(d)(2).

⁴⁹ The NSGBA is discussed in Chapter IV of this ERRA Application. Chapter IV discusses cost recovery for procurement activities through ERRA.

⁵⁰ Advice 3914-E was approved by the Commission's Energy Division with an effective date of January 1, 2019.

Table II-6
Conventional Projects Costs Recovered Through CAM/NSGBA, ERRA BA, and PABA
January 1, 2021 Through December 31, 2021

	<u>Project</u>	<u>CAM Authorization</u>	<u>Contract Type</u>
1	Barre Peaker	A. 07-12-029/D.09-03-031	UOG[1]
2	Center Peaker	A. 07-12-029/D.09-03-031	UOG
3	Grapeland Peaker	A. 07-12-029/D.09-03-031	UOG
4	Mira Loma Peaker	A. 07-12-029/D.09-03-031	UOG
5	McGrath Peaker	A. 12-12-028/D.14-06-043	UOG
6	EGT Grapeland	A. 17-03-020/D.18-06-009	UOG[2]
7	EGT Center	A. 17-03-020/D.18-06-009	UOG[2]
8	Mira Loma A	A. 17-03-020/D.18-06-009	Energy Storage
9	Mira Loma B	A. 17-03-020/D.18-06-009	Energy Storage
10	Delano Energy Center, LLC	A. 08-04-011/D.08-09-041	Toll/RA
11	Walnut Creek Energy, LLC	A. 08-04-011/D.08-09-041	Toll/RA
12	CPV Sentinel, LLC	A. 08-04-011/D.08-04-011/D.08-09-041	Toll/RA
13	El Segundo Energy Center, LLC	A. 08-04-011/D.08-09-041	Toll/RA
14	AltaGas Pomona Energy Storage, Inc.	AL 3455/Res. E-4804	RA
15	PPA Grand Johanna LLC	AL 3455/Res. E-4804	RA
16	Sycamore Cogeneration Company	AL 2784/Res. E-4555	Toll/RA
17	O.L.S. Energy - Chino	AL 3485/Res. E-4860	Toll/RA
18	AES Huntington Beach Energy, LLC	D.15-11-041	RA
19	AES Alamitos Energy, LLC	D.15-11-041	RA
20	Stanton Energy Reliability Center, LLC	D.15-11-041	RA
21	Orni 34 LLC	AL 4002-E/Res. E-5033	RA
22	Ventura Energy Storage, LLC	A. 19-04-016/D.19-12-055	RA
23	AES ES Alamitos, LLC	D.15-11-041	RA
24	Silverstrand Grid, LLC	AL 4002-E/Res. E-5033	RA
[1] Utility owned generation (UOG) has no power purchase contract, but all bundled customers benefit through offered products and services provided to the CAISO marketplace.			
[2] Battery storage projects integrated with Grapeland and Center Peakers resulting in Hybrid Electric Gas Turbine (EGT) Grapeland and EGT Center.			

1. The Standard of Review for Cost Recovery

In a series of decisions, the Commission explained the standards it would apply to review the utilities' administration of contracts in the utility supply portfolio.⁵¹ In this ERRA Review proceeding, SCE provides evidence that its contracts were administered in accordance with the terms of

⁵¹ See D.02-10-062, D.02-12-069, D.02-12-074, D.03-06-067, D.03-06-074, D.03-06-076, D.03-12-003, and D.05-01-054.

1 the contracts and that any contract disputes that arose were, or are in the process of being, reasonably
2 resolved.⁵² In this chapter, SCE demonstrates that during the Record Period it administered all contracts
3 for which it has responsibility in a manner consistent with these standards and that its contract
4 administration activities should therefore be found prudent and reasonable. The Commission's review
5 of purchase and sale transactions, including the type of product purchased or sold, together with the
6 bidding or other transaction procedure followed, and the contracts' terms and prices, is conducted in
7 SCE's QCR advice letter filings⁵³ or through separate advice letters or applications.

8 D. Summary of Contract Administration and Management Processes

9 SCE's goal is to administer its contracts through a balanced and fair process to maximize
10 benefits to customers at the lowest achievable cost. Certain contract transactions provide not only
11 commodity and price benefits, but also non-price benefits such as dispatchability or favorable terms and
12 conditions.

13 The contract administration process consists of several activities including: (1) exercising
14 contract options in a prudent and economic manner; (2) verifying that the counterparty is complying
15 with the contract terms, including credit support and collateral requirements; (3) verifying that billing
16 and payments are accurate and consistent with the terms of the contract; (4) reviewing interruptions of
17 service and *force majeure* events; (5) renegotiating contract provisions as necessary due to changed
18 circumstances or conditions; (6) resolving disputes; (7) purchasing natural gas fuel at certain times and
19 under certain types of contracts; and, (8) assigning, amending, renewing, or terminating contracts.

20 After execution, contracts are assigned to a SCE contract manager who carries out the
21 management and administration of that contract and all activities related to it. While the contract
22 manager ensures comprehensive oversight and takes the lead in communicating with the counterparty,
23 he or she will seek assistance from other SCE groups with specialized functions. These groups include,
24 *inter alia*, Portfolio Planning and Analysis, Trading and Market Operations, Settlements, Regulatory

⁵² Pub. Util. Code Section 454.5(d)(2).

⁵³ D.05-01-054, pp. 7-10.

Affairs, Law, Credit Risk, Risk Operations & Collateral Management, and Contract Compliance and Technical Services, as needed.

When SCE determines that a counterparty does not comply with the terms or conditions of an agreement, or that differences exist between SCE and a counterparty over interpretation of the contract terms or conditions, SCE initiates discussions to resolve the non-compliance or the difference in interpretation and seeks to recover the lost value, if any. When differences with a counterparty cannot be resolved by an amendment or otherwise, SCE or the counterparty initiates the appropriate dispute resolution process as described in the applicable agreement (typically mediation and then arbitration).

The administration and management of these contracts is explained below and is separated by the following contracts: (1) BTM contracts; (2) conventional and natural gas contracts; (3) PURPA and CHP contracts; (4) RPS contracts; and (5) BESS contracts.

1. Behind-The-Meter

The BTM contracts addressed in this section are for resources procured to meet Local Reliability Requirements pursuant to the 2012 LTPP proceeding Tracks 1 and 4, to support the Preferred Resources Pilot, system reliability needs resulting from the 2021-2023 Integrated Resource Planning proceeding and to meet reliability needs resulting from the limited operations of the Aliso Canyon gas storage field.

a) Contract Administration

This section provides information on all activities related to the management of BTM contracts, including contract development, amendments, assignments, contract capacity demonstrations, measurement of energy deliveries, terminations, and other contract administration activities.

b) Summary of Contract Activity

During the Record Period, SCE managed twenty-six (26) Energy Efficiency (EE), eleven (11) Demand Response (DR), ten (10) Renewable Distributed Generation (DG), and eight (8) Permanent Load Shifting (PLS) contracts for a total of fifty-five (55) BTM contracts. Below, SCE sets

1 forth its recorded contract-related expenses, describes its BTM contract development and administration
2 activities during the Record Period, and demonstrates that such activities were reasonable.

3 c) Contract Development

4 During the Record Period, there were no additional contracts procured.

5 d) Contract Amendment Administration

6 After contract execution, BTM contract terms and conditions may be changed by
7 amendments. SCE executed twenty six (26) BTM contract amendments during the Record Period as
8 shown and summarized in Table II-7 below. BTM amendments are comprised of eighteen (18) EE, five
9 (5) PLS, and three (3) DR amendments.

Table II-7
SCE BTM Contract Amendments
January 1, 2021, through December 31, 2021

	<u>Contract Counterparty</u>	<u>Contract ID</u>	<u>Amendment No. and Description</u>	<u>Date Executed</u>
Energy Efficiency				
1	Metrus Energy - Hercules 1, LLC	408001	Amendment 8 - Clarifies (1) the expected savings are measured in kWh per day; and (2) clarify the definitions of the Energy Savings Percentages	5/3/2021
2	Metrus Energy - Hercules 1, LLC	408002	Amendment 12 - Clarifies (1) the expected savings are measured in kWh per day; and (2) clarify the definitions of the Energy Savings Percentages	5/3/2021
3	Metrus Energy - Hercules 1, LLC	408003	Amendment 10 - Clarifies (1) the expected savings are measured in kWh per day; and (2) clarify the definitions of the Energy Savings Percentages	5/3/2021
4	Metrus Energy - Hercules 1, LLC	408004	Amendment 9 - Clarifies (1) the expected savings are measured in kWh per day; and (2) clarify the definitions of the Energy Savings Percentages	5/3/2021
5	Metrus Energy - Hercules 1, LLC	408005	Amendment 11 - Clarifies (1) the expected savings are measured in kWh per day; and (2) clarify the definitions of the Energy Savings Percentages	5/3/2021
6	Metrus Energy - Hercules 1, LLC	408006	Amendment 10 - Clarifies (1) the expected savings are measured in kWh per day; and (2) clarify the definitions of the Energy Savings Percentages	5/3/2021
7	Metrus Energy - Hercules 1, LLC	408007	Amendment 9 - Clarifies (1) the expected savings are measured in kWh per day; and (2) clarify the definitions of the Energy Savings Percentages	5/3/2021
8	Metrus Energy - Hercules 1, LLC	408008	Amendment 11 - Clarifies (1) the expected savings are measured in kWh per day; and (2) clarify the definitions of the Energy Savings Percentages	5/3/2021
9	Metrus Energy - Hercules 1, LLC	408009	Amendment 9 - Clarifies (1) the expected savings are measured in kWh per day; and (2) clarify the definitions of the Energy Savings Percentages	5/3/2021
10	Metrus Energy - Hercules 1, LLC	408010	Amendment 8 - Clarifies (1) the expected savings are measured in kWh per day; and (2) clarify the definitions of the Energy Savings Percentages	5/3/2021
11	Metrus Energy - Hercules 1, LLC	408011	Amendment 12 - Clarifies (1) the expected savings are measured in kWh per day; and (2) clarify the definitions of the Energy Savings Percentages	5/3/2021
12	Metrus Energy - Hercules 1, LLC	408012	Amendment 12 - Clarifies (1) the expected savings are measured in kWh per day; and (2) clarify the definitions of the Energy Savings Percentages	5/3/2021
13	Metrus Energy - Hercules 1, LLC	408013	Amendment 10 - Clarifies (1) the expected savings are measured in kWh per day; and (2) clarify the definitions of the Energy Savings Percentages	5/3/2021
14	Metrus Energy - Hercules 1, LLC	408014	Amendment 10 - Clarifies (1) the expected savings are measured in kWh per day; and (2) clarify the definitions of the Energy Savings Percentages	5/3/2021
15	Metrus Energy - Hercules 1, LLC	408015	Amendment 8 - Clarifies (1) the expected savings are measured in kWh per day; and (2) clarify the definitions of the Energy Savings Percentages	5/3/2021
16	Metrus Energy - Hercules 1, LLC	408016	Amendment 9 - Clarifies (1) the expected savings are measured in kWh per day; and (2) clarify the definitions of the Energy Savings Percentages	5/3/2021
17	Metrus Energy - Hercules 1, LLC	408017	Amendment 11 - Clarifies (1) the expected savings are measured in kWh per day; and (2) clarify the definitions of the Energy Savings Percentages	5/3/2021
18	FSG Energy Efficiency, LLC	447102		2/23/2021
Permanent Load Shifting				
19	Ice Bear SPV #1, LLC	431154	Extended Project Completion Deadline	3/30/2021
20	Ice Bear SPV #1, LLC	431157	Extended Project Completion Deadline	3/30/2021
21	Ice Bear SPV #1, LLC	431160	Extended Project Completion Deadline	3/30/2021
22	Ice Bear SPV #1, LLC	431163	Extended Project Completion Deadline	3/30/2021
23	Ice Bear SPV #1, LLC	431166	Extended Project Completion Deadline	3/30/2021
Demand Response				
24	Swell Energy VPP Fund	ACES2-2019-DRES-001	Amended and Restated Agreement due to Covid-19 Pandemic impacts Amendment include new capacity schedule and extended the Expected Completion Deadline	5/27/2021
25	Sunrun Inc	SR-2019-DRES-01	Amendment to modify the agreement to include new reporting requirements based on ordering paragraph number 5 of CPUC final Resolution E-5142	8/9/2021
26	Sunrun Inc	SR-2019-DRES-02	Amendment to modify the agreement to include new reporting requirements based on ordering paragraph number 5 of CPUC final Resolution E-5142	8/9/2021

1 (1) Metrus Energy Hercules 1, LLC (Offer 408001)

2 Amended and Restated Metrus Energy Hercules 1, LLC, (formerly
3 Willdan Energy Solutions, Incorporated) Energy Efficiency Agreement is a 1 MW EE project located in
4 the West LA Basin area. Metrus Energy Hercules 1, LLC was originally signed as part of SCE's LCR
5 Solicitation executed on November 3, 2014. SCE and Metrus Energy Hercules 1, LLC executed
6 amendment eight (8) on May 3, 2021. The amendments (i) clarify that the values provided in the table
7 in Section 1.1 for the Expected Energy Savings are measured in kWh per day; and (ii) clarify the
8 definitions of Energy Savings Percentages. SCE's customers benefit from this amendment by having
9 accurate project information available for contract administration.

10 (2) Metrus Energy Hercules 1, LLC (Offer 408002)

11 Amended and Restated Metrus Energy Hercules 1, LLC, (formerly
12 Willdan Energy Solutions, Incorporated) Energy Efficiency Agreement is a 1 MW EE project located in
13 the Moorpark area. Metrus Energy Hercules 1, LLC was originally signed as part of SCE's LCR
14 Solicitation executed on November 3, 2014. SCE and Metrus Energy Hercules 1, LLC executed
15 amendment twelve (12) on May 3, 2021. The amendments: (i) clarify that the values provided in the
16 table in Section 1.1 for the Expected Energy Savings are measured in kWh per day; and (ii) clarify the
17 definitions of Energy Savings Percentages. SCE's customers benefit from this amendment by having
18 accurate project information available for contract administration.

19 (3) Metrus Energy Hercules 1, LLC (Offer 408003)

20 Amended and Restated Metrus Energy Hercules 1, LLC, (formerly
21 Willdan Energy Solutions, Incorporated) Energy Efficiency Agreement is a 1 MW EE project located in
22 the West LA Basin area. Metrus Energy Hercules 1, LLC was originally signed as part of SCE's LCR
23 Solicitation executed on November 3, 2014. SCE and Metrus Energy Hercules 1, LLC executed
24 amendment ten (10) on May 3, 2021. The amendments: (i) clarify that the values provided in the table
25 in Section 1.1 for the Expected Energy Savings are measured in kWh per day; and (ii) clarify the
26 definitions of Energy Savings Percentages. SCE's customers benefit from this amendment by having
27 accurate project information available for contract administration.

(4) Metrus Energy Hercules 1, LLC (Offer 408004)

Amended and Restated Metrus Energy Hercules 1, LLC, (formerly Willdan Energy Solutions, Incorporated) Energy Efficiency Agreement is a 1 MW EE project located in the West LA Basin area. Metrus Energy Hercules 1, LLC was originally signed as part of SCE's LCR Solicitation executed on November 3, 2014. SCE and Metrus Energy Hercules 1, LLC executed amendment nine (9) on May 3, 2021. The amendments: (i) clarify that the values provided in the table in Section 1.1 for the Expected Energy Savings are measured in kWh per day; and (ii) clarify the definitions of Energy Savings Percentages. SCE's customers benefit from this amendment by having accurate project information available for contract administration

(5) Metrus Energy Hercules 1, LLC (Offer 408005)

Amended and Restated Metrus Energy Hercules 1, LLC, (formerly Willdan Energy Solutions, Incorporated) Energy Efficiency Agreement is a 1 MW EE project located in the Moorpark area. Metrus Energy Hercules 1, LLC was originally signed as part of SCE's LCR Solicitation executed on November 3, 2014. SCE and Metrus Energy Hercules 1, LLC executed amendment eleven (11) on May 3, 2021. The amendments: (i) clarify that the values provided in the table in Section 1.1 for the Expected Energy Savings are measured in kWh per day; and (ii) clarify the definitions of Energy Savings Percentages. SCE's customers benefit from this amendment by having accurate project information available for contract administration.

(6) Metrus Energy Hercules 1, LLC (Offer 408006)

Amended and Restated Metrus Energy Hercules 1, LLC, (formerly Willdan Energy Solutions, Incorporated) Energy Efficiency Agreement is a 1 MW EE project located in the West LA Basin area. Metrus Energy Hercules 1, LLC was originally signed as part of SCE's LCR Solicitation executed on November 3, 2014. SCE and Metrus Energy Hercules 1, LLC executed amendment ten (10) on May 3, 2021. The amendments: (i) clarify that the values provided in the table in Section 1.1 for the Expected Energy Savings are measured in kWh per day; and (ii) clarify the definitions of Energy Savings Percentages. SCE's customers benefit from this amendment by having accurate project information available for contract administration.

1 (7) Metrus Energy Hercules 1, LLC (Offer 408007)

2 Amended and Restated Metrus Energy Hercules 1, LLC, (formerly
3 Willdan Energy Solutions, Incorporated) Energy Efficiency Agreement is a 1 MW EE project located in
4 the West LA Basin area. Metrus Energy Hercules 1, LLC was originally signed as part of SCE's LCR
5 Solicitation executed on November 3, 2014. SCE and Metrus Energy Hercules 1, LLC executed
6 amendment nine (9) on May 3, 2021. The amendments: (i) clarify that the values provided in the table
7 in Section 1.1 for the Expected Energy Savings are measured in kWh per day; and (ii) clarify the
8 definitions of Energy Savings Percentages. SCE's customers benefit from this amendment by having
9 accurate project information available for contract administration.

10 (8) Metrus Energy Hercules 1, LLC (Offer 408008)

11 Amended and Restated Metrus Energy Hercules 1, LLC, (formerly
12 Willdan Energy Solutions, Incorporated) Energy Efficiency Agreement is a 1 MW EE project located in
13 the Moorpark area. Metrus Energy Hercules 1, LLC was originally signed as part of SCE's LCR
14 Solicitation executed on November 3, 2014. SCE and Metrus Energy Hercules 1, LLC executed
15 amendment twelve (12) on May 3, 2021. The amendments: (i) clarify that the values provided in the
16 table in Section 1.1 for the Expected Energy Savings are measured in kWh per day; and (ii) clarify the
17 definitions of Energy Savings Percentages. SCE's customers benefit from this amendment by having
18 accurate project information available for contract administration.

19 (9) Metrus Energy Hercules 1, LLC (Offer 408009)

20 Amended and Restated Metrus Energy Hercules 1, LLC, (formerly
21 Willdan Energy Solutions, Incorporated) Energy Efficiency Agreement is a 1 MW EE project located in
22 the West LA Basin area. Metrus Energy Hercules 1, LLC was originally signed as part of SCE's LCR
23 Solicitation executed on November 3, 2014. SCE and Metrus Energy Hercules 1, LLC executed
24 amendment nine (9) on May 3, 2021. The amendments: (i) clarify that the values provided in the table
25 in Section 1.1 for the Expected Energy Savings are measured in kWh per day; and (ii) clarify the
26 definitions of Energy Savings Percentages. SCE's customers benefit from this amendment by having
27 accurate project information available for contract administration.

1 (10) Metrus Energy Hercules 1, LLC (Offer 408010)

2 Amended and Restated Metrus Energy Hercules 1, LLC, (formerly
3 Willdan Energy Solutions, Incorporated) Energy Efficiency Agreement is a 1 MW EE project located in
4 the Johanna/Santiago area. Metrus Energy Hercules 1, LLC was originally signed as part of SCE's LCR
5 Solicitation executed on November 3, 2014. SCE and Metrus Energy Hercules 1, LLC executed
6 amendment eight (8) on May 3, 2021. The amendment: (i) clarify that the values provided in the table
7 in Section 1.1 for the Expected Energy Savings are measured in kWh per day; and (ii) clarify the
8 definitions of Energy Savings Percentages. SCE's customers benefit from this amendment by having
9 accurate project information available for contract administration.

10 (11) Metrus Energy Hercules 1, LLC (Offer 408011)

11 Amended and Restated Metrus Energy Hercules 1, LLC, (formerly
12 Willdan Energy Solutions, Incorporated) Energy Efficiency Agreement is a 1 MW EE project located in
13 the Moorpark area. Metrus Energy Hercules 1, LLC was originally signed as part of SCE's LCR
14 Solicitation executed on November 3, 2014. SCE and Metrus Energy Hercules 1, LLC executed
15 amendment twelve (12) on May 3, 2021. The amendments: (i) clarify that the values provided in the
16 table in Section 1.1 for the Expected Energy Savings are measured in kWh per day; and (ii) clarify the
17 definitions of Energy Savings Percentages. SCE's customers benefit from this amendment by having
18 accurate project information available for contract administration.

19 (12) Metrus Energy Hercules 1, LLC (Offer 408012)

20 Amended and Restated Metrus Energy Hercules 1, LLC, (formerly
21 Willdan Energy Solutions, Incorporated) Energy Efficiency Agreement is a 1 MW EE project located in
22 the Johanna/Santiago area. Metrus Energy Hercules 1, LLC was originally signed as part of SCE's LCR
23 Solicitation executed on November 3, 2014. SCE and Metrus Energy Hercules 1, LLC executed
24 amendment twelve (12) on May 3, 2021. The amendments: (i) clarify that the values provided in the
25 table in Section 1.1 for the Expected Energy Savings are measured in kWh per day; and (ii) clarify the
26 definitions of Energy Savings Percentages. SCE's customers benefit from this amendment by having
27 accurate project information available for contract administration.

1 (13) Metrus Energy Hercules 1, LLC (Offer 408013)

2 Amended and Restated Metrus Energy Hercules 1, LLC, (formerly
3 Willdan Energy Solutions, Incorporated) Energy Efficiency Agreement is a 1 MW EE project located in
4 the Johanna/Santiago area. Metrus Energy Hercules 1, LLC was originally signed as part of SCE's LCR
5 Solicitation executed on November 3, 2014. SCE and Metrus Energy Hercules 1, LLC executed
6 amendment ten (10) on May 3, 2021. The amendments: (i) clarify that the values provided in the table
7 in Section 1.1 for the Expected Energy Savings are measured in kWh per day; and (ii) clarify the
8 definitions of Energy Savings Percentages. SCE's customers benefit from this amendment by having
9 accurate project information available for contract administration.

10 (14) Metrus Energy Hercules 1, LLC (Offer 408014)

11 Amended and Restated Metrus Energy Hercules 1, LLC, (formerly
12 Willdan Energy Solutions, Incorporated) Energy Efficiency Agreement is a 1 MW EE project located in
13 the Goleta area. Metrus Energy Hercules 1, LLC was originally signed as part of SCE's LCR
14 Solicitation executed on November 3, 2014. SCE and Metrus Energy Hercules 1, LLC executed
15 amendment ten (10) on May 3, 2021. The amendments: (i) clarify that the values provided in the table
16 in Section 1.1 for the Expected Energy Savings are measured in kWh per day; and (ii) clarify the
17 definitions of Energy Savings Percentages. SCE's customers benefit from this amendment by having
18 accurate project information available for contract administration.

19 (15) Metrus Energy Hercules 1, LLC (Offer 408015)

20 Amended and Restated Metrus Energy Hercules 1, LLC, (formerly
21 Willdan Energy Solutions, Incorporated) Energy Efficiency Agreement is a 1 MW EE project located in
22 the West LA Basin area. Metrus Energy Hercules 1, LLC was originally signed as part of SCE's LCR
23 Solicitation executed on November 3, 2014. SCE and Metrus Energy Hercules 1, LLC executed
24 amendment eight (8) on May 3, 2021. The amendments: (i) clarify that the values provided in the
25 table in Section 1.1 for the Expected Energy Savings are measured in kWh per day; and (ii) clarify the
26 definitions of Energy Savings Percentages. SCE's customers benefit from this amendment by having
27 accurate project information available for contract administration.

1 (16) Metrus Energy Hercules 1, LLC (Offer 408016)

2 Amended and Restated Metrus Energy Hercules 1, LLC, (formerly
3 Willdan Energy Solutions, Incorporated) Energy Efficiency Agreement is 1 a MW EE project located in
4 the West LA Basin area. Metrus Energy Hercules 1, LLC was originally signed as part of SCE's LCR
5 Solicitation executed on November 3, 2014. SCE and Metrus Energy Hercules 1, LLC executed
6 amendment nine (9) on May 3, 2021. The amendments: (i) clarify that the values provided in the table
7 in Section 1.1 for the Expected Energy Savings are measured in kWh per day; and (ii) clarify the
8 definitions of Energy Savings Percentages. SCE's customers benefit from this amendment by having
9 accurate project information available for contract administration.

10 (17) Metrus Energy Hercules 1, LLC (Offer 408017)

11 Amended and Restated Metrus Energy Hercules 1, LLC, (formerly
12 Willdan Energy Solutions, Incorporated) Energy Efficiency Agreement is a 1 MW EE project located in
13 the Moorpark area. Metrus Energy Hercules 1, LLC was originally signed as part of SCE's LCR
14 Solicitation executed on November 3, 2014. SCE and Metrus Energy Hercules 1, LLC executed
15 amendment eleven (11) on May 3, 2021. The amendments: (i) clarify that the values provided in the
16 table in Section 1.1 for the Expected Energy Savings are measured in kWh per day; and (ii) clarify the
17 definitions of Energy Savings Percentages. SCE's customers benefit from this amendment by having
18 accurate project information available for contract administration.

19 (18) FSG Energy Efficiency, LLC (Offer 447102)

20 FSG Energy Efficiency, LLC was originally signed as part of SCE's LCR
21 Solicitation executed on November 3, 2014. SCE and FSG Energy Efficiency, LLC executed a Letter
22 Agreement on February 23, 2021. The following area was amended: (i) [REDACTED]

23 [REDACTED]
24 [REDACTED]
25 [REDACTED]

26 [REDACTED] SCE's customers benefit from this amendment by having accurate project information
27 available for contract administration.

1 (19) Ice Bear SPV #1 (Offer 431154)

2 Ice Bear SPV #1, LLC is a 1.28 MW PLS Agreement located in the
3 Johanna/Santiago substation areas. Ice Bear SPV #1, LLC was originally signed as part of SCE's LCR
4 solicitation executed on November 3, 2014. SCE and Ice Bear SPV #1, LLC executed an amendment on
5 March 30, 2021. As a result of D.20-12-002, which relaxed the deadline limitations on the 2013 LCR
6 Ice Bear contracts due to the urgent need for additional capacity by summer 2021, SCE extended the
7 Project Completion Deadline [REDACTED] SCE's customers benefit from this extension because it
8 provided MWs that would otherwise not have been realized to help meet the summer 2021 needs and
9 help provide system reliability.

10 (20) Ice Bear SPV #1, LLC (Offer 431157)

11 Ice Bear SPV #1, LLC is a 1.28 MW PLS Agreement located in the
12 Johanna/Santiago substation areas. Ice Bear SPV #1, LLC was originally signed as part of SCE's LCR
13 solicitation executed on November 3, 2014. SCE and Ice Bear SPV #1, LLC executed an amendment on
14 March 30, 2021. As a result of D.20-12-002, which relaxed the deadline limitations on the 2013 LCR
15 Ice Bear contracts due to the urgent need for additional capacity by summer 2021, SCE extended the
16 Project Completion Deadline [REDACTED]. SCE's customers benefit from this extension because it
17 provided MWs that would otherwise not have been realized to help meet the summer 2021 needs and
18 help provide system reliability.

19 (21) Ice Bear SPV #1, LLC (Offer 431160)

20 Ice Bear SPV #1, LLC is a 1.28 MW PLS Agreement located in the
21 Johanna/Santiago substation areas. Ice Bear SPV #1, LLC was originally signed as part of SCE's LCR
22 solicitation executed on November 3, 2014. SCE and Ice Bear SPV #1, LLC executed an amendment on
23 March 30, 2021. As a result of D.20-12-002, which relaxed the deadline limitations on the 2013 LCR
24 Ice Bear contracts due to the urgent need for additional capacity by summer 2021, SCE extended the
25 Project Completion Deadline [REDACTED]. SCE's customers benefit from this extension because it
26 provided MWs that would otherwise not have been realized to help meet the summer 2021 needs and
27 help provide system reliability.

1 (22) Ice Bear SPV #1, LLC (Offer 431163)

2 Ice Bear SPV #1, LLC is a 1.28 MW PLS Agreement located in the
3 Johanna/Santiago substation areas. Ice Bear SPV #1, LLC was originally signed as part of SCE's LCR
4 solicitation executed on November 3, 2014. SCE and Ice Bear SPV #1, LLC executed an amendment on
5 March 30, 2021. As a result of D.20-12-002, which relaxed the deadline limitations on the 2013 LCR
6 Ice Bear contracts due to the urgent need for additional capacity by summer 2021, SCE extended the
7 Project Completion Deadline [REDACTED] SCE's customers benefit from this extension because it
8 provided MWs that would otherwise not have been realized to help meet the summer 2021 needs and
9 help provide system reliability.

10 (23) Ice Bear SPV #1, LLC (Offer 431166)

11 Ice Bear SPV #1, LLC is a 1.28 MW PLS Agreement located in the
12 Johanna/Santiago substation areas. Ice Bear SPV #1, LLC was originally signed as part of SCE's LCR
13 solicitation executed on November 3, 2014. SCE and Ice Bear SPV #1, LLC executed an amendment on
14 March 30, 2021. As a result of D.20-12-002, which relaxed the deadline limitations on the 2013 LCR
15 Ice Bear contracts due to the urgent need for additional capacity by summer 2021, SCE extended the
16 Project Completion Deadline [REDACTED] SCE's customers benefit from this extension because it
17 provided MWs that would otherwise not have been realized to help meet the summer 2021 needs and
18 help provide system reliability.

19 (24) Swell Energy VPP Fund (Offer ACES2-2019-DRES-001)

20 Swell Energy VPP Fund is a Demand Response Energy Storage
21 Agreement located in the Santa Clara/Goleta substation areas. Swell Energy VPP Fund was originally
22 signed as part of SCE's Aliso Canyon Energy Storage 2 (ACES2) solicitation executed on April 1, 2019.
23 SCE and Swell Energy VPP Fund executed the amended and restated Agreement on May 27, 2021. The
24 amendment was executed because of COVID-19 pandemic impacts on project development. The
25 amendment includes changes to the monthly deliveries to the initial schedule. SCE's customers will
26 benefit from this amendment because it will help provide MWs that would otherwise not be realized to

1 help address electrical system operational limitations from reduced gas deliverability from the Aliso
2 Canyon natural gas storage facility and identified local capacity needs in the Santa Clara/Goleta area.

3 (25) Sunrun Inc (SR-2019-DRES-01)

4 SCE and Sunrun executed a 4.5 MW Demand Response Energy Storage
5 agreement on November 4, 2020, as a result of SCE's System Reliability RFO. As a result of OP 5 of
6 Resolution E-5142, which approved the System Reliability Standard Track agreements, the approval
7 included a new requirement stating, "SCE shall file a Tier 1 Advice letter by August 1, 2023,
8 demonstrating that the underlying customers of the Sunrun contracts are providing incremental capacity
9 by August 1, 2023, when the resource comes online." To support this requirement, this amendment
10 requires Sunrun to provide necessary reports to support the incremental capacity. SCE's customers will
11 benefit from this amendment as it provides assurance that this agreement provides incremental resources
12 to support system reliability.

13 (26) Sunrun Inc (SR-2019-DRES-02)

14 SCE and Sunrun executed a Demand Response Energy Storage agreement
15 on November 4, 2020, as a result of SCE's System Reliability RFO. The agreement is for 0.5MW to be
16 located in a DAC (Disadvantaged Communities). As a result of OP 5 of Resolution E-5142, which
17 approved the System Reliability Standard Track agreements, the approval included a new requirement
18 stating, "SCE shall file a Tier 1 Advice letter by August 1, 2023 demonstrating that the underlying
19 customers of the Sunrun contracts are providing incremental capacity by August 1, 2023, when the
20 resource comes online." To support this requirement, this amendment requires Sunrun to provide
21 necessary reports to support the incremental capacity. SCE's customers will benefit from this
22 amendment as it provides assurance that this agreement will provide incremental resources to support
23 system reliability.

24 e) Contract Assignment Administration

25 BTM contracts may only be assigned with the written consent of the parties,
26 which may not be unreasonably withheld. There are many reasons why BTM contract counterparties
27 seek to assign their contracts. For example, the counterparty might want to sell or transfer the project to

1 a new entity, assign the contract to a lender as security for a loan, or a change of control of the project.
2 Table II-8 below lists the seventeen (17) contract assignments to which SCE consented during the
3 Record Period. SCE and Sellers have executed seventeen (17) Energy Efficiency Consent to
4 Assignments for existing contracts.

Table II-8
SCE BTM Contract Consents
January 1, 2021, through December 31, 2021

	Contract ID	Project	Type of Assignment or Consents	Description	Date Effective
1	408001	Willdan Energy Solutions, Inc	Consent to Assignment	Willdan Energy Solutions, Inc entered into a Purchase and Sale Agreement with Metrus Energy - Hercules 1, LLC As part of the agreement, Willdan Energy Solutions, Inc has agreed to assign all rights, duties, and obligations under the LCR Agreement to Metrus Energy - Hercules 1, LLC	1/11/2021
2	408002	Willdan Energy Solutions, Inc	Consent to Assignment	Willdan Energy Solutions, Inc entered into a Purchase and Sale Agreement with Metrus Energy - Hercules 1, LLC As part of the agreement, Willdan Energy Solutions, Inc has agreed to assign all rights, duties, and obligations under the LCR Agreement to Metrus Energy - Hercules 1, LLC	3/17/2021
3	408003	Willdan Energy Solutions, Inc	Consent to Assignment	Willdan Energy Solutions, Inc entered into a Purchase and Sale Agreement with Metrus Energy - Hercules 1, LLC As part of the agreement, Willdan Energy Solutions, Inc has agreed to assign all rights, duties, and obligations under the LCR Agreement to Metrus Energy - Hercules 1, LLC	1/11/2021
4	408004	Willdan Energy Solutions, Inc	Consent to Assignment	Willdan Energy Solutions, Inc entered into a Purchase and Sale Agreement with Metrus Energy - Hercules 1, LLC As part of the agreement, Willdan Energy Solutions, Inc has agreed to assign all rights, duties, and obligations under the LCR Agreement to Metrus Energy - Hercules 1, LLC	3/17/2021
5	408005	Willdan Energy Solutions, Inc	Consent to Assignment	Willdan Energy Solutions, Inc entered into a Purchase and Sale Agreement with Metrus Energy - Hercules 1, LLC As part of the agreement, Willdan Energy Solutions, Inc has agreed to assign all rights, duties, and obligations under the LCR Agreement to Metrus Energy - Hercules 1, LLC	1/11/2021
6	408006	Willdan Energy Solutions, Inc	Consent to Assignment	Willdan Energy Solutions, Inc entered into a Purchase and Sale Agreement with Metrus Energy - Hercules 1, LLC As part of the agreement, Willdan Energy Solutions, Inc has agreed to assign all rights, duties, and obligations under the LCR Agreement to Metrus Energy - Hercules 1, LLC	1/11/2021
7	408007	Willdan Energy Solutions, Inc	Consent to Assignment	Willdan Energy Solutions, Inc entered into a Purchase and Sale Agreement with Metrus Energy - Hercules 1, LLC As part of the agreement, Willdan Energy Solutions, Inc has agreed to assign all rights, duties, and obligations under the LCR Agreement to Metrus Energy - Hercules 1, LLC	1/11/2021
8	408008	Willdan Energy Solutions, Inc	Consent to Assignment	Willdan Energy Solutions, Inc entered into a Purchase and Sale Agreement with Metrus Energy - Hercules 1, LLC As part of the agreement, Willdan Energy Solutions, Inc has agreed to assign all rights, duties, and obligations under the LCR Agreement to Metrus Energy - Hercules 1, LLC	3/17/2021
9	408009	Willdan Energy Solutions, Inc	Consent to Assignment	Willdan Energy Solutions, Inc entered into a Purchase and Sale Agreement with Metrus Energy - Hercules 1, LLC As part of the agreement, Willdan Energy Solutions, Inc has agreed to assign all rights, duties, and obligations under the LCR Agreement to Metrus Energy - Hercules 1, LLC	1/11/2021
10	408010	Willdan Energy Solutions, Inc	Consent to Assignment	Willdan Energy Solutions, Inc entered into a Purchase and Sale Agreement with Metrus Energy - Hercules 1, LLC As part of the agreement, Willdan Energy Solutions, Inc has agreed to assign all rights, duties, and obligations under the LCR Agreement to Metrus Energy - Hercules 1, LLC	1/11/2021

11	408011	Willdan Energy Solutions, Inc	Consent to Assignment	Willdan Energy Solutions, Inc entered into a Purchase and Sale Agreement with Metrus Energy - Hercules 1, LLC As part of the agreement, Willdan Energy Solutions, Inc has agreed to assign all rights, duties, and obligations under the LCR Agreement to Metrus Energy - Hercules 1, LLC	1/11/2021
12	408012	Willdan Energy Solutions, Inc	Consent to Assignment	Willdan Energy Solutions, Inc entered into a Purchase and Sale Agreement with Metrus Energy - Hercules 1, LLC As part of the agreement, Willdan Energy Solutions, Inc has agreed to assign all rights, duties, and obligations under the LCR Agreement to Metrus Energy - Hercules 1, LLC	1/11/2021
13	408013	Willdan Energy Solutions, Inc	Consent to Assignment	Willdan Energy Solutions, Inc entered into a Purchase and Sale Agreement with Metrus Energy - Hercules 1, LLC As part of the agreement, Willdan Energy Solutions, Inc has agreed to assign all rights, duties, and obligations under the LCR Agreement to Metrus Energy - Hercules 1, LLC	1/11/2021
14	408014	Willdan Energy Solutions, Inc	Consent to Assignment	Willdan Energy Solutions, Inc entered into a Purchase and Sale Agreement with Metrus Energy - Hercules 1, LLC As part of the agreement, Willdan Energy Solutions, Inc has agreed to assign all rights, duties, and obligations under the LCR Agreement to Metrus Energy - Hercules 1, LLC	1/11/2021
15	408015	Willdan Energy Solutions, Inc	Consent to Assignment	Willdan Energy Solutions, Inc entered into a Purchase and Sale Agreement with Metrus Energy - Hercules 1, LLC As part of the agreement, Willdan Energy Solutions, Inc has agreed to assign all rights, duties, and obligations under the LCR Agreement to Metrus Energy - Hercules 1, LLC	1/11/2021
16	408016	Willdan Energy Solutions, Inc	Consent to Assignment	Willdan Energy Solutions, Inc entered into a Purchase and Sale Agreement with Metrus Energy - Hercules 1, LLC As part of the agreement, Willdan Energy Solutions, Inc has agreed to assign all rights, duties, and obligations under the LCR Agreement to Metrus Energy - Hercules 1, LLC	1/11/2021
17	408017	Willdan Energy Solutions, Inc	Consent to Assignment	Willdan Energy Solutions, Inc entered into a Purchase and Sale Agreement with Metrus Energy - Hercules 1, LLC As part of the agreement, Willdan Energy Solutions, Inc has agreed to assign all rights, duties, and obligations under the LCR Agreement to Metrus Energy - Hercules 1, LLC	3/17/2021

1 f) Contract Capacity Verifications

2 SCE's capacity verification activities for BTM projects are designed to ensure
3 that SCE's customers can reasonably expect to receive appropriate quantities of energy and capacity
4 savings in full compliance with the associated contracts. During the Record Period, there were no
5 projects that underwent capacity verification activities.

6 a. Renewable Distributed Generation:

7 Renewable DG capacity verifications are a one-time event performed prior to the contract
8 becoming operational. The activity consists of a site visit by an independent third-party evaluator who
9 is to document the equipment that was installed, collect measurements as outlined in contract to
10 determine the minimal acceptable system performance and ensure that the outputs will be higher than
11 that minimal acceptable system performance, determine if it is interconnected as a non-export system,
12 identify the meter unique identification number(s), and to verify that the meter is collecting data from
13 the project installation only. The verification is intended to determine: (i) whether the generating facility
14 has been completed and installed in accordance with the contract and is operating as planned and
15 designed; and (ii) the amount of capacity installed at the site. During the Record Period, there was no
16 activity.

17 b. Energy Efficiency:

18 EE capacity verifications are performed prior to the contract becoming operational. The
19 activity consists of a site visit by an independent third-party evaluator who is to document the existing
20 equipment to establish the pre-project conditions necessary and as outlined in the contract for
21 determining the energy and capacity savings expected from installing the EE measures at one or more
22 customer sites. The verification is intended to determine: (i) if the project has been completed and the
23 measures have been installed in accordance with the project description and the Measuring and
24 Verification Plan; (ii) the measures are operating as planned and designed; (iii) the measures will reduce
25 the capacity at the site(s) in an amount equal to or exceeding the expected capacity savings, and (iii) the
26 measures will reduce the energy use at the site(s) in an amount equal to or exceeding the minimum

summer on-peak energy savings, minimum summer off-peak energy savings, and minimum winter on-peak energy savings. During the Record Period, there was no activity.

c. Permanent Load Shift (PLS):

PLS energy and capacity reduction verifications are performed prior to the contract becoming operational. The activity consists of a site visit by an independent third-party evaluator who is to document the existing equipment to establish the pre-project conditions necessary and as outlined in the contract for determining the energy and capacity savings expected from installing the PLS measures at one or more customer sites. The independent third-party evaluator uses the pre-installation description for purposes of establishing the measurement baseline and each individual measurement baseline and corresponding rated capacity and energy savings of each Thermal Energy Resource (TES). Twenty percent (20%) of the sites are subject to the pre-installation equipment inspection and the sites are selected by SCE, or if not, enough sites are selected by SCE, then by the independent third-party evaluator.

The verification is intended to determine: (i) the project has been completed and installed in accordance with the power purchase agreement; (ii) all measures in the project are operating as planned and designed; (iii) the project reduced the capacity use at the sites in an amount not less than the expected capacity savings as determined in accordance with the agreement; and (iv) the project will result in a reduction in the energy use at the site in an amount not less than the expected summer on-peak energy savings, expected summer off-peak energy savings, and expected winter on-peak energy savings as determined in accordance with the agreement. For sites that were not subject to a post-installation inspection, the independent third-party evaluator deems that the forgoing criteria were met. During the Record Period, there was no activity.

g) Measurement of Energy Deliveries

(1) Energy Efficiency:

SCE uses energy and capacity reductions to calculate payments owed to BTM EE projects. In order to determine the payment for energy savings delivered by the party and overall energy savings delivery performance, the project must have (i) been completed and the measures

1 have been installed in accordance with the project description and the M&V protocol; (ii) the measures
2 are operating as planned and designed; (iii) the measures will reduce the capacity at the site(s) in the
3 amount equal to or exceeding the minimum capacity savings; and (iv) the measures will reduce the
4 capacity at the sites in an amount equal to or exceeding the minimum summer on-peak energy savings,
5 minimum summer off-peak energy savings and minimum winter on-peak energy savings.

6 (2) Renewable Distributed Generation:

7 SCE uses meter data to calculate payments owed to BTM Renewable
8 Distributed Generation projects. SCE requires the installation of revenue grade interval meters that have
9 been tested according to all applicable ANSI (American National Standards Institute) C-12 testing
10 protocols and certified by an independent testing body, along with being listed on the CEC website as an
11 approved meter. The meter data is read, retrieved, validated, and sent to SCE by an independent third-
12 party Performance Data Provider (PDP) monthly and is used to determine the payment for energy
13 savings delivered by the party and overall energy savings delivery performance.

14 (3) Permanent Load Shift:

15 SCE uses grid reliable energy and capacity reduction savings to calculate
16 payments owed to BTM PLS projects. In order to determine the payment for energy savings delivered
17 by the party and overall energy savings delivery performance, the project must have (i) the project has
18 been completed and installed in accordance with the terms of the agreement; (ii) all measures in the
19 project are operating as planned and designed; (iii) the project reduced the capacity use at the site in an
20 amount not less than the Expected Capacity Savings as determined in accordance with Exhibit B of the
21 agreement; and (iv) the project will result in a reduction in the energy use at the site in an amount not
22 less than the expected summer on-peak energy savings, expected summer off-peak energy savings, and
23 expected winter on peak energy savings all as determined in accordance with Exhibit B of the
24 agreement.

25 (4) Demand Response:

26 SCE uses meter data from SCE meters to determine DR performance and
27 to calculate payments to BTM DR aggregators. After SCE has read, retrieved, and validated meter data,

1 it is uploaded into the APX system and DR aggregators are able to retrieve the data to determine
2 performance and prepared invoices which are submitted to SCE for payment. For the four Hybrid
3 Electric Building Technologies agreements that utilize the CAISO alternative baseline, SCE also uses
4 Hybrid sub-meter data in the settlement process.

5 h) Dispute Resolution and Litigation

6 Details on BTM Project dispute resolutions and litigation activities during the
7 Record Period are provided below:

- 8 (1) Willdan Energy Solutions, Inc (ID 408001, 408002, 408003, 408004,
9 408005, 408006, 408007, 408008, 408009, 408010, 408011, 408012,
10 408013, 408014, 408015, 408016, 408017)

11 The Willdan Energy Solutions, Inc. contracts are for 17 MW of non-
12 residential EE projects, located in the West LA/Santiago-Johanna regions and were originally executed
13 as part of D.13-02-015 in 2013. [REDACTED]

14 [REDACTED]
15 [REDACTED]
16 [REDACTED]
17 [REDACTED]
18 [REDACTED]
19 [REDACTED]
20 [REDACTED]
21 [REDACTED]

22 [REDACTED]

23 i) Contract Terminations

24 During the Record Period, a total of 12.12 MWs of BTM contracts were
25 terminated. This included four (4) PLS contracts from SCE's 2013 LCR solicitation due to not meeting
26 the project completion date by the project completion deadline. These agreements and their associated
27 capacity losses are shown below in Table II-9.

Table II-9
BTM Contracts that Terminated
January 1, 2021, Through December 31, 2021

Contract ID	Project Name	Capacity (MW)	Contract Type	Termination Date	Note
402039	STEM Energy Southern California, LLC (Stem 2)	7	Demand Response	1/4/2021	Stem elected to terminate due lack of customer potential in the Johanna-Santiago area
431157	Ice Bear SPV #1, LLC	1.28	Permanent Load Shifting	8/9/2021	Event of Default; Did not meet the Project Completion Date by the Project Completion Deadline
431160	Ice Bear SPV #1, LLC	1.28	Permanent Load Shifting	8/9/2021	Event of Default; Did not meet the Project Completion Date by the Project Completion Deadline
431163	Ice Bear SPV #1, LLC	1.28	Permanent Load Shifting	8/9/2021	Event of Default; Did not meet the Project Completion Date by the Project Completion Deadline
431166	Ice Bear SPV #1, LLC	1.28	Permanent Load Shifting	8/9/2021	Event of Default; Did not meet the Project Completion Date by the Project Completion Deadline

j) Contracts that Achieved Commercial Operation

During the Record Period, one (1) PLS contract achieved commercial operation. This agreement is shown below in Table II-10.

Table II-10
BTM Contracts that Achieved Commercial Operation
January 1, 2021, Through December 31, 2021

Contract ID	Project Name	Capacity (MW)	Contract Type	Commercial Online Date
431154	Ice Bear SPV #1, LLC	1.28	Permanent Load Shifting	1/25/2021

k) Other Contract Activities

During the Record Period, two (2) Renewable Distributed Generation offers, 490004 and 490010, had deficient energy savings delivery events over two consecutive calculation periods. The Seller paid the applicable product replacement damage amounts of [REDACTED] [REDACTED] respectively, to cure the shortfall. The agreements mentioned are in Table II-11.

Table II-11
Other Activities
January 1, 2021, through December 31, 2021

	Project	Contract ID	Description	MW
1	Amended & Restated Solar Star California XXXVII, LLC	490004	Issued Potential Event of Default Notice due to two consecutive Events of Deficient Energy Savings Delivery; for being below the "Seller's Energy Savings Delivery Obligation". Seller paid the Product Replacement Damage Amount to cure the Potential Event of Default	2.98
2	LA Basin Solar III, LLC	490010	Issued Potential Event of Default Notice due to two consecutive Events of Deficient Energy Savings Delivery; for being below the "Seller's Energy Savings Delivery Obligation". Seller paid the Product Replacement Damage Amount to cure the Potential Event of Default	1.134

1 l) BTM Contract Payment Process

2 The sections below discuss the administrative procedures, guidelines and
3 processes regarding the monitoring, validation, and calculations of the various BTM contract settlement
4 provisions. Appendix VII-O lists the summary of payments during the Record Period.

5 (1) Energy Efficiency:

6 SCE receives the capacity savings and pays the EE projects based upon a
7 payment adjustment factor – a percentage used to calculate the adjusted contract price, calculated from
8 the energy and capacity reductions as stated in the most recent primary post-installation inspection
9 report or post-installation inspection report as described in the agreement.

10 BTM EE contracts are (i) paid annually for the capacity savings delivered
11 based on the most recent primary post-installation inspection report or post-installation inspection
12 report, and (ii) determined independent of any previous or future adjusted contract price calculation.

13 (2) Renewable Distributed Generation:

14 SCE receives the quantity of energy savings and pays the Renewable DG
15 projects based upon metered amounts per the contract settlement provisions. BTM Renewable DG
16 contracts are paid every three months for the energy savings delivered by the generator based on time of
17 delivery and the contracted energy savings price. During the Record Period, SCE managed active
18 Renewable DG contracts which were paid using Time of Delivery Allocation Factors (TOD Factors) in

1 the energy savings payment calculations. The TOD Factors for the delivery period are multiplied by the
2 product of metered energy for that delivery period and the energy price.

3 Other payment impacts to the SCE's Renewable DG contracts include: (i)
4 payment caps on 15 minute and annual kWh deliveries, and (ii) provisions that require a seller to meet
5 certain energy savings delivery obligations. SCE and the seller set expected annual energy savings
6 targets for the specific projects. These annual saving targets function as the basis for determining
7 whether, for a 24-month period immediately preceding the end of each term year, the projects meet their
8 energy savings delivery obligations. If a project does not meet its energy savings delivery requirements
9 after supplementing their production kWh with confirmed lost output, the project may be subject to
10 liquidated damages known as a product replacement damage amount. There were two (2) offers
11 (490004 & 490010) that incurred such penalties during the Record Period.

12 (3) Permanent Load Shift:

13 SCE receives the capacity reduction savings and pays the PLS projects
14 based upon the project Completion Date until the end of the Term. SCE shall make quarterly capacity
15 payments to seller in arrears and in accordance with the provisions of the contract so long as (i) no
16 default event with respect to the seller occurred and is continuing and (ii) no early termination date has
17 occurred or been designated because of an default event with respect to the seller.

18 The quarterly "Capacity Payment" shall equal the sum of the expected
19 capacity savings for each given month of the quarter multiplied by the Contract Price less any
20 adjustments for capacity shortfall for each given month.

21 For any month in which a TES compressor failed to shut off in accordance
22 with the TES resource schedule, the "Capacity Shortfall" shall equal the sum of the following for each
23 such TES compressor; (i) the individual measurement baseline for that TES compressor multiplied by
24 (ii) the ratio of the period of time that month that the TES compressor failed to shut off divided by the
25 period of time the TES compressor was available to be shut off.

1 (4) Demand Response:

2 On a monthly basis, the DR sellers and SCE use meter data to determine
3 demand response performance and to calculate payments, zero payments or penalties to BTM demand
4 response aggregators. After SCE has read, retrieved, and validated meter data, it is uploaded into the
5 APX cloud-based system where DR aggregators are able to retrieve the data to determine performance
6 and prepared invoices which are submitted to SCE. For the four Hybrid Electric Building Technologies
7 agreements, which utilize the CAISO alternative baseline, SCE also uses Hybrid sub-meter data in the
8 settlement process.

9 m) BTM Contract Collateral

10 The administration and tracking of BTM contract collateral are between two
11 groups at SCE. Officially, administration of collateral activity is assigned to SCE's Credit Risk group
12 and Risk Operations & Collateral Management group. SCE's Risk Operations & Collateral Management
13 group directly handles the routine collateral posting transactions with the counterparty and informs the
14 contract managers of any delivery date security amount posted and due. To provide continuity for
15 counterparties external to the company, contract managers within Customer Programs & Services
16 (CP&S) serve as the primary contact for collateral issues. Delivery date security and performance
17 assurance is typically posted in the form of cash or letter of credit. Appendix II-N lists the significant
18 activities that took place during the Record Period related to CP&S project development security.

19 2. Conventional and Natural Gas

20 Conventional contracts are typically executed through RFOs or through a bilateral
21 negotiation procurement process. Some of these contracts are executed under industry-standard master
22 agreements with modifications agreed upon through negotiations. These form agreements include the
23 Western Systems Power Pool (WSPP), the Edison Electric Institute (EEI), the North American Energy
24 Standards Board (NAESB), the International Swaps and Derivatives Association (ISDA), the
25 Transmission Resale Enabling Agreement (TREA), and FERC-approved transmission tariff agreements.
26 Some agreements offer an "annex to the agreement" effectuating the right to contract for or trade
27 another product or function under the same agreement. ISDA agreements offer a gas or power annex

1 that enables the trading of both physical and financial transactions under a single agreement. Similarly,
2 EEI offers a gas annex to allow for gas and power trades under the same master EEI agreement.

3 Descriptions of these are included below:

- 4 ● The WSPP, EEI, and power annex to the ISDA agreements are used for physical
5 electricity transactions including tolling agreements;
- 6 ● The NAESB, gas annex to the EEI and gas annex to the ISDA agreements are used
7 for physical natural gas transactions;
- 8 ● The ISDA agreements are used for financial electricity and natural gas transactions;
9 and,
- 10 ● The TREA is used for transmission transactions.

11 SCE's Energy Contracts Management group manages the administration of all enabling
12 agreements required for the purchase and sale of electric and natural gas related products, including
13 physical and financial gas transactions. Transactions for physical gas take place under a NAESB
14 agreement, a gas annex to the ISDA agreement, or a gas annex to the EEI agreement. SCE's financial
15 transactions, if any during the Record Period, would be executed via a broker and then cleared through
16 an exchange with one of the counterparties under an active enabling agreement with SCE. During the
17 Record Period, SCE was enabled to transact with many counterparties to facilitate the purchase and sale
18 of electricity, capacity, physical natural gas, and transmission; and with brokers, clearing firms and
19 trading platforms for financial gas transactions. A list of these agreements is included in Appendix
20 II-B.

21 Each agreement specifies terms and conditions related to performance, events of default,
22 payments, confidentiality requirements, dispute resolution, and other general contractual provisions.
23 SCE may use the agreements in their standard form or agree to special provisions or amended forms of
24 the agreements.

25 These agreements and any transactions done under them, including PPAs and RPAs, are
26 submitted for Commission review in SCE's QCR, via advice letter filing, or in separate advice letters or
27 applications. Once the agreements are in place and other required measures are taken by the parties (*i.e.*,

1 providing collateral, development security, etc.), SCE's Credit Risk group adds the counterparty to
2 SCE's "OK-to-trade" list, as applicable. SCE's traders may then execute transactions in compliance
3 with the requirements of SCE's Financial Risk Management Committee and SCE's Commission-
4 approved AB 57 BPP. Individual transactions underlying each enabling agreement and any amendments
5 are reported in SCE's QCR.⁵⁴

6 a) Contract Administration

7 During the Record Period, SCE administered bilateral transactions, contracts, and
8 enabling agreements related to electric and natural gas purchases and sales, demand response,
9 transmission and emissions offsets. SCE administered these contracts prudently, and according to their
10 terms and conditions.⁵⁵

11 b) Summary of Contract Activity

12 The conventional contracts administered by SCE during the Record Period
13 include tolling confirmations, RA confirmations, transmission contracts, gas storage contracts, gas
14 transportation contracts, demand response resource purchase agreements, and power purchase
15 agreements. The list of transactions active or in SCE's energy contracts portfolio during the Record
16 Period are sorted by types and listed in Appendix II-A. All transactions in Appendix II-A were either
17 approved through the QCR in conformance with the guidelines in SCE's AB 57 BPP or through separate
18 advice letter or application filings with the CPUC.

19 c) Conventional Contract Delivery

20 There were no conventional projects that came on-line or started delivering to
21 SCE during the Record Period.

⁵⁴ Advice letter filings for Q1, Q2, Q3, and Q4 of 2021 were submitted as Advice 4481-E, 4549-E, 4621-E, and 4703-E, respectively.

⁵⁵ Confidential Appendix II-H includes a summary of bilateral power payments during the Record Period, which includes transmission and RA activity payments.

1 d) Contract Development

2 All new contracts executed during the Record Period were filed through either the
3 QCR in conformance with the guidelines in SCE's AB 57 BPP or through the advice letter or
4 application processes, as noted. These are included here in Table II-12 and in Appendix II-B as
5 information only related to contract activity during the Record Period.

Table II-12
New Conventional and Natural Gas Contracts
January 1, 2021 Through December 31, 2021

	ID	Contract Counterparty	Capacity (MW)	Type of Agreement	Date Executed	CPUC Resolution or Decision/SCE Advice Letter/Application
1	11278	San Diego Community Power	-	EEI - Master Agreement	1/4/2021	4481-E
2	11258-1012	Direct Energy Business Marketing, LLC	20 0	EEI - RA Sale	1/11/2021	4481-E
3	11275-1004	Western Community Energy	150 0	EEI - RA Sale	1/11/2021	4481-E
4	11281	Bolt Energy Marketing, LLC	-	EEI - Master Agreement	1/15/2021	4481-E
5	11281-1001	Bolt Energy Marketing, LLC	25 0	EEI - RA Sale	1/15/2021	4481-E
6	11034-1043	Calpine Energy Services LP	250 0	EEI - RA Sale	1/25/2021	4481-E
7	11256-1012	East Bay Community Energy Authority	245 0	EEI - RA Sale	2/2/2021	4481-E
8	11153-1031	Pacific Gas & Electric Company	182 0	EEI - RA Sale	2/10/2021	4481-E
9	11153-1032	Pacific Gas & Electric Company	182 0	EEI - RA Purchase	2/10/2021	4481-E
10	11258-1013	Direct Energy Business Marketing, LLC	20 0	EEI - RA Sale	2/10/2021	4481-E
11	11180-1017	Sempra Gas & Power Marketing, LLC	43 0	EEI - RA Purchase	2/11/2021	4481-E
12	11234-1017	Marin Clean Energy	57 0	EEI - RA Purchase	2/11/2021	4481-E
13	11266-1004	Pioneer Community Energy	18 0	EEI - RA Purchase	2/11/2021	4481-E
14	11034-1044	Calpine Energy Services LP	10 0	EEI - RA Purchase	2/12/2021	N/A
15	11181-1017	Shell Energy North America (US), L P	46 0	EEI - RA Purchase	2/12/2021	4481-E
16	11228-1020	Sonoma Clean Power Authority	45 0	EEI - RA Purchase	2/12/2021	4481-E
17	11240-1002	Shell Energy North America (US), L P	-	GHG Offset Purchase	2/25/2021	4481-E
18	11240-1003	Shell Energy North America (US), L P	-	GHG Offset Purchase	2/25/2021	4481-E
19	11282	KM Ventures, LLC, DBA Freedom Energy	-	NAESB - Master Agreement	3/2/2021	4481-E
20	11253-1017	Central Coast Community Energy	50 0	EEI - RA Sale	3/3/2021	4481-E
21	11181-1018	Shell Energy North America (US), L P	50 0	EEI - RA Sale	3/9/2021	4481-E
22	11234-1018	Marin Clean Energy	29 0	EEI - RA Purchase	3/16/2021	4481-E
23	11252-1017	Peninsula Clean Energy Authority	21 0	EEI - RA Purchase	3/26/2021	4481-E
24	11262-1005	The Energy Authority, Inc	4 0	EEI - Import Allocation Rights Purchase	4/1/2021	4549-E
25	11262-1006	The Energy Authority, Inc	7 4	EEI - Import Allocation Rights Purchase	4/1/2021	4549-E
26	11262-1007	The Energy Authority, Inc	9 7	EEI - Import Allocation Rights Purchase	4/1/2021	4549-E
27	11153-1033	Pacific Gas & Electric Company	94 0	EEI - RA Sale	4/9/2021	4549-E
28	11034-1045	Calpine Energy Services LP	20 0 - 12 0	EEI - RA Purchase	4/13/2021	4549-E
29	11258-1014	Direct Energy Business Marketing, LLC	51 0	EEI - RA Sale	4/19/2021	4549-E
30	11153-1034	Pacific Gas & Electric Company	111 0 - 3 0	EEI - RA Sale	4/21/2021	4549-E
31	11153-1035	Pacific Gas & Electric Company	36 0	EEI - RA Sale	4/21/2021	4549-E
32	11253-1018	Central Coast Community Energy	18 0	EEI - RA Sale	4/21/2021	4549-E
33	11252-1018	Peninsula Clean Energy Authority	20 0	EEI - RA Sale	4/23/2021	4549-E
34	11234-1019	Marin Clean Energy	20 0	EEI - RA Purchase	4/26/2021	4549-E
35	11034-1046	Calpine Energy Services, L P	16 0	EEI - Import Allocation Rights Purchase	4/30/2021	4549-E
36	11034-1047	Calpine Energy Services, L P	34 0	EEI - Import Allocation Rights Purchase	4/30/2021	4549-E
37	11088-1029	Exelon Generation Company, LLC	25 0	EEI - RA Purchase	4/30/2021	4549-E
38	10132	Enersponse Inc	5 0	DRAM Resource Purchase Agreement	5/3/2021	4509-E
39	10134	Leapfrog Power, Inc	35 0 - 14 0	DRAM Resource Purchase Agreement	5/3/2021	4509-E
40	10135	Voltus, Inc	53 5 - 35 0	DRAM Resource Purchase Agreement	5/3/2021	4509-E
41	10133	Enersponse Inc	5 0	DRAM Resource Purchase Agreement	5/4/2021	4509-E
42	11256-1013	East Bay Community Energy Authority	50 0	EEI - RA Sale	5/6/2021	4549-E
43	11265-1005	San Diego Gas & Electric Company	100 0 - 25 0	EEI - RA Purchase	5/13/2021	4549-E
44	11283	NextEra Energy Marketing, LLC	-	EEI - Master Agreement	5/14/2021	4549-E
45	11284-1001	Berry Petroleum Company, LLC	36 3 - 34 8	EEI - RA Purchase	5/20/2021	4549-E
46	11153-1044	Pacific Gas & Electric Company	230 0	EEI - Substitution RA Sale	6/3/2021	4549-E
47	11234-1020	Marin Clean Energy	11 5	EEI - RA Purchase	6/11/2021	4549-E
48	11241-1002	BP Products North America Inc	30,000 0	GHG Offset Purchase	6/11/2021	4549-E
49	11241-1003	BP Products North America Inc	30,000 0	GHG Offset Purchase	6/11/2021	4549-E
50	11081-1014	Elk Hills Power LLC	55 0 - 50 0	EEI - RA Purchase	6/16/2021	4549-E
51	11088-1030	Exelon Generation Company, LLC	55 0	EEI - RA Purchase	6/16/2021	4549-E
52	11146-1017	NRG Power Marketing LLC	15 0	EEI - RA Purchase	6/16/2021	4549-E
53	11246-1017	Clean Power Alliance of Southern California	20 0	EEI - RA Sale	6/16/2021	4549-E
54	11180-1018	Sempra Gas & Power Marketing, LLC	605 0	EEI - RA Sale	6/22/2021	4549-E
55	11034-1050	Calpine Energy Services LP	10 0	EEI - RA Purchase	7/6/2021	4621-E
56	11234-1021	Marin Clean Energy	50 0	EEI - RA Purchase	7/12/2021	4621-E
57	11265-1006	San Diego Gas & Electric Company	75 0	EEI - RA Purchase	7/13/2021	4621-E
58	11181-1019	Shell Energy North America (US), L P	40 0	EEI - RA Sale	7/14/2021	4621-E
59	11181-1020	Shell Energy North America (US), L P	8 0	EEI - RA Purchase	7/14/2021	4621-E
60	11228-1022	Sonoma Clean Power Authority	24 2 - 24 0	EEI - RA Sale	7/14/2021	4621-E
61	11228-1023	Sonoma Clean Power Authority	100 0 - 1 0	EEI - RA Sale	7/14/2021	4621-E
62	11260-1001	Commercial Energy of Montana, Inc	2 0	EEI - RA Sale	7/14/2021	4621-E
63	11260-1002	Commercial Energy of Montana, Inc	5 0 - 1 3	EEI - RA Sale	7/14/2021	4621-E
64	11260-1003	Commercial Energy of Montana, Inc	11 1 - 3 0	EEI - RA Purchase	7/14/2021	4621-E
65	11260-1004	Commercial Energy of Montana, Inc	6 0 - 4 5	EEI - RA Sale	7/14/2021	4621-E
66	11260-1005	Commercial Energy of Montana, Inc	5 1 - 3 0	EEI - RA Sale	7/14/2021	4621-E
67	11285-1001	Desert Harvest II LLC	14 8	RA Purchase Agreement	7/14/2021	4621-E
68	11286-1001	NextEra Energy Marketing, LLC	7 5 - 4 0	RA Purchase Agreement	7/14/2021	4621-E
69	11551-1001	Brookfield Renewable Trading & Marketing	20 0	WSPP - Schedule C Firm Energy Purchase	7/14/2021	4621-E
70	11153-1039	Pacific Gas & Electric Company	535 0 - 165 0	EEI - RA Sale	7/15/2021	4621-E
71	11153-1040	Pacific Gas & Electric Company	535 0 - 165 0	EEI - RA Purchase	7/15/2021	4621-E
72	11228-1024	Sonoma Clean Power Authority	24 0	EEI - RA Purchase	7/15/2021	4621-E
73	11228-1025	Sonoma Clean Power Authority	24 0	EEI - RA Sale	7/15/2021	4621-E
74	11253-1020	Central Coast Community Energy	200 0 - 30 0	EEI - RA Sale	7/15/2021	4621-E
75	11034-1048	Calpine Energy Services LP	200 0	EEI - Substitution RA Sale	7/16/2021	4621-E
76	11034-1049	Calpine Energy Services LP	200 0	EEI - RA Sale	7/16/2021	4621-E
77	11062-1015	EDF Trading North America	36 0	ISDA - RA Purchase	7/16/2021	4621-E
78	11253-1019	Central Coast Community Energy	30 0 - 20 0	EEI - RA Sale	7/16/2021	4621-E
79	11265-1007	San Diego Gas & Electric Company	25 0	EEI - RA Purchase	7/16/2021	4621-E
80	11287-1001	Watson Cogeneration Company	31 0	RA Purchase Agreement	7/22/2021	4621-E

81	11088-1031	Exelon Generation Company, LLC	7 0 - 0 1	EEI - RA Sale	7/23/2021	4621-E
82	11088-1032	Exelon Generation Company LLC	7 0	EEI - RA Purchase	7/23/2021	4621-E
83	11088-1033	Exelon Generation Company LLC	7 0	EEI - RA Sale	7/23/2021	4621-E
84	11261-1002	City of Rancho Cucamonga	3 0 - 1 0	EEI - RA Sale	7/23/2021	4621-E
85	11034-1051	Calpine Energy Services	50 0	EEI - RA Purchase	7/27/2021	4621-E
86	11229-1007	Silicon Valley Clean Energy Authority	120 0 - 1 0	EEI - RA Sale	8/2/2021	4621-E
87	11234-1022	Marin Clean Energy	30 0	EEI - RA Sale	8/2/2021	4621-E
88	11234-1023	Marin Clean Energy	30 0	EEI - RA Purchase	8/2/2021	4621-E
89	11234-1024	Marin Clean Energy	30 0	EEI - RA Sale	8/2/2021	4621-E
90	11252-1019	Peninsula Clean Energy Authority	36 0 - 1 0	EEI - RA Sale	8/2/2021	4621-E
91	11252-1020	Peninsula Clean Energy Authority	80 0 - 20 0	EEI - RA Sale	8/2/2021	4621-E
92	11252-1021	Peninsula Clean Energy Authority	49 0 - 9 0	EEI - RA Sale	8/2/2021	4621-E
93	11256-1016	East Bay Community Energy Authority	35 0 - 1 0	EEI - RA Sale	8/2/2021	4621-E
94	11256-1018	East Bay Community Energy Authority	4 5	EEI - RA Sale	8/2/2021	4621-E
95	11259-1015	CITY & COUNTY OF SF THROUGH ITS PUC, CLEANPOWERSF	142 0 - 74 0	EEI - RA Sale	8/2/2021	4621-E
96	11259-1016	CITY & COUNTY OF SF THROUGH ITS PUC, CLEANPOWERSF	4 0	EEI - RA Sale	8/2/2021	4621-E
97	11266-1005	Pioneer Community Energy	10 0	EEI - RA Sale	8/2/2021	4621-E
98	11266-1006	Pioneer Community Energy	10 0	EEI - RA Purchase	8/2/2021	4621-E
99	11266-1007	Pioneer Community Energy	10 0	EEI - RA Sale	8/2/2021	4621-E
100	11256-1017	East Bay Community Energy Authority	45 1 - 4 9	EEI - RA Sale	8/3/2021	4621-E
101	11062-1016	EDF Trading North America, LLC	30 0	ISDA - RA Purchase	8/10/2021	4621-E
102	11153-1041	Pacific Gas & Electric Company	217 0	EEI - RA Sale	8/16/2021	4621-E
103	11153-1042	Pacific Gas & Electric Company	217 0	EEI - RA Sale	8/16/2021	4621-E
104	11193-1003	Chevron Power Holdings Inc	70 0	EEI - RA Purchase	8/16/2021	4621-E
105	11180-1019	Sempra Gas & Power Marketing, LLC	53 0	EEI - RA Sale	8/17/2021	4621-E
106	11153-1036	Pacific Gas & Electric Company	258 7 - 146 0	EEI - RA Sale	8/18/2021	4621-E
107	11153-1037	Pacific Gas & Electric Company	244 6 - 226 8	EEI - RA Sale	8/18/2021	4621-E
108	11153-1038	Pacific Gas & Electric Company	244 6 - 226 8	EEI - RA Purchase	8/18/2021	4621-E
109	11180-1020	Sempra Gas & Power Marketing, LLC	160 0	EEI - Substitution RA Sale	9/3/2021	4621-E
110	11180-1022	Sempra Gas & Power Marketing, LLC	200 0	EEI - Substitution RA Sale	9/3/2021	4621-E
111	11240-1004	Shell Energy North America (US), L P	50,000 0	GHG Offset Purchase	9/8/2021	4621-E
112	11153-1045	Pacific Gas & Electric Company	402 0 - 378 0	EEI - Substitution RA Sale	9/10/2021	4621-E
113	11153-1046	Pacific Gas & Electric Company	402 0 - 378 0	EEI - Substitution RA Sale	9/10/2021	4621-E
114	11180-1021	Sempra Gas & Power Marketing, LLC	160 0	EEI - Substitution RA Sale	9/10/2021	4621-E
115	11180-1023	Sempra Gas & Power Marketing, LLC	200 0	EEI - Substitution RA Sale	9/10/2021	4621-E
116	11288-1001	AES Redondo Beach, L L C	178 9	EEI - OTC RA Purchase	9/14/2021	4621-E
117	11289-1001	AES Redondo Beach, L L C	175 0	EEI - OTC RA Purchase	9/14/2021	4621-E
118	11291	ORANGE COUNTY POWER AUTHORITY	-	EEI - Master Agreement	9/21/2021	4621-E
119	11541-1011	Bonneville Power Administration	-	WSPP - Transmission Loss Purchase	9/29/2021	4621-E
120	11104-1002	Avangrid Renewables, LLC	36 0	EEI - SubRA Sale	9/30/2021	4621-E
121	13095	Arizona Public Service Company	-	Transmission - Firm	10/13/2021	4703-E-A
122	13096	Arizona Public Service Company	-	Transmission - Non Firm	10/13/2021	4703-E-A
123	11153-1047	Pacific Gas & Electric Company	482 3	EEI - RA Sale	10/14/2021	4703-E
124	11117-1013	CXA La Paloma, LLC	40 0 - 30 0	EEI - RA Purchase	10/19/2021	4703-E
125	11228-1026	Sonoma Clean Power Authority	3 0	EEI - RA Sale	10/21/2021	4703-E
126	11253-1021	Central Coast Community Energy	14 0 - 9 7	EEI - RA Sale	10/21/2021	4703-E
127	11253-1022	Central Coast Community Energy	14 0	EEI - RA Purchase	10/21/2021	4703-E
128	11253-1023	Central Coast Community Energy	14 0	EEI - RA Sale	10/21/2021	4703-E
129	11260-1006	Commercial Energy of Montana, Inc	5 0	EEI - RA Sale	10/22/2021	4703-E
130	11260-1007	Commercial Energy of Montana, Inc	10 0 - 1 0	EEI - RA Sale	10/22/2021	4703-E
131	11291-1001	ORANGE COUNTY POWER AUTHORITY	206 0 - 63 0	EEI - RA Sale	10/25/2021	4703-E
132	11252-1022	Peninsula Clean Energy Authority	58 9 - 23 3	EEI - RA Sale	10/26/2021	4703-E
133	11259-1017	CITY & COUNTY OF SF THROUGH ITS PUC, CLEANPOWERSF	2 2 - 1 0	EEI - RA Sale	10/26/2021	4703-E
134	11259-1018	CITY & COUNTY OF SF THROUGH ITS PUC, CLEANPOWERSF	32 0 - 0 6	EEI - RA Sale	10/26/2021	4703-E
135	11259-1019	CITY & COUNTY OF SF THROUGH ITS PUC, CLEANPOWERSF	78 0 - 5 2	EEI - RA Sale	10/26/2021	4703-E
136	11278-1004	San Diego Community Power	150 0 - 112 3	EEI - RA Sale	10/26/2021	4703-E
137	11279-1004	Ormond Beach Power, LLC	1,491 0	EEI - Substitution RA Sale	10/26/2021	4703-E
138	11073-1017	Moss Landing Power Company, LLC	510 0	EEI - RA Sale	10/27/2021	4703-E
139	11153-1048	Pacific Gas & Electric Company	150 2 - 20 7	EEI - RA Sale	10/27/2021	4703-E
140	11153-1049	Pacific Gas & Electric Company	360 0	EEI - RA Sale	10/27/2021	4703-E
141	11233-1005	City of Lancaster	5 0	EEI - RA Sale	10/27/2021	4703-E
142	11233-1006	City of Lancaster	5 0	EEI - RA Purchase	10/27/2021	4703-E
143	11233-1007	City of Lancaster	5 0	EEI - RA Sale	10/27/2021	4703-E
144	11256-1019	East Bay Community Energy Authority	45 0	EEI - RA Sale	10/27/2021	4703-E
145	11256-1020	East Bay Community Energy Authority	45 0	EEI - RA Purchase	10/27/2021	4703-E
146	11153-1050	Pacific Gas & Electric Company	308 6 - 10 0	EEI - RA Sale	10/28/2021	4703-E
147	11153-1051	Pacific Gas & Electric Company	308 6 - 10 0	EEI - RA Purchase	10/28/2021	4703-E
148	11278-1002	San Diego Community Power	150 0	EEI - RA Purchase	11/2/2021	4703-E
149	11278-1003	San Diego Community Power	150 0	EEI - RA Sale	11/2/2021	4703-E
150	11292	Dynasty Power Inc	-	EEI - Gas Annex	11/18/2021	4703-E
151	11293	NextEra Energy Marketing, LLC	-	EEI - Master Agreement	11/23/2021	4703-E
152	11240-1005	Shell Energy North America (US), L P	15,000 0	GHG Offset	11/23/2021	4703-E
153	11246-1018	Clean Power Alliance of Southern California	40 0	EEI - Import Allocation Rights Sale	11/23/2021	4703-E
154	11034-1052	Calpine Energy Services LP	575 0 - 574 5	EEI - RA Purchase	11/26/2021	4703-E
155	11293-1001	NextEra Energy Marketing, LLC	16 5 - 4 0	EEI - Import RA Purchase	11/30/2021	4703-E
156	11281-1002	Bolt Energy Marketing, LLC	163 0	EEI - Substitution RA Sale	12/3/2021	4703-E
157	11081-1015	Elk Hills Power LLC	30 0	EEI - RA Purchase	12/8/2021	4703-E
158	11081-1016	Elk Hills Power LLC	30 0	EEI - RA Purchase	12/8/2021	4703-E
159	11081-1017	Elk Hills Power LLC	30 0	EEI - RA Purchase	12/8/2021	4703-E
160	11081-1018	Elk Hills Power LLC	30 0	EEI - RA Purchase	12/8/2021	4703-E
161	11246-1019	Clean Power Alliance of Southern California	157 0	EEI - RA Sale	12/10/2021	4703-E

1 e) Contract Amendment Administration

2 The following contract amendments to conventional and natural gas contracts
3 were executed during the Record Period for which SCE is seeking approval through this ERRRA filing as
4 identified in Table II-13.

Table II-13
Conventional and Gas Amendments and Letter Agreements
January 1, 2021 Through December 31, 2021

	ID	Contract Counterparty	Amendment No and Description	Date Executed
1	10051	Stanton Energy Reliability Center, LLC		1/28/2021
2	11252	Peninsula Clean Energy Authority	Amendment No. 1 to Paragraph 10 of the Collateral Annex to modify the collateral threshold due to its updated credit rating.	2/5/2021
3	10047	Walnut Creek Energy, LLC		2/12/2021
4	11080	El Segundo Energy Center LLC		2/12/2021
5	11240	Shell Energy North America (US), L.P.	Amendment No. 1 to add the newly defined term, Direct Environmental Benefits (DEBs) and to update credit and notice provisions to match the latest Offset Agreement.	2/25/2021
6	10001	AES Alamos Energy, LLC		3/1/2021
7	10002	AES Huntington Beach Energy, LLC		3/1/2021
8	11229	Silicon Valley Clean Energy Authority	Amendment No. 1 to Paragraph 10 of the Collateral Annex to modify the collateral threshold due to its updated credit rating.	3/17/2021
9	11025	BP Energy Company		3/19/2021
10	10001	AES Alamos Energy, LLC	Letter Agreement to extend the deadline to negotiate an amendment to May 1, 2021.	4/1/2021
11	10002	AES Huntington Beach Energy, LLC	Letter Agreement to extend the deadline to negotiate an amendment to May 1, 2021.	4/1/2021
12	10001	AES Alamos Energy, LLC	Letter Agreement to extend the deadline to negotiate an amendment to June 1, 2021.	4/29/2021
13	10002	AES Huntington Beach Energy, LLC	Letter Agreement to extend the deadline to negotiate an amendment to June 1, 2021.	4/29/2021
14	11241	BP Products North America Inc.		5/27/2021
15	10001	AES Alamos Energy, LLC	Letter Agreement executed to extend the deadline for amendments to be executed set by prior Letter Agreements to July 1, 2021, to allow time for further amendment negotiations.	5/28/2021
16	10002	AES Huntington Beach Energy, LLC	Letter Agreement executed to extend the deadline for amendments to be executed set by prior Letter Agreements to July 1, 2021, to allow time for further amendment negotiations.	5/28/2021
17	10001	AES Alamos Energy, LLC	Letter Agreement executed to extend the deadline for amendments to be executed set by prior Letter Agreements to Aug 1, 2021, to allow time for further amendment negotiations.	6/30/2021
18	10002	AES Huntington Beach Energy, LLC	Letter Agreement executed to extend the deadline for amendments to be executed set by prior Letter Agreements to Aug 1, 2021, to allow time for further amendment negotiations.	6/30/2021
19	10001	AES Alamos Energy, LLC	Letter Agreement executed to extend the deadline for amendments to be executed set by prior Letter Agreements to September 1, 2021, to allow time for further amendment negotiations.	7/29/2021
20	10002	AES Huntington Beach Energy, LLC	Letter Agreement executed to extend the deadline for amendments to be executed set by prior Letter Agreements to September 1, 2021, to allow time for further amendment negotiations.	7/29/2021
21	11253	Central Coast Community Energy	Amendment No. 1 to Paragraph 10 of the Collateral Annex to modify the collateral threshold due to its updated credit rating.	7/29/2021
22	10001	AES Alamos Energy, LLC		8/31/2021
23	10002	AES Huntington Beach Energy, LLC		8/31/2021
24	10001	AES Alamos Energy, LLC		8/31/2021
25	10002	AES Huntington Beach Energy, LLC		8/31/2021
26	11080	El Segundo Energy Center LLC	This Amendment No. 4 to reflect the additional restriction on daily gas burn, due to an updated air permit issued by the South Coast Air Quality Management District (SCAQMD).	9/20/2021

(1) Stanton Energy Reliability Center, LLC (ID 10051)

Stanton Energy Reliability Center, LLC (Stanton) is a 98 MW gas fired project located in Stanton, California, originally executed as part of SCE's 2013 LCR RFO. The RA Purchase Agreement was executed on November 3, 2014. SCE and Stanton executed Amendment No. 5 on January 29, 2021 to [REDACTED] enhance SCE's audit rights, and the accurate reporting of operations and outages. SCE's customers benefit from this amendment by ensuring transparency and compliance with the agreement and allowing a highly flexible resource to be utilized to provide important reliability benefits to the grid.

(2) Peninsula Clean Energy Authority (ID 11252)

Peninsula Clean Energy Authority (PCE) and SCE executed an EEI Master Power Purchase and Sale Agreement on May 9, 2019, as part of SCE's 2019 RA e-Solicitation. SCE and PCE executed Amendment No. 1 to Paragraph 10 of the Collateral Annex on February 5, 2021, to modify the collateral threshold due to PCE's updated credit rating. SCE's customers benefit from this amendment by ensuring that the collateral threshold appropriately reflects PCE's credit rating.

(3) Walnut Creek Energy, LLC (ID 10047) 2/12

Walnut Creek Energy, LLC (Walnut Creek) is a 478.8 MW gas fired project located in Puente, California, originally executed as part of SCE's 2006 New Gen RFO. SCE and Walnut Creek executed a Power Purchase Tolling Agreement (the "PPTA") on March 5, 2008. After discussions regarding the CAISO system emergencies during the summer of 2020, SCE and Walnut Creek executed Amendment No. 1 on February 12, 2021, to [REDACTED] SCE's customers benefit from this amendment because the [REDACTED]

(4) El Segundo Energy Center LC (ID 11080)

El Segundo Energy Center, LLC (El Segundo) is a 546.19 MW combined cycle gas-fired project located in El Segundo, California, originally executed as part of SCE's 2006 New Gen RFO. SCE and El Segundo executed a Power Purchase Tolling Agreement (the "PPTA") on March 5, 2008. After discussions regarding the CAISO system emergencies during the summer of 2020, SCE

1 and El Segundo executed Amendment No. 3 on February 12, 2021, to [REDACTED]
2 [REDACTED] SCE's customers
3 benefit from this amendment because the [REDACTED]
4 [REDACTED]

5 (5) Shell Energy North America (US), L.P (ID 11240)

6 Shell Energy North America (US), L.P. (Shell) and SCE executed a
7 Master Offset Credit Purchase Agreement (Offset Agreement) on August 1, 2017. Shell and SCE
8 executed Amendment No. 1 on February 25, 2021 to add the newly defined term, Direct Environmental
9 Benefits (DEBs), and to update credit and notice provisions to match the Offset Agreement. SCE's
10 customers benefit from this amendment by complying with the updated Cap-and-Trade regulations.

11 (6) AES Alamitos Energy, LLC (ID 10001)

12 AES Alamitos Energy, LLC (AES) is a 650 MW combined cycle gas-fired
13 project located in Long Beach, CA, originally executed as part of SCE's 2013 LCR solicitation. The
14 PPA was executed on November 3, 2014. SCE and AES executed Letter Agreements on March 1, 2021,
15 April 1, 2021, April 29, 2021, May 28, 2021, June 30, 2021, and July 29, 2021 to extend the deadline to
16 negotiate an amendment up to September 1, 2021. [REDACTED]
17 [REDACTED]
18 [REDACTED] SCE's customers benefit from
19 these Letter Agreements because [REDACTED]
20 [REDACTED]

21 (7) AES Huntington Beach Energy, LLC (ID10002)

22 AES Huntington Beach Energy, LLC (AES) is a 649 MW combined
23 cycle-gas fired project located in Huntington Beach, CA, originally executed as part of SCE's 2013 LCR
24 solicitation. The PPA was executed on November 3, 2014. SCE and AES executed Letter Agreements
25 on March 1, 2021, April 1, 2021, April 29, 2021, May 28, 2021, June 30, 2021, and July 29, 2021, to
26 extend the deadline to negotiate an amendment up to September 1, 2021. [REDACTED]
27 [REDACTED]

1 [REDACTED] SCE's
2 customers benefit from this Letter Agreement because [REDACTED]
3 [REDACTED]

4 (8) Silicon Valley Clean Energy Authority (ID 11229)

5 Silicon Valley Clean Energy Authority (SVCE) and SCE executed an EEI
6 Master Power Purchase and Sale Agreement on February 7, 2018, as part of SCE's 2019 RA
7 e-Solicitation. SCE and SVCE executed Amendment No. 1 to Paragraph 10 to the Collateral Annex on
8 March 17, 2021 to modify the collateral threshold due to SVCE's updated credit rating. SCE's
9 customers benefit from this amendment by ensuring the collateral threshold appropriately reflects
10 SVCE's credit rating.

11 (9) BP Energy Company (ID11025)

12 BP Energy Company (BP) and SCE executed an EEI Master Power Purchase and Sale
13 Agreement on January 27, 2005. On February 23, 2021, SCE purchased physical power from BP as part
14 of the Firm Import Energy RFO. The Confirmations included a special condition that the parties would
15 amend Paragraph 10 to the Collateral Annex. SCE and BP executed Amendment No. 1 on March 19,
16 2021, to increase SCE's Collateral Threshold amount from [REDACTED] SCE's customers
17 benefit from this amendment because of the increased collateral threshold amount.

18 (10) BP Products North America Inc. (ID 11241)

19 BP Products North America Inc. (BP Products) and SCE executed a
20 Master Offset Credit Purchase Agreement (Offset Agreement) on August 1, 2017. BP Products and
21 SCE executed Amendment No. 1 on May 27, 2021, to add the newly defined term, Direct
22 Environmental Benefits (DEBs), and to update credit and notice provisions to match the Offset
23 Agreement. SCE's customers benefit from this amendment by complying with the updated Cap-and-
24 Trade regulations.

25 (11) Central Coast Community Energy (ID 112532)

26 Central Coast Community Energy (CCCE) and SCE executed an EEI
27 Master Power Purchase and Sale Agreement on May 14, 2019, as part of SCE's 2019 RA e-Solicitation.

1 SCE and CCCE executed Amendment No. 1 to Paragraph 10 to the Collateral Annex on July 29, 2021,
2 to modify the collateral threshold due to CCCE's updated credit rating. SCE's customers benefit from
3 this amendment by ensuring the collateral threshold appropriately reflects CCCE's credit rating.

4 (12) AES Alamitos Energy, LLC (ID 10001)

5 AES Alamitos Energy, LLC is a 650 MW combined cycle gas-fired
6 project located in Long Beach, California, originally executed as part of SCE's 2013 LCR solicitation.
7 The PPA was executed on November 3, 2014. SCE and AES executed this Amendment No. 7 on
8 August 31, 2021, to accurately reflect equipment and operational characteristics, and updating other
9 contractual provisions including, [REDACTED]

10 [REDACTED]
11 [REDACTED]
12 [REDACTED]
13 [REDACTED] SCE's customers benefit from these amendments by more accurately representing
14 the capabilities of the resource and realizing a net present value savings of [REDACTED]

15 (13) AES Huntington Beach, LLC (ID 10002)

16 AES Huntington Beach Energy, LLC is a 649 MW combined cycle-gas
17 fired project located in Huntington Beach, California, originally executed as part of SCE's 2013 LCR
18 solicitation. The PPA was executed on November 3, 2014. SCE and AES executed Amendment No. 7
19 on August 31, 2021, to accurately reflect equipment and operational characteristics and update other
20 contractual provisions including, [REDACTED]

21 [REDACTED]
22 [REDACTED]
23 [REDACTED]
24 [REDACTED]
25 [REDACTED]
26 [REDACTED] SCE's customers benefit from these amendments by more accurately representing the
27 capabilities of the resource and realizing a net present value savings of [REDACTED]

1 (14) AES Alamitos Energy, LLC (ID 10001)

2 AES Alamitos Energy, LLC is a 650 MW combined cycle gas-fired
3 project located in Long Beach, California, originally executed as part of SCE's 2013 LCR solicitation.
4 The PPA was executed on November 3, 2014. SCE and AES executed this Amendment No. 8 on
5 August 31, 2021 to [REDACTED]

6 [REDACTED]
7 [REDACTED] SCE submitted for approval on December 10, 2021 via Advice
8 4663-E. SCE's customers benefit from this Amendment because [REDACTED]

9 [REDACTED]
10 [REDACTED]
11 [REDACTED]
12 (15) AES Huntington Beach, LLC (ID 10002)

13 AES Huntington Beach Energy, LLC is a 649 MW combined cycle-gas
14 fired project located in Huntington Beach, California, originally executed as part of SCE's 2013 LCR
15 solicitation. The PPA was executed on November 3, 2014. SCE and AES executed Amendment No.8
16 on August 31, 2021 to [REDACTED]

17 [REDACTED]
18 [REDACTED] SCE submitted for approval on December 10, 2021 via Advice
19 4663-E. SCE's customers benefit from this Amendment because [REDACTED]

20 [REDACTED]
21 [REDACTED]
22 [REDACTED]
23 (16) El Segundo Energy Center LC (ID 11080)

24 El Segundo Energy Center, LLC (El Segundo) is a 546.19 MW combined
25 cycle gas-fired project located in El Segundo, California, originally executed as part of SCE's 2006 New
26 Gen RFO. SCE and El Segundo executed Amendment No. 4 on September 24, 2021, to reflect the
27 additional restriction on daily gas burn, due to an updated air permit issued by the South Coast Air

Quality Management District (SCAQMD). SCE's customers benefit from this amendment by complying with the SCAQMD permit.

f) Contract Assignment Administration

Conventional contracts may only be assigned with the written consent of the parties, which may not be unreasonably withheld. There are many reasons contract counterparties seek to assign their contracts. For example, the counterparty may want to sell or transfer the project to a new entity, sell or assign part of the ownership in the project to tax equity, assign the contract to a lender as security for a loan, or effectuate a change of control of the project. Table II-14 lists the conventional and gas contract consents and assignments to which SCE consented during the Record Period.

***Table II-14
Conventional and Gas Contract Consents and Consents to Assignments
January 1, 2021 Through December 31, 2021***

ID	Contract Counterparty	Consents and Description	Date Executed
10047	Walnut Creek Energy, LLC	Amendment to modify the Consent and Collateral Assignment Agreement to allow the collateral provided under the PPTA to also cover the RA Agreement.	9/28/2021

g) Affiliate Transactions and Contract Information

There were no affiliate conventional contracts during the Record Period.

h) Dispute Resolution and Litigation

Details on conventional project dispute resolution and litigation activities during the Record Period are provided below.

(1) Carson Cogeneration Company, LLC (ID 11038 f/k/a 2087)

Carson Cogeneration Company, LLC (Carson Cogen) was a 48 MW combined cycle gas-fired project located in Carson, California, executed as a part of SCE's PURPA QF procurement requirement as a CHP resource with a steam host. The SO2 PPA was executed on June 10, 1985, and subsequently amended and restated pursuant to the CHP Settlement Agreement on January 31, 2013, including a Master Power Purchase and Sale Agreement and an Amended and Restated Power Purchase and Sale Agreement Confirmation Letter for RA.

1 SCE discovered that Carson Cogen had not been delivering the full
2 amount of RA during the months of March, October, November, and December 2015 and 2016 due to a
3 Net Qualifying Capacity (NQC) amount that was less than the Contract Quantity. SCE invoiced Carson
4 Cogen an amount of [REDACTED] and subsequently netted that amount from their payment on February 3,
5 2017. Carson disputed SCE's netting from their payment and requested mediation. On April 27, 2017,
6 SCE and Carson Cogen held a management meeting to seek resolution on the issue but the parties were
7 not able to resolve the dispute. On June 7, 2017, SCE and Carson Cogen executed a Termination &
8 Shut-Down Agreement, associated Closing Agreement and Assignment (*see* SCE ERR A.18-03-016,
9 SCE-01C, Chapter VII, Section E.2) to allow the plant to cease operation, while preserving Carson
10 Cogen's right to continue to pursue the dispute. On October 9, 2018, Carson Cogen requested dispute
11 resolution under the terms of the agreement, then limiting its claim to [REDACTED] On June 25, 2019,
12 Carson Cogen and SCE attended mediation [REDACTED]
13 [REDACTED] The parties were
14 unable to settle the matter at the mediation. Carson Cogen subsequently filed a lawsuit against SCE in
15 state court, despite the mandatory arbitration provision in the PPA, and subsequently stipulated to stay
16 that litigation while participating in an arbitration, which is in line with the PPA's dispute resolution
17 provisions. The parties engaged in arbitration, culminating in a hearing in late December 2020. The
18 arbitrator agreed with SCE's position, settling the dispute with no payment made to Carson Cogen.
19 This dispute is now closed.

20 i) Contract Termination

21 Table II-15, below, identifies the conventional contract terminations that occurred
22 during the Record Period.

Table II-15
Conventional Contract Terminations
January 1, 2021 Through December 31, 2021

	ID	Project	Contract Type	Termination Date	Notes
1	10128	Desert Community Energy	CCA Service Agreement	4/30/2021	Contract expired in accordance with the terms of the contract
2	11034-1044	Calpine Energy Services LP	EEI - Gas Annex	5/14/2021	
3	13091	Arizona Public Service Company	Transmission - Non Firm	10/14/2021	Agreement expired in accordance with the terms of the contract (Contract 13096 is the renewed agreement)
4	13090	Arizona Public Service Company	Transmission - Firm	10/14/2021	Agreement expired in accordance with the terms of the contract (Contract 13095 is the renewed agreement)
5	10122	Enerwise Global Technologies, LLC	DRAM Resource Purchase Agreement	10/31/2021	
6	10123	Leapfrog Power, Inc	DRAM Resource Purchase Agreement	12/31/2021	
7	10126	Voltus, Inc	DRAM Resource Purchase Agreement	12/31/2021	
8	10124	Resi Station, LLC	DRAM Resource Purchase Agreement	12/31/2021	
9	10125	Resi Station, LLC	DRAM Resource Purchase Agreement	12/31/2021	

j) Inter-utility Contracts

SCE was a party to two⁵⁶ major inter-utility contracts during the Record Period under which it was expected to purchase and/or exchange capacity and associated energy, as shown in Table II-16. The Pasadena inter-utility contract was executed prior to industry restructuring and contains complex terms and conditions that were designed to satisfy the unique needs of SCE and each of the counterparties at the time of execution.

⁵⁶ Excluded from this total are SCE's so-called "Fringe Service" agreements, which provide for small amounts of energy exchanges among neighboring utilities. These include two contracts with the Department of Defense for the Air Force that SCE presented to the Commission in Advice 2686-E and 1777-E and contracts associated with retail tariffs.

Table II-16
Non-Coincident Contract Capacity Quantities and
Expiration Dates for SCE's Major Inter-utility for 2021 Contracts

	<u>ID</u>	<u>Counterparty</u>	<u>Contract Type</u>	<u>Inbound Capacity (MW)</u>	<u>Outbound Capacity (MW)</u>	<u>Expiration Date</u>
1	10045	WAPA/Bureau of Reclamation	Purchase	280.245	0	9/20/2067
2	11048	Pasadena	Exchange	3	15	Evergreen

(1) WAPA / Bureau of Reclamation (ID 10045)

The current contract with Western Area Power Administration (WAPA) and the Bureau of Reclamation, concerning the Boulder Canyon Project or Hoover Dam, was approved by the Commission in D.16-08-017. The delivery term under the contract began October 1, 2017 and will expire on September 30, 2067. There were no contractual changes or modifications associated with this contract during the Record Period.

(2) City of Pasadena Corporation Grant Deed (ID 11048)

On June 20, 1933, SCE and the City of Pasadena (Pasadena) entered into the Corporation Grant Deed that transferred ownership of a hydroelectric powerhouse and accompanying parcels of land in Azusa Canyon to Pasadena. In accordance with the exchange provisions of the Corporation Grant Deed, Pasadena delivers to SCE the entire electrical output of the Azusa Powerhouse (nameplate rated at 3 MW). Pasadena then has 12 months from the time of delivery to SCE to request that SCE return a like amount of energy. SCE charges Pasadena for transmission service on the returned energy. If Pasadena does not request the like amount of energy, or any portion thereof, to be returned within this twelve-month period, Pasadena forfeits any subsequent right to the non-returned energy, and the energy is purchased by SCE at a rate of \$2.50/MWh. There were no contractual changes or modifications associated with this contract during the Record Period.

3. PURPA AND CHP

This section provides information on PURPA and CHP contract management, including contract development, amendments, assignments, uncontrollable force claim administration, forced

1 outage claim administration, dispute resolution, and contract terminations. SCE pursues these activities
2 and programs in accordance with its contract administration principles and practices, and Commission
3 guidelines. The following four fundamental principles have evolved to guide SCE's administration of
4 its PURPA and CHP contracts:

- 5 • SCE's actions must be consistent with Commission directives;
- 6 • PURPA and CHP contract provisions that benefit or protect SCE's customers
7 must be enforced pursuant to a reasonable interpretation of contract language;
- 8 • Contracts with affiliate and non-affiliate PURPA or CHP counterparties are to be
9 administered in a consistent manner; and,
- 10 • Where appropriate, SCE's administration of PURPA and CHP contracts should be
11 consistent with utility and/or industry practice.

12 a) Contract Administration

13 This section discusses SCE's administration of SO1, SO2, SO3, ISO4, NEG
14 (negotiated), QF SOC, and AB 1613 Agreements; these PPAs are referred to in this section as "PURPA
15 contracts," and the projects that generate power for sale to SCE under such contracts are referred to as
16 "PURPA projects." This section also discusses the administration of CHP RFO and CHP Bilateral
17 PPAs; these PPAs are "CHP contracts," and as explained earlier are no longer PURPA contracts, and the
18 projects that generate power for sale to SCE under such contracts are referred to as "CHP projects." As
19 explained below, the Commission has authorized SCE to recover the costs associated with PURPA and
20 CHP contracts, subject to its review of SCE's administration of the contracts.⁵⁷

21 D.97-11-074 held that "costs associated with QF and inter-utility contracts should
22 undergo reasonableness reviews" and that "[a]nnual reviews will include a review of contract
23 administration and litigation costs."⁵⁸ In addressing the reasonableness of PURPA contract
24 administration, the Commission found that utilities must administer their contracts in a prudent manner,

⁵⁷ PURPA: Pub. Util. Code §367(2); D.95-12-063 at p. 130. CHP: D.10-12-035, approving Section 13.2 of Term Sheet.

⁵⁸ D.97-11-074, pp. 125, 127-128.

1 ensure compliance with the terms and conditions of the contracts, and purchase and sell power in a
2 manner that minimizes customer costs. Utilities are to exercise good utility practice in administering
3 contracts. Utilities are expected to engage in those practices, methods, and acts that, in exercising
4 reasonable judgment in light of the facts known when the decision was made, could have been expected
5 to accomplish the desired result at a reasonable cost consistent with good business practices, reliability,
6 safety, and expedition. The prudence standard is intended to include a range of acceptable practices,
7 methods, or acts.⁵⁹

8 D.02-10-062 established the ERRA BA to track utility-retained generation,
9 procurement activities, and purchased power expenses. In the term sheet of the QF Settlement adopted
10 by D.10-12-035, the IOUs are directed to “recover the cost of all payments made pursuant to PPAs and
11 PPA Amendments executed under [the] CHP Program in their respective Energy Resources Recovery
12 Accounts.”⁶⁰ Per D.10-12-035, the Commission adopted terms to allocate “relevant costs, as
13 appropriate,” for purposes of cost recovery through the CAM.⁶¹ Similar to conventional, Table II-17
14 includes PURPA and CHP projects with contract costs recovered through both CAM and the ERRA BA
15 during the Record Period.

⁵⁹ See, e.g., D.90-09-088, pp. 14-16.

⁶⁰ CHP Program Settlement Agreement Term Sheet, October 8, 2010, Section 13.2.1 at p. 56, *available at* https://www.pge.com/includes/docs/pdfs/b2b/energysupply/qualifyingfacilities/settlement/final_term_sheet.pdf.

⁶¹ *Id.* at pp. 55-56, Sections 13.1.1 & 13.1.2.2.

Table II-17
PURPA and CHP Contract Costs Recovered Through CAM and ERRRA BA

	ID	Project	CAM Authorization	Contract Type
1	2155	Chevron USA (Train D)	D.14-07-019	SO1
2	2814	Berry Petroleum Company	E-4553	CHP RFO
3	2818	GFP Ethanol, LLC (Pixley Cogen Partners, LLC)	D.09-12-042	AB1613
4	2819	Berry Petroleum Company	E-4681	CHP RFO
5	2844	Elk Hills	E-4682	CHP RFO
6	2826	U.S. Borax Inc.	E-4681	CHP RFO
7	2829	Watson Cogeneration Company	E-4714	CHP Bilateral
8	2834	Techni-Cast Corporation	D.09-12-042	AB1613
9	2835	CEFF II Tehachapi Property, LLC	N/A	AB1613
10	2845	New-Indy Ontario	E-4681	CHP RFO
11	2847	Houweling Nurseries Oxnard, Inc.	D.09-12-042	AB1613
12	2855	New-Indy Oxnard	E-4681	CHP RFO
13	2872	The Procter & Gamble Paper Products Company	3882-E	CHP RFO
14	2913	The Procter & Gamble Paper Products Company	D.07-09-040	QF SOC
15	2915	Tesoro Refining & Marketing Company, LLC	E-4800	CHP RFO

In this Section, SCE sets forth its recorded PURPA and CHP contract-related expenses and describes its PURPA and CHP contract administration activities, demonstrating that SCE reasonably administered these contracts during the Record Period.⁶²

b) Summary of Contract Activity

During the Record Period, SCE purchased 0.50 billion kWh⁶³ from 32 PURPA contracts and recorded PURPA contract-related costs of \$34.06 million. There were two PURPA projects on-line that sold no power to SCE during the Record Period. SCE also purchased 0.60 billion

⁶² Two summary documents accompany this chapter as appendices. Appendix II-I lists each active PURPA and CHP project and the Commission decision that found the applicable PURPA or CHP contract reasonable and eligible for rate recovery, subject to the contract administration review described above. Appendix II-J sets forth payment and production figures for each active PURPA or CHP project from which SCE purchased power during the Record Period.

⁶³ Purchases in billion kWh from PURPA projects by month were as follows:

Billions of kwh	Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21	Total
PURPA	0.02	0.04	0.06	0.06	0.05	0.04	0.03	0.04	0.03	0.05	0.03	0.05	0.50

kWh⁶⁴ from 9 active CHP contracts, and recorded CHP contract-related costs of \$3.94 million during the Record Period.

There was 1,036 MW of net on-line capacity available for sale to SCE from PURPA and CHP projects during the Record Period (*i.e.*, generating capacity net of station use and other committed on-site loads). This net on-line capacity includes six technologies: (1) biomass; (2) cogeneration or combined heat and power; (3) geothermal; (4) small hydro; (5) solar; and (6) wind.⁶⁵ Approximately 23 percent of SCE's net on-line capacity from PURPA and CHP RFO PPAs is from renewable technologies⁶⁶ (237 net MW), while the remaining 77 percent is from cogeneration or other QFs ineligible to be classified as renewable projects (799 net MW).⁶⁷ No PURPA projects achieved commercial operation during the Record Period. While most CHP and PURPA projects are within SCE's 50,000 square mile service area, SCE also has PURPA and CHP contracts with projects in the service areas of PG&E and the Imperial Irrigation District (IID).

The PURPA and CHP contracts administered by SCE during the Record Period include: four AB 1613 contracts; nine SO1 contracts; one SO2 contract; six SO3 contracts; two ISO4 contracts; six NEG contracts; nine CHP RFO contracts; and, four QF SOC contracts.

c) PURPA and CHP Projects That Achieved Commercial Operation or Started Delivering to SCE under a New Contract

Table II-18 summarizes the PURPA and CHP projects that came on-line or started delivering to SCE under a new contract during the Record Period.

⁶⁴ Purchases in billion kWh from CHP projects by month were as follows:

Billions of kwh	Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21	Total
CHP	0.008	0.006	0.008	0.008	0.007	0.007	0.004	0.003	0.001	0.002	0.003	0.003	0.060

⁶⁵ SCE uses a numbering convention to identify contracts by technology. The 1000 series refers to biomass, the 2000 series refers to cogeneration, the 3000 series refers to geothermal, the 4000 series refers to small hydro, the 5000 series refers to solar, and the 6000 series refers to wind. In previous years, these may have been identified as "RAP ID."

⁶⁶ Renewable technologies include: small hydro projects less than 30 MW, biomass, geothermal, wind, and solar. Though classified as QFs, output from these RPS-eligible projects contribute to RPS goals.

⁶⁷ Note that much of this capacity is due to projects that are currently delivering under Legacy PURPA contracts; however, many of these projects have signed and begun deliveries or will begin deliveries under CHP RFO PPAs in current and upcoming record periods.

Table II-18
PURPA and CHP Contracts that Achieved Commercial Operation
January 1, 2021 Through December 31, 2021

<u>ID</u>	<u>Project</u>	<u>PPA Type</u>	<u>Commercial On-line Date</u>	<u>Capacity (MW)</u>
1 2844	Elk Hills Power, LLC	CHP-RFO	1/1/2021	100.0

d) Contract Development

There were no PURPA and CHP contracts that were entered into during the Record Period.

e) Contract Amendment Administration

Table II-19 summarizes the PURPA and CHP amendments SCE entered into during the Record Period for which it is seeking approval through this ERRA filing.

Table II-19
PURPA and CHP Contract Amendments and Letter Agreements
January 1, 2021 Through December 31, 2021

<u>ID</u>	<u>Project</u>	<u>Amendment or Agreement and Description</u>	<u>Date Executed</u>
1 2844	Elk Hills Power, LLC	Amended and Restated PPA to (i) provide SCE the exclusive right to all energy and related products produced by Elk Hills, in excess of the station use and any of the site host load, up to the Net Contract Capacity, (ii) clarify that Elk Hills will not sell or otherwise put energy to SCE, in excess of what is required in the PPA, and (iii) modify the payment method of the PPA to allow Automated Clearinghouse (ACH) transfer.	1/29/2021
2 2829	Watson Cogeneration Company	Amendment No. 1 to allow for 31 MW of additional capacity September through October 2021 and agree to waive the Forecasting Penalty during the Extra Energy Delivery Term.	7/21/2021
3 2829	Watson Cogeneration Company	Letter agreement to allow for SCE to submit to CAISO a Capacity Procurement Mechanism bid on behalf of Watson for 16.84 MW above its Aug 2021 NQC of 257.16 MW.	8/2/2021

(1) Elk Hills Power, LLC (ID 2844)

Elk Hills Power, LLC (Elk Hills) is a 550 MW (100 MW contracted with SCE) combined cycle gas turbine project located in Tupman California, originally executed as part of SCE's CHP 7 solicitation. The PPA was executed on October 10, 2019. SCE and Elk Hills executed an Amended and Restated PPA on January 29, 2021 to (i) provide SCE the exclusive right to all energy and related products produced by Elk Hills in excess of the station use and any of the site host load up to the Net Contract Capacity, (ii) clarify that Elk Hills will not sell or otherwise put energy to SCE in excess of what is required in the PPA, and (iii) modify the payment method of the PPA to allow Automated Clearinghouse (ACH) transfer. SCE's customers benefit from this Amended and Restated PPA because of the clarified PPA terms and reduced operational costs associated with ACH payments.

(2) Watson Cogeneration Company (ID 2829)

Watson Cogeneration Company is a 274 MW (June through September) or 279 MW (January through May, and October through December) gas-fired cogeneration project located in Carson, CA, originally executed as a bilateral agreement as part of the Settlement Agreement, adopted in D.10-12-035, which permits SCE and potential sellers to establish bilateral agreements for eligible CHP Facilities. The PPA was executed on November 17, 2014. SCE and Watson Cogeneration Company

1 executed Amendment No. 1 on July 21, 2021 to allow for 31 MW of additional dispatchable capacity
2 September and October 2021, and to agree to waive the forecasting penalty during the extra energy
3 delivery term. SCE's customers benefit from the amendment by providing additional capacity and
4 energy serving a grid reliability need for September and October 2021.

(3) Watson Cogeneration Company (ID 2829)

5 Watson Cogeneration Company is a 274 MW (June through September) or 279
6 MW (January through May, and October through December) gas-fired cogeneration project located in
7 Carson, CA, originally executed as a bilateral agreement as part of the Settlement Agreement, adopted in
8 D.10-12-035, which permits SCE and potential sellers to establish bilateral agreements for eligible CHP
9 Facilities. The PPA was executed on November 17, 2014. SCE and Watson Cogeneration Company
10 executed a Letter Agreement on August 2, 2021, to allow for SCE to submit to CAISO a capacity
11 procurement mechanism bid on behalf of Watson for 16.84 MW above its August 2021 NQC of 257.16
12 MW. SCE's customers benefit from this letter agreement by providing additional capacity and energy
13 serving a grid reliability need for August 2021.

14 f) Contract Assignment Administration

15 PURPA and CHP contracts typically may be assigned to other parties based upon
16 the written consent of the parties, which may not be unreasonably withheld. Counterparties may request
17 SCE's consent to assignment of their contracts for many reasons, including the project's sale or transfer
18 to a new entity, sell or assign part of the ownership in the project to tax equity, assign the contract to a
19 lender as security for a loan, or effectuate a change of control of the project. Certain assignments may
20 require SCE to consent to the appointment of a project manager. Table II-20 lists the CHP and PURPA
21 contract consents and assignments to which SCE consented during the Record Period.

Table II-20
CHP and PURPA Contract Consents and Consents to Assignments
January 1, 2021 Through December 31, 2021

ID	Project	Types of Assignment or Consents	Date Signed
1 2847	GH Camarillo, LLC	Consent to Assignment	11/4/2021

g) Affiliate Transactions and Contract Information

SCE had no affiliate PURPA or CHP contracts during the Record Period.

h) Dispute Resolution and Litigation

SCE did not have any PURPA and CHP projects that had dispute resolutions and litigation activities during the Record Period.

i) Uncontrollable Force Administration

SCE's SO₂, ISO₄ contracts, many of its NEG contracts, and CHP contracts include provisions that may excuse a PURPA or CHP project from performing certain contractual obligations to the extent the project can demonstrate that the occurrence of an uncontrollable force prevented the project from performing such obligations. An uncontrollable force is any circumstance beyond a project's reasonable control as defined in the agreements and is often known as a *force majeure*.

Whenever a PURPA or CHP contract holder claims that an uncontrollable force caused it to fail to meet its contractual obligations, SCE undertakes the following activities:

- Determines whether the claim was submitted within the contractually required period, which is typically two weeks;
- Requires that the counterparty submit sufficient evidence to substantiate the claim that an uncontrollable force event occurred. This may include meteorological or weather reports to support a claim of weather damage, construction and equipment specifications, manufacturer maintenance manuals and bulletins, the project's operations and maintenance/repair logs, copies of insurance claims, damage assessments, failure reports, or other relevant materials; and,

• Evaluates whether the suspension of performance was of no greater scope and of no longer duration than was required by the uncontrollable force, and that the contract holder used its best efforts to remedy its inability to perform.

If SCE grants the claim, and if the contract does not provide otherwise, the firm capacity PURPA or CHP contract counterparty will continue to receive firm capacity payments for up to 90 days from the occurrence, despite its inability to deliver power to SCE. Such payments are typically based upon the project's historical performance during the affected time period. In addition, during the period of an approved uncontrollable force event, delivery requirements under the contract are excused.

Table II-21 shows the status of the uncontrollable force claims tendered to SCE or pending during the Record Year.

Table II-21
PURPA and CHP Uncontrollable Force Claims – Tendered or Pending
January 1, 2021 through December 31, 2021

ID	Project	Date and Event	Status
1 3050	Salton Sea Power Generation Co #4	9/23/2021 - Uncontrollable Force claim due to strong area storm causing damage to transmission lines and temporary shutdown of all units at the geothermal plant	SCE accepted the claim in November 2021

j) Forced Outage Claim Administration

A forced outage claim is approved when a project operating pursuant to a PURPA or CHP contract is otherwise capable of generating electricity but is forced to shut down either because SCE is unable to receive the generation due to abnormal system conditions or because of a failure in the project's operations. An approved forced outage claim generally has the same effect upon the project as an approved uncontrollable force claim (otherwise known as a *force majeure*); namely, the project's performance requirements are excused during the period of the forced outage. The forced outage may also be contractually obligated and defined in the contract. There is no deadline specified in the PURPA or CHP contracts by which the counterparty must notify SCE that a forced outage has occurred. However, SCE considers the promptness with which the claim is submitted, among other factors, in determining whether to grant the claim. In assessing the claim, SCE verifies that an outage occurred,

whether the outage resulted from an event that constitutes a forced outage under the contract, and the magnitude and duration of the outage. If appropriate, SCE analyzes meter data, substation logs, and system operations reports in reviewing the claim. Details on PURPA or CHP contracts with forced outage claims during the Record Period are provided below.

(1) Salton Sea Power Generation Company #4 (ID 3050)

Salton Sea Power Generation Co #4 (Salton Sea 4) is a 36 MW geothermal project located in Imperial County, California, originally executed as an ISO4 contract. The PPA was executed on April 16, 1985. Salton Sea 4 submitted a Notice of Event of Uncontrollable Force to SCE on September 3, 2021, as a result of a significant storm that occurred on August 31, 2021, and continued into the first several days of September 2021. Salton Sea 4 claimed the effects of the storm directly impacted the operation of the geothermal plant. The event caused the shutdown of all units and also damaged three major Imperial Irrigation District (“IID”) transmission lines used to support operations and to export power from the facility. Transmission service was restored on September 10, 2021, and the geothermal facility returned to service on September 12, 2021. SCE agrees that the outage qualifies as an uncontrollable force event. SCE recalculated the on-peak capacity factor for September 2021 by adding-back lost hours applicable to the outage and reflecting the adjustment on a subsequent invoice. The claim was accepted by SCE and is closed.

k) Contract Terminations

Table II-22 identifies the terminations that occurred during the Record Period.

Table II-22
PURPA and CHP Contract Terminations
January 1, 2021 Through December 31, 2021

<u>ID</u>	<u>Project</u>	<u>Capacity (MW)</u>	<u>Contract Type</u>	<u>Termination Date</u>	<u>Notes</u>
1 5051	Luz Solar Partners Ltd. IX	80.0	SO2	4/17/2021	Contract expired and no collateral was posted in accordance with the terms of the Agreement.
2 1038	Desert View Power, Inc.	49.9	ISO4	5/1/2021	
3 5066	SCAQMD Solar Port	0.1	SO3	5/28/2021	Contract expired in accordance with the terms of the Agreement via 30-day Notice by counterparty on 4/28/2021. No collateral was posted.
4 2915	Tesoro Refining & Marketing Company LLC	31.0	CHP-RFO	5/31/2021	Contract expired and no collateral was posted in accordance with the terms of the Agreement.
5 2814	Berry Petroleum Company, LLC	39.2	CHP-RFO	6/30/2021	Contract expired and no collateral was posted in accordance with the terms of the Agreement.
6 2060	Tesoro Refining & Marketing Company, LLC	8.0	SO1	11/8/2021	Contract expired and no collateral was posted in accordance with the terms of the Agreement.

4. RPS

Commission Resolutions approving RPS contracts typically provide for the recovery of all payments made pursuant to those contracts, subject to the Commission's review of the reasonableness of SCE's contract administration. These expenses include power purchased pursuant to the RPS contracts discussed in this chapter.

a) Contract Administration

This section provides information on all activities related to the management of RPS contracts, including contract development, amendments, assignments, contract capacity verifications, measurement of energy deliveries, terminations, active monitoring of contracts to ensure the project output qualifies under requirements of the RPS, and activities related to management of projects in the Western Renewable Energy Generation Information System (WREG.IS).⁶⁸

⁶⁸ Throughout this section, any undefined capitalized terms have the meaning set forth in the relevant RPS project contract.

b) Summary of Contract Activity

During the Record Period, SCE purchased 26.53 billion kWh⁶⁹ from 264 RPS contracts and recorded RPS payments of \$2.346 billion.

Below, SCE sets forth its recorded RPS contract-related expenses, describes its RPS contract development and administration activities during the Record Period, and demonstrates that such activities were reasonable.⁷⁰ SCE executes power purchase agreements (referred to as RPS contracts or PPAs) with renewable generators through competitive solicitations, bilateral negotiations, standard contracts, and feed-in tariffs.

Pursuant to AB 1969 and SB 380, SCE administers a feed-in tariff for eligible renewable projects that are 3 MW and less. In July 2013, the Renewable Market Adjusting Tariff (ReMAT) replaced the California Renewable Energy Small Tariff (CREST) and the Water Agency Tariff for Eligible Renewables (WATER) for eligible renewable projects that are 1.5 MW and less. On December 6, 2017, an order was issued by the U.S. District Court for the Northern District of California granting summary judgment in favor of plaintiff Winding Creek Solar LLC in case No. 13-cv-04934-JD. In a letter dated December 15, 2017, the CPUC instructed each of the three IOUs to not execute any new ReMAT contracts, to not hold any new ReMAT program periods, and to not accept any new ReMAT applications effective as of that date. On January 22, 2021, the CPUC approved (1) Advice4331-E/E-A submitted by SCE that presented modifications to ReMAT and to the power purchase agreement pursuant to D.20-10-005, which authorized the re-launch of the ReMAT program, and (2) other pending advice letters (Advice 3660-E/E-A) submitted by SCE for the ReMAT program. At the CPUC's direction, SCE re-launched the program on February 11, 2021. SCE's Energy Contracts Management group administers ReMAT contracts executed in prior years and in the Record Period.

⁶⁹ Purchases in billion kWh from RPS contracts by month were as follows:

Billions of kwh	Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21	Total
ERR	1.595	1.985	2.372	2.781	2.946	2.705	2.386	2.643	2.101	1.967	1.632	1.420	26.53

⁷⁰ Two summary documents accompany this chapter as Appendices II-K and II-L. Appendix II-K lists each RPS project active or terminated during the Record Period and the corresponding Commission application for approval or resolution that found the RPS contract reasonable as to formation Appendix II-L sets forth payment and production figures for each RPS project from which SCE purchased power during the Record Period.

1 Pursuant to Executive Order S-06-06,⁷¹ SCE voluntarily developed a standard
2 biomass program for eligible projects of 20 MW and less. This program was then expanded to all
3 renewable generators through Renewable Standard Contracts (RSC) for generators 5 MW and less
4 (RSC5) and 20 MW and less (RSC20). During the 2010 Record Period, in response to the market, SCE
5 changed the structure of the RSC program and modeled it after SCE's all-source RFOs with reverse
6 auction pricing instead of a fixed price at the Market Price Referent (MPR). In D.10-12-048, issued on
7 December 17, 2010, the Commission adopted the then new procurement process called Renewable
8 Auction Mechanism (RAM) to procure renewable energy from projects 20 MW or less that are RPS-
9 eligible, replacing SCE's RSC program. D.10-12-048 ordered SCE, PG&E, and SDG&E to implement
10 the RAM and procure 1,000 MW allocated across the utilities over a two-year period through
11 competitive auctions using standard non-negotiable contracts.⁷² As a result of these programs, SCE
12 administers many RSC and RAM program contracts.

13 SCE administers the Community Renewables-Renewables Auction Mechanism
14 contracts implementing SB 43's goal to encourage the use of renewable energy, for those who might not
15 have access to products such as solar rooftop. Minimum customer subscription requirement ramps from
16 45 percent in year one to 95 percent in year four and beyond. D.15-01-051,⁷³ D.16-05-006 and
17 Resolution E-4734 established the Green Tariff Shared Renewables (GTSR) program to implement SB
18 43. The Commission ordered the IOUs to use the RAM or ReMAT programs for this advance
19 procurement and to have advance procurement under contract within one year following the issuance of
20 the GTSR Decision. The GTSR Decision further authorized the IOUs to seek approval of a GTSR
21 standard contract through changes to the RAM standard contract using a Tier 2 advice letter.⁷⁴

⁷¹ Signed April 25, 2006, the executive order established a 20 percent biomass target within the 20 percent state RPS target.

⁷² The Commission further clarified details of the RAM program in Resolution E-4414, issued August 22, 2011, Resolution E-4489, issued April 19, 2012 and Resolution E-4546, issued November 8, 2012.

⁷³ D.15-01-051, at p. 27, OP 8, at p. 181.

⁷⁴ See GTSR Decision, OP 5, at p. 180.

1 Following the sixth RAM auction (RAM 6), SCE incorporated the RAM
2 procurement tool into its annual RPS solicitation as the “Standard Contract Option.” The Commission
3 approved this approach in D.14-11-042 and D.15-12-025.⁷⁵ Additionally, in accordance with its tariff
4 and prior Commission decisions, SCE launched its first solicitation for Enhanced Community
5 Renewables (ECR) projects between 0.5 MW and 3 MW using the ECR-Market Adjusting Tariff. D.16-
6 05-006, which was the culmination of Phase IV of the proceeding concerning Applications 12-01-008,
7 12-04-020, and 14-01-007, refined the GTSR Program rules adopted in D.15-01-051. Among other
8 things, D.16-05-006 allowed ECR projects between 500 kW and 20 MW and ECR-Environmental
9 Justice projects, located in SCE’s top 20 percent most impacted communities, between 500 kW and 1
10 MW to participate in newly required solicitations using the RAM tool.⁷⁶ D.16-05-006 also indicated
11 that use of the ReMAT tool to procure ECR projects is no longer required, but each IOU may use the
12 ReMAT tool at its discretion.

13 SCE administers the BioRAM contracts implemented in response to the
14 Emergency Proclamation issued on October 30, 2015, by Governor Brown to protect public safety and
15 property from falling dead trees and wildfire. On March 18, 2016, the Commission issued Resolution
16 E-4770 requiring each IOU to hold a RAM auction targeted at facilities that utilize fuel from high
17 hazard zones (HHZ) in order to procure at least 50 MW (20 MW, PG&E; 20 MW, SCE; and 10 MW,
18 SDG&E). On August 31, 2016, the California legislature passed SB 859 and it was signed into law on
19 September 14, 2016. As a result, the Commission issued Resolution E-4805 on October 21, 2016, to
20 include a new requirement for IOUs to procure their respective shares of capacity from existing biomass
21 facilities using dead and dying trees located in HHZs as feedstock. On December 13, 2018, the
22 Commission issued D.18-12-003 establishing a methodology for calculating a non-bypassable charge to
23 collect revenue to pay for BioRAM procurement by the IOUs through each utility’s public purpose
24 program charge.

⁷⁵ D.14-11-042 at OP 30 and D.15-12-025 at OP 1.

⁷⁶ D.16-05-006 at p. 12.

1 SCE administers California's Bioenergy Market Adjusting Tariff (BioMAT)
2 program. (SB 1122 (Rubio), Stats. 2012, ch. 612, created a new bioenergy feed-in tariff within the
3 procurement programs of the RPS program and required the IOUs to procure an additional 250 MWs) of
4 renewable feed-in-tariff (FiT) resources from small-scale bioenergy projects that commence operation
5 on or after June 1, 2013. In D.14-12-081 and D.15-09-004, the Commission established a bioenergy FiT
6 program, known as the Bioenergy Market Adjusting Tariff (BioMAT). The BioMAT program began
7 offering contracts in February 2016. In D.16-10-025, the Commission implemented several changes to
8 the BioMAT program for generation facilities using forest biomass as fuel (Category 3) in response to
9 the tree mortality emergency identified in the Governor's October 30, 2015 Proclamation of a State of
10 Emergency and SB 840, Stats. 2016, ch. 341. In D.17-08-021, the Commission implemented changes to
11 the capacity limits for generation facilities in the BioMAT program in accordance with amendments
12 made to Section 399.20(f) by AB 1923 (Wood), Stats. 2016, ch. 663. On March 4, 2020, the
13 Commission issued D.20-02-044 approving directed biogas for the BioMAT Program. On October 7,
14 2020, SCE received a Revised Disposition Letter approving Advice 4195-E, but with modifications to
15 the PPA to clarify that projects utilizing directed biogas are eligible to participate in the BioMAT
16 Program, provided they meet all applicable BioMAT Program requirements. On September 1, 2020, the
17 Commission issued D.20-08-043 to revise the BioMAT Program. The Decision extended the BioMAT
18 program end date from February 2021 to December 31, 2025 and directed the IOUs to revise their
19 BioMAT Program tariffs and standard Power Purchase Agreements (PPAs) as necessary to implement
20 the revisions to the BioMAT Program, as provided in the Decision, and further instructed that the IOUs
21 shall begin executing contracts and accepting program participation requests under the revised BioMAT
22 tariff and standard PPA, and offering amendments to existing contracts that are not yet operational, in
23 accordance with D.20 08-043

24 SCE administers the Solar Photovoltaic Program (SPVP). Under SPVP RFOs,
25 SCE conducted solicitations for an overall target of 125 MW of non-utility-owned solar photovoltaic
26 installations over a five-year period, made up of primarily rooftop projects in the 1 to 2 MW range;

1 however, larger systems and ground-mount systems were also eligible to participate.⁷⁷ SCE satisfied its
2 procurement target; therefore, the program is now closed.

3 SCE administers Disadvantaged Communities (DAC) Green Tariff (GT or DAC-
4 GT) and Community Solar Green Tariff (CSGT, or DAC-CSGT). AB 327 (Perea), Stats. 2013, ch. 611,
5 directed the Commission to develop a successor to the then existing Net Energy Metering tariff that
6 included, “promoting the installation of renewable generation among residential customers in
7 disadvantaged communities.” On June 22, 2018, D.18-06-027 adopted alternatives to promote solar
8 distributed generation in DAC, with further corrections and clarifications issued on October 18, 2018.
9 On May 30, 2019, Commission approved via Resolution E-4999, with modifications, tariffs to
10 implement DAC-GT and DAC-CSGT programs. Final approval of Advice 4049-E/E-A providing the
11 procurement plan, RFO and RFI, and non-negotiable contract, was received on December 30, 2019.
12 DAC-GT program provides low-income customers in DACs the option to receive 100 percent of their
13 energy from renewable resources located within a DAC that is anywhere in SCE’s service territory.
14 DAC-CSGT program provides DAC customers the option to receive 100 percent of their energy from a
15 local solar renewable resource located within five miles of a DAC census tract within SCE’s service
16 territory, or within 40 miles of San Joaquin Valley pilot program community identified in D.17-05-014.
17 SCE gives DAC-GT and DAC-CSGT customers a 20 percent discount on their electric bill. SCE is
18 required to launch two DAC-GT and DAC-CSGT RFOs a year, until program caps of DAC-GT 56.50
19 MW and DAC-CSGT 14.63 MW are met.

⁷⁷ On February 11, 2011, SCE filed a Petition for Modification (PFM) of the SPVP, requesting that the Commission increase the competitive solicitation portion of the SPVP from 250 MW to 375 MW, with 125 MW administered under the original SPVP-RFO parameters set forth in D.09-06-049 and Resolution E-4299 and 250 MW administered under revised parameters. The SPVP goals are rated in MW DC. On January 16, 2012, the Commission issued a Decision partially granting SCE’s PFM. The Decision modifies the SPVP to no more than 125 MW each of IPP procurement and utility development, with the amount of ground-mounted facilities increased to 20 percent (25 MW). The 250 MW cut from the original capacity cap were moved to the RAM program (as 200 MW AC). On July 27, 2012, SCE filed a second PFM of the SPVP, requesting that the Commission reduce the 125 MW target for the utility development portion of the SPVP to no more than 91 MW and move the remaining 34 MW to SCE’s RAM allocation (as 31 MW AC). On June 3, 2013, the Commission granted SCE’s second PFM.

1 Projects that are in development or generate power for purchase by SCE under
2 RPS contracts or REC sales from SCE to counterparties under an EEI Confirm, are discussed in this
3 chapter as well and are referred to as “RPS projects.”⁷⁸ There are many renewable projects selling
4 electric power to SCE which have maintained status as QFs and are delivering renewable energy to SCE
5 under a PURPA contract. They are covered in the earlier testimony section for PURPA and CHP.

6 c) RPS Contracts that Achieved Commercial Operation

7 There were no RPS projects that came on-line or started delivering to SCE under
8 a new contract during the Record Period.

9 d) Contract Development

10 Table II-23 below shows the RPS contracts executed during the Record Year.
11 This is for information only as these contracts were either pre-approved or submitted for approval
12 through an advice letter or application as indicated in the table.

⁷⁸ SCE uses a contract numbering convention to identify contracts by technology, where the 1000 series refers to biomass, the 3000 series refers to geothermal, the 4000 series refers to small hydro, the 5000 series to solar, the 6000 series to wind, and a five digit number followed by a dash, and then by a four digit number starting with an “8” (e.g., 11234-8015) refers to REC sales.

Table II-23
New RPS Contracts Executed
January 1, 2021 Through December 31, 2021

	ID	Project	Initial Nameplate Contract Capacity and Expansion Option (MW)	Contract Type	Executed Date	Advice Letter or CPUC Resolution and Date
1	11278-8046	San Diego Community Power	59 0	EEI - Energy + REC Sale	1/4/2021	4392-E
2	11258-8050	Direct Energy Business Marketing, LLC	20 0	EEI - Energy + REC Sale	5/14/2021	4502-E
3	11253-8049	Central Coast Community Energy	41 0	EEI - Energy + REC Sale	5/14/2021	4502-E
4	11283-8056	NextEra Energy Marketing, LLC	47 0	EEI - Energy + REC Sale	5/14/2021	4502-E
5	11271-8054	SRECTrade, Inc	7 0	EEI - Energy + REC Sale	5/14/2021	4502-E
6	11228-8053	Sonoma Clean Power Authority	10 0	EEI - Energy + REC Sale	5/14/2021	4502-E
7	11181-8052	Shell Energy North America (US), L P	12 0	EEI - Energy + REC Sale	5/14/2021	4502-E
8	11246-8048	Clean Power Alliance of Southern California	4 0	EEI - Energy + REC Sale	5/14/2021	4502-E
9	11256-8051	East Bay Community Energy Authority	39 0	EEI - Energy + REC Sale	5/14/2021	4502-E
10	11271-8055	SRECTrade, Inc	-	PCC-3 REC Sale	5/17/2021	4502-E
11	6383	WDG CAPITAL PARTNERS IV, LP	3 0	Re-MAT	7/22/2021	NA - Pre-Approved
12	11271-8057	SRECTrade, Inc	4 0	EEI - Energy + REC Sale	8/24/2021	4576-E, 4576-E-A
13	88063	SRECTrade, Inc	-	PCC-3 REC Sale	8/24/2021	4576-E, 4576-E-A
14	11181-8059	Shell Energy North America (US), L P	6 0	EEI - Energy + REC Sale	8/24/2021	4576-E, 4576-E-A
15	11257-8062	City of San José	125 0	EEI - Energy + REC Sale	8/24/2021	4576-E, 4576-E-A
16	11278-8060	San Diego Community Power	280 0	EEI - Energy + REC Sale	8/24/2021	4576-E, 4576-E-A
17	11228-8058	Sonoma Clean Power Authority	66 0	EEI - Energy + REC Sale	8/24/2021	4576-E, 4576-E-A
18	11278-8061	San Diego Community Power	11 0	EEI - Energy + REC Sale	8/25/2021	4576-E, 4576-E-A
19	5127	Trona Solar III, LLC	2 0	Re-MAT	9/3/2021	NA - Pre-Approved
20	1254	Long Beach Trigen, LLC	2 3	BioMAT	9/14/2021	NA - Pre-Approved
21	11271-8065	SRECTrade, Inc	29 0	EEI - Energy + REC Sale	12/3/2021	4670-E, 4670-E-A
22	11256-8066	East Bay Community Energy Authority	26 0	EEI - Energy + REC Sale	12/3/2021	4670-E, 4670-E-A
23	11228-8067	Sonoma Clean Power Authority	4 0	EEI - Energy + REC Sale	12/3/2021	4670-E, 4670-E-A
24	11291-8064	ORANGE COUNTY POWER AUTHORITY	12 0	EEI - Energy + REC Sale	12/5/2021	4670-E, 4670-E-A

1 e) Contract Amendment Administration

2 After execution, RPS contract terms and conditions may be changed by
3 amendment. Table II-24 below lists the RPS contract amendments SCE entered into during the Record
4 Period and for which it seeks Commission approval through this filing.

Table II-24
RPS Contract Amendments and Letter Agreements
January 1, 2021 Through December 31, 2021

	<u>ID</u>	<u>Project</u>	<u>Amendment Number and Description</u>	<u>Date Executed</u>
1	5885	Blythe Solar II, LLC	Letter Agreement to allow an extension to continue the Pilot Program for another month and allow more time for the project to participate in the AS market.	2/5/2021
2	5882	Sun Streams, LLC	Amendment No. 3 to (i) revise the provision pertaining to excess deliveries calculation, (ii) amend the Performance Assurance Amount, and (iii) update the description of the Generating Facility, and the site legal description.	3/11/2021
3	5805	Imperial Valley Solar 2, LLC	Amendment No. 1 to (i) modify payment method to allow Automated Clearinghouse (ACH) transfer, and (ii) update Generating Facility description to as-built and to reflect new owner of the Generating Facility.	3/11/2021
4	1242	Pacific Ultrapower Chinese Station	Amendment No. 5 to update the Exhibit B of the agreement to allow for updates to metering at the facility to accommodate upgrades at an adjacent site.	3/18/2021
5	5126	Visalia CSG LLC	Letter Agreement to allow Seller to withdraw from its interconnection queue position while the Parties consider an amendment to the PPA to accommodate a change in Project location in exchange for customer savings.	3/25/2021
6	5263	American Kings Solar, LLC	Letter Agreement to postpone the project's Demonstration Date due to changes in protocol as a result of the COVID-19 pandemic, and agree to preliminary Demonstrated Capacity until such time that Demonstrated Contract Capacity can be safely determined by SCE.	4/1/2021
7	5217	Desert Sunlight 250, LLC		4/13/2021
8	5885	Blythe Solar II, LLC	Amendment No. 3 to modify certain provisions associated with the new co-located energy storage project.	4/16/2021
9	5889	Blythe Solar III, LLC	Amendment No. 3 to modify certain provisions associated with the new co-located energy storage project.	4/16/2021
10	5494	McCoy Solar, LLC	Amendment No. 3 to modify certain provisions associated with the new co-located energy storage project.	4/19/2021
11	6330 6331 6332	North Hurlburt Wind, LLC South Hurlburt Wind, LLC Horseshoe Bend Wind, LLC	Letter Agreement to facilitate the transfer of ownership of three projects from Caithness Energy to Brookfield Renewables, and allow potential investors of Brookfield Renewables to review each PPA, arbitration award, and the confidential settlement agreement in accordance with the terms of the settlement agreement.	4/27/2021
12	5804	Copper Mountain Solar 4, LLC	Amendment No. 3 to modify certain descriptions of the Generating Facility to reflect as-built facility, and modify certain outdated defined terms of the Agreement.	6/4/2021
13	11271-8055	SREC Trade, Inc.		6/10/2021
14	5126	Visalia CSG LLC		6/18/2021
15	5124	Phelan Solar, LLC		7/14/2021
16	5264	Maverick Solar, LLC	Amendment No. 1 to reflect a reduction in the contract capacity and replace Exhibit B of the contract to modify the equipment description and the as built design.	7/26/2021
17	1347	Organic Energy Solutions, LLC	Amendment No. 1 to modify various provisions of the Agreement to incorporate the approved changes to the BioMAT program from Decision D.20-08.043	8/3/2021

18	5126	Visalia CSG LLC	Amendment No. 2 to correct the Visalia CSG LLC business formation location and to modify the provisions and defined terms regarding Portfolio Financing of the Project.	9/8/2021
19	88063	SREC Trade, Inc.		9/21/2021
20	5245	Re Gaskell West 1 LLC		9/22/2021
21	5396	SEPV1, LLC	The letter agreement to modify payment method to allow Automated Clearinghouse (ACH) transfer.	11/29/2021
22	5397	SEPV2, LLC	The letter agreement to modify payment method to allow Automated Clearinghouse (ACH) transfer.	11/29/2021

1 (1) Blythe Solar II, LLC (ID 5885)

2 Blythe Solar II, LLC is a 125 MW solar project located in Riverside
3 County, California, originally executed as part of SCE's 2014 RPS Solicitation. The PPA was executed
4 on July 15, 2015. SCE and Blythe Solar II executed a Letter Agreement on December 2, 2020, which
5 set forth the terms and conditions under which SCE and Blythe Solar will participate in a Pilot Program
6 to determine the effectiveness of a large utility-scale solar PV facility as a potential provider of essential
7 ancillary services (AS) to the grid. To continue the Pilot Program for another month, SCE and Blythe
8 Solar II executed this Letter Agreement extension on February 5, 2021, to allow more time for the
9 project to participate in the AS market. SCE's customers benefit from this Letter Agreement by having
10 critical information and data to further study and understand the effectiveness of solar PV facilities in
11 providing AS to support grid reliability.

12 (2) Sun Streams, LLC (ID 5882)

13 Sun Streams, LLC is a 154.27 MW solar project located in Arlington,
14 Arizona, originally executed as part of SCE's 2014 RPS solicitation. The PPA was executed on October
15 9, 2015. SCE and Sun Streams executed Amendment No. 3 on March 11, 2021 to (i) revise the
16 provision pertaining to excess deliveries calculation, (ii) update the description of the generating facility
17 to reflect inverter technical ratings, modified contract capacity, and site legal description, and (iii)
18 amend the performance assurance amount to correspond to the updated contract capacity. SCE's
19 customers benefit from this amendment by having accurate equipment descriptions for the generating
20 facility's design and correct and accurate information available for contract administration.

21 (3) Imperial Valley Solar 2, LLC (ID 5805)

22 Imperial Valley Solar 2, LLC (IVS2) is a 153.52 MW solar project located
23 in Calexico, California, originally executed as part of SCE's 2013 RPS solicitation. The PPA was
24 executed on July 31, 2014. SCE and IVS2 executed Amendment No. 1 on March 11, 2021 to (i) modify
25 certain defined terms and contacts of the Agreement to allow for Automated Clearing House (ACH)
26 payment, and (ii) update generating facility description to as-built and to reflect new owner of the
27 generating facility. SCE's customers benefit from this amendment by reducing the expense associated

1 with the use of the ACH payment method and by having accurate project information available for
2 contract administration.

3 (4) Pacific Ultrapower Chinese Station (ID 1242)

4 Pacific Ultrapower Chinese Station is an 18 MW Biomass project located
5 in Jamestown, California, originally executed as part of SCE's BioRAM 1 solicitation. The PPA was
6 executed on October 18, 2016. SCE and Pacific Ultrapower Chinese Station executed Amendment No.
7 5 on March 18, 2021 to modify the description of the generating facility to reflect updates to metering,
8 site plan, and single-line diagrams to accommodate upgrades at an adjacent site. SCE's customers
9 benefit from this amendment by having correct and accurate information available for contract
10 administration.

11 (5) Visalia CSG, LLC (ID 5126)

12 Visalia CSG LLC is a 3 MW solar project located in Visalia, California,
13 originally executed as part of SCE's Spring 2020 DAC-CSGT solicitation. The PPA was executed on
14 September 18, 2020. SCE and Visalia CSG LLC executed the Letter Agreement on March 25, 2021, to
15 allow the seller to withdraw from its interconnection queue position while the parties consider an
16 amendment to the PPA to address change in project location. SCE's customers benefit from this letter
17 agreement by supporting project viability while preserving SCE's rights under the PPA.

18 (6) American Kings Solar, LLC (ID 5263)

19 American Kings Solar, LLC is a 128 MW solar project located in
20 Lemoore, California originally executed as part of SCE's 2015 RPS solicitation. The PPA was executed
21 on August 3, 2016. SCE and American Kings Solar LLC executed a Letter Agreement on April 1, 2021,
22 to postpone the project's Demonstration Date due to changes in protocol as a result of the COVID-19
23 pandemic and agree to an initial preliminary demonstrated contract capacity of 127,976 kW AC based
24 upon as-built drawings provided by the seller to SCE until such time that the demonstrated contract
25 capacity can be safely determined by SCE. SCE's customers benefit from this amendment by
26 preserving the right under the PPA for a site visit at a future date and by having accurate information
27 available for contract administration.

(7) Desert Sunlight 250, LLC (ID 5217)

Desert Sunlight 250 is a 250 MW solar project located near Desert Center, in Riverside County, California, originally executed as part of a bilateral negotiation. The PPA was executed on August 17, 2009. SCE and Desert Sunlight 250 executed the Amended and Restated PPA on April 13, 2021, incorporating prior amendments and additional modifications agreed-upon by both parties [REDACTED]

[REDACTED]. SCE's customers benefit from these amendments by obtaining curtailment rights, having accurate information available for contract administration and the customer savings associated with the upfront payment in the amount of \$[REDACTED].

(8) Blythe Solar II, LLC (ID 5885)

Blythe Solar II, LLC is a 125 MW solar PV project located in Riverside County, California, originally executed as part of SCE's 2014 RPS Solicitation. The PPA was executed on July 15, 2015. SCE and Blythe Energy Storage II, LLC executed an Energy Storage Resource Purchase and Sale Agreement & Attachments (ES PPA) as part of SCE's 2019 System Reliability RFO – Fast Track (ID 12039). The solar and battery energy storage system projects are co-located. To ensure the efficient operation of the new battery energy storage system project, and in accordance with Advice Letters 4218-E and 4218-EA, SCE and Blythe Solar II, LLC executed Amendment No. 3 on April 16, 2021 to (i) transfer of deliverability from the solar project to the energy storage project, (ii) ensure changes needed at the solar project to allow operation of the storage project are not covered under the compliance expenditure cap, (iii) allow new CAISO meters to accommodate the co-located solar and energy storage projects, (iv) ensure that during any period SCE is not the scheduling coordinator for the storage project, any curtailment at the solar project during RA Periods shall be considered CAISO ordered curtailment, (v) allow for cooperation relating to the energy storage project

1 to the extent the CAISO implements certain policies, options, or capabilities, (vi) add various defined
2 terms to Exhibit A to the contract, and (vii) amend and replace Exhibit B to the contract in its entirety.
3 SCE's customers benefit from this amendment by facilitating the construction and operation of a highly
4 flexible energy storage resource and optimizing the deliverability status of the co-located projects which
5 provides important reliability benefits to the grid.

6 (9) Blythe Solar III, LLC (ID 5889)

7 Blythe Solar III, LLC is a 136.8 MW solar project located in Blythe,
8 California, originally executed as part of SCE's 2014 RPS solicitation. The PPA was executed on
9 October 15, 2015. SCE and Blythe Energy Storage III, LLC executed an Energy Storage Resource
10 Purchase and Sale Agreement & Attachments (ES PPA) as part of SCE's 2019 System Reliability RFO
11 – Fast Track (ID 12040). The solar and battery energy storage system projects are co-located. To
12 ensure the efficient operation of the new battery energy storage system project, and in accordance with
13 Advice 4218-E/E-A, SCE and Blythe Solar III, LLC executed Amendment No. 3 on April 16, 2021 to
14 (i) transfer of deliverability from the solar project to the energy storage project, (ii) ensure changes
15 needed at the solar project to allow operation of the storage project are not covered under the
16 compliance expenditure cap, (iii) allow new CAISO meters to accommodate the co-located solar and
17 energy storage projects, (iv) ensure that during any period SCE is not the scheduling coordinator for the
18 storage project, any curtailment at the solar project during RA periods shall be considered CAISO
19 ordered curtailment, (v) allow for cooperation relating to the energy storage project to the extent the
20 CAISO implements certain policies, options, or capabilities, (vi) add various defined terms to Exhibit A
21 to the contract, and (vii) amend and replace Exhibit B to the contract in its entirety. SCE's customers
22 benefit from this amendment by facilitating the construction and operation of a highly flexible energy
23 storage resource and optimizing the deliverability status of the co-located projects which provides
24 important reliability benefits to the grid.

25 (10) McCoy Solar LLC (ID 5494)

26 McCoy Solar, LLC is a 250 MW solar PV project located in Riverside
27 County, California. The PPA was executed on September 29, 2011. SCE and McCoy Energy Storage,

1 LLC executed an Energy Storage Resource Purchase and Sale Agreement & Attachments (ES PPA) as
2 part of SCE's 2019 System Reliability RFO – Fast Track (ID 12038). The solar and battery energy
3 storage system projects are co-located. To ensure the efficient operation of the new battery energy
4 storage system project, and in accordance with Advice 4218-E/E-A, SCE and McCoy Solar, LLC
5 executed Amendment No. 3 on April 19, 2021 to (i) transfer of deliverability from the solar project to
6 the energy storage project, (ii) ensure changes needed at the solar project to allow operation of the
7 storage project are not covered under the Compliance Expenditure Cap, (iii) allow new CAISO meters to
8 accommodate the co-located solar and energy storage projects, (iv) ensure that during any period SCE is
9 not the Scheduling Coordinator for the storage project, any curtailment at the solar project during RA
10 periods shall be considered CAISO ordered curtailment, (v) allow for cooperation relating to the energy
11 storage project to the extent the CAISO implements certain policies, options, or capabilities, (vi) add
12 various defined terms to Exhibit A to the contract, and (vii) amend and replace Exhibit B to the contract
13 in its entirety. SCE's customers benefit from this amendment by facilitating the construction and
14 operation of a highly flexible energy storage resource and optimizing the deliverability status of the co-
15 located projects which provides important reliability benefits to the grid.

16 (11) North Hurlbert Wind, LLC (ID 6330), South Hurlbert Wind, LLC (ID
17 6331), and Horseshoe Bend Wind, LLC (ID 6332)

18 North Hurlbert (265 MW), South Hurlbert (290MW), and Horseshoe
19 Bend Wind (290 MW) are three wind projects previously owned by Caithness Shephards Flat, LLC
20 (Caithness) located in Arlington, Oregon originally executed as part of SCE's 2007 RPS solicitation.
21 The PPAs were executed on August 14, 2008. SCE and the new owner, Brookfield Renewables,
22 executed a Letter Agreement on April 27, 2021, to allow potential investors to review the PPAs,
23 arbitration award between Caithness and SCE executed on December 10, 2020, and the confidential
24 settlement agreement between Caithness and SCE dated December 7, 2020, in accordance with the
25 aforementioned arbitration award. SCE's customers benefit from this letter agreement by having correct
26 and accurate information available for contract administration.

1 (12) Copper Mountain Solar 4, LLC (ID 5804)

2 Copper Mountain Solar 4, LLC (CMS4) is a 93.6 MW solar project
3 located in Boulder City, Nevada originally executed as part of SCE's 2013 RPS solicitation. The PPA
4 was executed on July 31, 2014. SCE and CMS4 executed Amendment No. 3 on June 4, 2021 to modify
5 certain descriptions of the generating facility to reflect as-built facility, and also modify certain outdated
6 defined terms of the agreement with updated terms. SCE's customers benefit from this amendment by
7 having accurate project information available for contract administration.

8 (13) SREC Trade Inc (ID 11271-8055)

9 SREC Trade Inc. (SREC) and SCE executed a PCC 3 REC Sales
10 Agreement on May 17, 2021 as part of SCE's 2021 REC Sales RFO. SCE and SREC executed this
11 Letter Agreement on June 10, 2021 to waive the Condition Precedent related to CPUC Approval. SCE's
12 customers benefit from this Letter Agreement because it allows for accelerated deliveries of PCC3 RECs
13 with an associated value of [REDACTED]

14 (14) Visalia CSG, LLC (ID 5126)

15 Visalia CSG LLC is a 3 MW solar project located in Visalia, California,
16 originally executed as part of SCE's Spring 2020 DAC-CSGT solicitation. The PPA was executed on
17 September 18, 2020. SCE and Visalia CSG LLC executed Amendment No. 1 on June 18, 2021, to
18 modify the site location, associated terms, and to reduce the contract price by [REDACTED] SCE's
19 customers benefit from this amendment by reducing the product price by [REDACTED] or a total net
20 present value benefit of approximately [REDACTED]

21 (15) Phelan Solar, LLC (ID 5124)

22 Phelan Solar, LLC is a 3 MW solar project located in Mirage, California.
23 The PPA was executed on July 18, 2018, as part of SCE's CR-RAM 3 solicitation. SCE and Phelan
24 Solar, LLC executed Amendment No. 1 on July 14, 2021, to change the panel configuration from fixed-
25 tilt to tracking, reduce the contract price and update Seller contact information. SCE's customers benefit
26 from this amendment by reducing the product price for a total net present value benefit of approximately
27 [REDACTED].

1 (16) Maverick Solar, LLC (ID 5264)

2 Maverick Solar, LLC is a 124.968 MW solar project located in Desert
3 Center, California, originally executed as part of SCE's 2015 RPS Solicitation. The PPA was executed
4 on November 21, 2016. SCE and Maverick Solar, LLC executed Amendment No. 1 on July 26, 2021, to
5 update the description of the generating facility to reflect as-built equipment descriptions, including
6 modified inverter technical ratings and adjusted contract capacity. SCE's customers benefit from this
7 amendment by having accurate equipment descriptions for the generating facility's design available for
8 contract administration.

9 (17) Organic Energy Solutions, LLC (ID 1347)

10 Organic Energy Solutions, LLC (OES) is a 2.6 MW bioenergy project
11 located in San Bernardino, California originally executed as part of BioMAT Program Period 19
12 solicitation. The PPA was executed on January 13, 2020. SCE and OES executed Amendment No. 1 on
13 August 3, 2021, to incorporate certain BioMAT changes approved in D.20-08-043, including
14 modifications to the guaranteed energy production, contract quantity, and performance tolerance band
15 forecasting penalty, and enhance the multi-fuel reporting requirements. SCE's customers benefit from
16 this amendment because it supports the Commission's BioMAT tariff program and the subsequent D.20-
17 08-043 requiring utilities to offer amendments to existing BioMAT program projects that are not yet
18 operational.

19 (18) Visalia CSG, LLC (ID 5126)

20 Visalia CSG LLC is a 3 MW solar photovoltaic project located in Visalia,
21 California, originally executed as part of SCE's Spring 2020 DAC-CSGT solicitation. The PPA was
22 executed on September 18, 2020. SCE and Visalia CSG LLC executed Amendment No. 2 on September
23 8, 2021, to modify the Agreement to correct the Visalia CSG LLC business formation location and to
24 modify financing provisions to allow for portfolio financing. SCE's customers benefit from this
25 amendment by having correct and accurate information available for contract administration.

1 (19) SREC Trade, Inc. (ID 88063)

2 SREC Trade Inc. (SREC) and SCE executed a PCC 3 REC Sales
3 Agreement on August 24, 2021 as part of SCE's 2021 REC Sales RFO. SCE and SREC executed this
4 Letter Agreement on September 21, 2021, to waive the condition precedent related to CPUC approval.
5 SCE's customers benefit from this Letter Agreement because it allows for accelerated deliveries of
6 PCC3 RECs with an associated value of [REDACTED]

7 (20) RE Gaskell West 1, LLC (ID 5245)

8 RE Gaskell West 1, LLC is a 20 MW solar project located in Kern
9 County, California, originally executed as part of SCE's RAM6 solicitation. The PPA was executed on
10 December 18, 2015. SCE and RE Gaskell West 1, LLC executed Amendment No. 3 on September 22,
11 2021 to (i) modify the description of the generating facility to reflect an updated DC Rating, (ii) reduce
12 RE Gaskell West 1, LLC's performance assurance collateral posting obligation [REDACTED]
13 [REDACTED] (iii) modify certain curtailment and forecast provisions and related
14 definitions, and (iv) update the Notice list set forth on Exhibit C of the agreement. SCE's customers
15 benefit from this amendment by having accurate project information available for contract
16 administration, reducing administrative expenses associated with curtailment provision management,
17 and the customer savings associated with the upfront payment in the amount [REDACTED]

18 (21) SEPV 1, LLC (5396)

19 SEPV1, LLC is a 2 MW solar project located in Palmdale, California,
20 originally executed as part of SCE's SPVP1 solicitation. The PPA was executed on September 26,
21 2010. SCE and SEPV1, LLC executed a Letter Agreement on November 29, 2021, to modify the
22 payment method of the agreement to allow Automated Clearinghouse (ACH) transfer. SCE's customers
23 benefit from this letter agreement because of the reduced expense associated with the use of ACH
24 payments.

25 (22) SEPV 2, LLC (5397)

26 SEPV2, LLC is a 2 MW solar project located in Twenty-Nine Palms,
27 California, originally executed as part of SCE's SPVP1 solicitation. The PPA was executed on

1 September 26, 2010. SCE and SEPV2, LLC executed a Letter Agreement on November 29, 2021, to
2 modify the payment method of the agreement to allow Automated Clearinghouse (ACH) transfer.
3 SCE's customers benefit from this letter agreement because of the reduced expense associated with the
4 use of ACH payments.

5 f) Contract Assignment Administration

6 RPS contracts may only be assigned with the written consent of the parties, which
7 may not be unreasonably withheld. There are many reasons RPS contract counterparties seek to assign
8 their contracts. The counterparty might want to sell or transfer the project to a new entity, sell or assign
9 a portion of the project to tax equity, assign the contract to a lender as security for a loan, or a change of
10 control of the project. Table II-25 lists the contract assignments to which SCE consented during the
11 Record Period.

Table II-25
RPS Contract Consents and Consents to Assignments
January 1, 2021 Through December 31, 2021

	ID	Project	Types of Assignment or Consents	Consent Signed
1	5124	Phelan Solar, LLC	Consent to Assignment of Membership Interest	1/15/2021
2	5124	Phelan Solar, LLC	Consent to Assignment of Membership Interest	1/15/2021
3	5652	California PV Energy, LLC	Consent to Assignment of Membership Interest	2/25/2021
4	5653	California PV Energy, LLC	Consent to Assignment of Membership Interest	2/25/2021
5	5263	American Kings Solar, LLC	Consent to Assignment of Membership Interest requested by the Seller to facilitate an internal reorganization.	2/25/2021
6	6358	San Geronio WestWinds II - Windustries	Consent to Assignment of Indirect Membership Interest	3/26/2021
7	6391	Cameron Ridge II	Consent to Assignment of Indirect Membership Interest	3/26/2021
8	6380	Voyager Wind I, LLC	Consent to Assignment of Indirect Membership Interest	3/26/2021
9	6355	Coram Energy LLC	Consent to Assignment of Membership Interest	7/26/2021
10	5747	AVS Phase 2, LLC	Amendment to modify the Financing Consent and Agreement.	9/3/2021
11	5126	Visalia CSG LLC	Consent to Collateral Assignment and Portfolio Financing	9/8/2021
12	5630	RE Adams East LLC	Consent to Assignment of Membership Interest	10/27/2021
13	5755	Catalina Solar 2, LLC	Consent to Assignment of Membership Interest	10/28/2021
14	5149	Community Solar Lancaster 1, LLC	Consent to Assignment	11/17/2021
15	5889	Blythe Solar III, LLC	Consent to Collateral Assignment	11/30/2021

g) Affiliate Transactions and Contract Information

There were no affiliate RPS contracts during the Record Period.

h) Uncontrollable Force Administration

SCE's RPS contracts include provisions that may excuse an RPS project from performing certain contractual obligations to the extent the project can demonstrate that the occurrence of an uncontrollable force, or a circumstance beyond its reasonable control as defined in the agreements (often known as a *Force Majeure*), prevented the project from performing such obligations.

Whenever an RPS contract holder claims that an uncontrollable force caused it to fail to meet its contractual obligations, SCE undertakes the following activities:

- Determines whether the claim was submitted within the contractually required period, which is typically two weeks;

1 • Requires that the counterparty submit sufficient evidence to substantiate the
2 claim that an uncontrollable force event occurred. This may include meteorological or weather reports
3 to support a claim of weather damage, construction and equipment specifications, manufacturer
4 maintenance manuals and bulletins, the project's operations and maintenance/repair logs, copies of
5 insurance claims, damage assessments, failure reports, and other relevant materials; and

6 • Evaluates whether the suspension of performance was of no greater scope and
7 of no longer duration than was required by the uncontrollable force, and that the RPS contract holder
8 used its best efforts to remedy its inability to perform.

9 If SCE grants the claim, and if the contract does not provide otherwise, the RPS
10 contract counterparty receives lost output credit (kWh) for the period of the event, up to 365 days,
11 despite a failure to deliver power to SCE. Lost output credit is applied to the annual production amounts
12 found in the contract to offset any replacement energy damages to compensate SCE customers for
13 nonperformance of the contract. Table II-26 lists the uncontrollable force claims tendered to SCE or
14 pending during the Record Period.

Table II-26
RPS Uncontrollable Force Claims Tendered and/or Pending
January 1, 2021 Through December 31, 2021

<u>ID</u>	<u>Project</u>	<u>Date and Event</u>	<u>Status</u>
1	5208	Solar Partners 1, LLC	9/19/2020 - Force Majeure claim due to area wildfires causing particulate matter that impact their ability to generate electricity
			On December 2, 2020, upon SCE's request, Ivanpah provided a report on the wildfire event to further support its Force Majeure claim. On December 18, 2020, SCE provided feedback on Ivanpah's report and requested further clarification on their data and Lost Output methodology. On March 23, 2021, Ivanpah provided a report and data addressing some of SCE's comments and incorporated the method for calculating Lost Output as prescribed in the PPA. After further discussion and based on the information provided, SCE accepted Ivanpah's claim for Force Majeure on July 22, 2021. SCE considers this claim closed.
2			8/12/2021 - Force Majeure claim due to area wildfires causing particulate matter that impact their ability to generate electricity
			On December 2, 2021, upon SCE's request, Ivanpah provided a report on the wildfire event to further support its Force Majeure claim, along with a calculation of estimated Lost Output. The claim remains pending until SCE completes the Lost Output review for the prior Term Year ended January 31, 2022.

(1) Solar Partners I, LLC (ID 5208)

Solar Partners I, LLC (Ivanpah) is a 117 MW solar thermal project located in San Bernardino County, California, originally executed as a part of SCE's 2008 RPS solicitation. The

1 PPA was executed on February 6, 2009. The following *Force Majeure* claims were active during the
2 Record Period.

3 On September 19, 2020, Ivanpah notified SCE of a *Force Majeure* event
4 after the project experienced lost generation attributed to wildfires in the area causing particulate matter
5 to impact their ability to generate electricity. On September 24, 2020, SCE acknowledged receipt of
6 Ivanpah's notice and requested further supporting documentation of the event. On December 2, 2020,
7 SCE received a report from Ivanpah to further support its *Force Majeure* claim. On December 18, 2020,
8 SCE provided feedback on Ivanpah's report and requested additional clarification on their data and lost
9 output methodology. On March 23, 2021, Ivanpah provided information that addressed some of SCE's
10 comments and incorporated the method for calculating lost output as prescribed in the PPA. After
11 further discussion and based on the information provided, SCE accepted Ivanpah's claim for *Force*
12 *Majeure* regarding the reduced available generation capacity due to the smoke/haze attributed to the
13 California wildfires that occurred between September 6, 2020 and October 27, 2020. The lost output for
14 this claim totals 6,917 MWh. The claim was accepted on July 22, 2021.

15 On August 12, 2021, Ivanpah provided SCE with Notification of a *Force*
16 *Majeure* event related to area wildfires that began in July 2021 and continued into August 2021.
17 Ivanpah asserts that the particulate matter from the fire acted to reduce insolation, impacting Ivanpah's
18 ability to generate electricity. On August 13, 2021, SCE acknowledged receipt of Ivanpah's notice and
19 requested further supporting documentation of the event. On December 2, 2021, SCE received a report
20 from Ivanpah to further support its *Force Majeure* claim, along with calculations for their estimated lost
21 output for the affected period. SCE is currently reviewing Ivanpah's lost output calculation. Since
22 Ivanpah's final lost output report for the prior Term Year (February 1, 2021 through January 31, 2022)
23 has not been received yet, SCE intends to finalize validation of all Lost Output during the review at the
24 end of the Term Year. The aforementioned *Force Majeure* claim remains pending until such time as
25 SCE completes the annual lost output review for the recently completed Term Year.

1 (2) Santa Barbara County BioMAT (ID 1346)

2 Santa Barbara County BioMAT (a.k.a. Tajiguas Resource Recovery
3 Project AD Facility) is a 2.274 MW bioenergy project located in Goleta, California originally executed
4 as part of BioMAT Program Period 19 solicitation. The PPA was executed on January 7, 2020. The
5 following *Force Majeure* claim was active during the Record Period

6 On October 22, 2021, Santa Barbara County (Seller) notified SCE of a
7 *Force Majeure* event regarding potential impacts to performance under the PPA. The Notice of *Force*
8 *Majeure* describes delays related to the Alisal Fire affecting Seller's development activity and Seller's
9 ability to achieve commercial operation by the PPA's guaranteed commercial operation date of January
10 7, 2022. The proximity of the fire to the facility caused the Seller to temporarily cease development
11 activity which caused a cascading effect on the target date for construction completion and anaerobic
12 digester readiness. The Notice of *Force Majeure* recounts the October 12, 2021 vote by the County of
13 Santa Barbara Board of Supervisors to declare a local emergency due to the Alisal Fire, which
14 originated on October 11, 2021 in the Santa Ynez Mountains, west of the facility. The Notice of *Force*
15 *Majeure* also references the October 13, 2021 announcement by Governor Newsom that California had
16 secured a Fire Management Assistance Grant (FMAG) from the Federal Emergency Management
17 Agency (FEMA) to help ensure the availability of vital resources to suppress the Alisal Fire. The Seller
18 provided supplemental letters on December 7, 2021, December 20, 2021, and December 28, 2021 upon
19 SCE's request for further details and support of the claim.

20 In the supplemental letter dated December 28, 2021, the Seller provided a
21 schedule and detail of the steps and timing needed to restart the anaerobic digestion facility and related
22 biological activity. In addition, Seller provided an explanation of how the project would be able to meet
23 the provisions and milestones outlined in the agreement, along with forward looking risk mitigation
24 initiatives. Consequently, Seller projects the commercial operation date to occur on or immediately
25 prior to May 18, 2022, and has requested Force Majeure relief to extend the guaranteed commercial
26 operation date from January 7, 2022 to June 18, 2022, providing for a 30-day contingency in the event
27 of any unforeseen delays.

On January 4, 2022, SCE partially accepted Santa Barbara County's *Force Majeure* claim by granting an extension through the Seller's projected commercial poeration date of May 18, 2022. However, SCE rejected the additional 30-day contingency period. Santa Barbara County is proceeding with development activity under a new guaranteed commercial operation Date of May 18, 2022, and SCE considers this claim closed.

i) Energy Delivery Performance Administration

Some of SCE's RPS contracts include provisions that require a seller to meet certain energy delivery obligations. During the negotiations of the RPS contracts, SCE and the seller set expected annual net energy production targets for the specific projects. These annual production targets function as the basis for determining whether, in a term year, the projects meet their energy delivery obligations. The energy delivery obligation calculation may be performed on either an annual or multi-year basis depending on contract terms. Regardless of the timing of the calculation, the result is either a comparison of the actual annual energy deliveries or the average annual energy delivery over multiple years to determine if the energy delivery obligation has been met.

SCE examines the production of each project and determines if the project has met the energy delivery requirement. Depending on the contract, the seller may request credit for lost production if the loss is attributed to lost output (output the facility otherwise would have produced if not curtailed or subject to an accepted force majeure claim) as defined in the PPA. If a project does not meet its energy delivery requirements after supplementing their energy production with confirmed lost output, the project may be subject to liquidated damages known as energy replacement damage amount.

During the Record Period, calculations regarding annual production were performed on 133 contracts. Of those, 130 contracts were found to have met their annual net energy production target. Three contracts did not meet their required targets and three contracts that did not meet their required targets in 2020 were fully settled in 2021. Additionally, one contract's net energy production target is calculated quarterly and did not meet its required target for two quarters in 2021. Those failures for the contracts that did not meet their required targets and the three contracts from 2020 are described below:

1 (1) California Water Service Company (ID 4205)

2 California Water Service Company, a 0.325 MW hydro facility, had a 24-
3 month (2018 through 2020) performance measurement period production target of 420 MWh and
4 delivered 147 MWh, with no qualified lost output claimed by California Water Service Company to
5 reduce the obligation, leaving a shortfall of 273 MWh. The energy replacement damage amount was
6 calculated to be [REDACTED] which was netted from SCE's payment to California Water Service
7 Company and fully settled in March 2021.

8 (2) Calleguas Municipal Water District (ID 4252)

9 Calleguas Municipal Water District, a 1.0 MW hydro facility, had a 24-
10 month (2019 through 2021) performance measurement period production target of 2.25 GWh and
11 delivered 1.58 GWh, with no qualified lost output claimed by Calleguas Municipal Water District to
12 reduce the obligation, leaving a shortfall of 672 MWh. The energy replacement damage amount was
13 calculated to be [REDACTED] which was netted from SCE's payment to Calleguas Municipal Water
14 District and fully settled in July 2021.

15 (3) US Topco Energy, Inc. (Soccer Center) (ID 5625)

16 US Topco Energy, Inc (Soccer Center), a 3.0 MW solar facility, had a 24-
17 month (2019 through 2021) performance measurement period production target of 11.99 GWh and
18 delivered 11.81 GWh, including 7 MWh submitted by US Topco Energy, Inc (Soccer Center) and
19 confirmed by SCE to qualify as lost output, reducing Soccer Center's obligation and leaving a shortfall
20 of 179 MWh. The energy replacement damage amount was calculated to be [REDACTED] which was
21 netted from SCE's payment to Soccer Center and fully settled in October 2021.

22 (4) Alta Wind IV, LLC (ID 6317)

23 Alta Wind IV, LLC, a 102 MW wind turbine facility, had a 24-month
24 (2018 through 2020) calculation period production target of 335.86 GWh and delivered 318.06 GWh,
25 with no qualified lost output claimed by Alta Wind IV, LLC to reduce the obligation, leaving a shortfall
26 of 17.8 GWh. The energy replacement damage amount was calculated to be [REDACTED] which was
27 netted from SCE's payment to Alta Wind IV, LLC and fully settled in June 2021.

1 (5) Alta Wind V, LLC (ID 6318)

2 Alta Wind V, LLC, a 168 MW wind turbine facility, had a 24-month
3 (2018 through 2020) calculation period production target of 545.30 GWh and delivered 514.59 GWh,
4 with no qualified lost output claimed by Alta Wind V, LLC to reduce the obligation, leaving a shortfall
5 of 30.71 GWh. The energy replacement damage amount was calculated to be [REDACTED] which was
6 netted from SCE's payment to Alta Wind V, LLC and fully settled in June 2021.

7 (6) Alta Wind VIII, LLC (ID 6321)

8 Alta Wind VIII, LLC, a 150 MW wind turbine facility, had a 24-month
9 (2019 through 2021) calculation period production target of 476.14 GWh and delivered 458.58 GWh,
10 including 292 MWh submitted by Alta Wind VIII, LLC and confirmed by SCE to qualify as lost output,
11 reducing Alta Wind VIII, LLC's obligation and leaving a shortfall of 17.26 GWh. The energy
12 replacement damage amount was calculated to be [REDACTED], which was netted from SCE's payment
13 to Alta Wind VIII, LLC and fully settled in September 2021.

14 (7) Mammoth-Pacific, L.P. (ID 3027)

15 Mammoth-Pacific, L.P., a 10.5 MW geothermal facility, has a quarterly
16 Energy Delivery Obligation of at least 20.01 GWh. In the quarter ended June 30, 2021, Mammoth-
17 Pacific, L.P. delivered 16.50 GWh, with no qualified lost output. The shortfall payment obligation was
18 calculated to be [REDACTED] which was netted from SCE's payment to Mammoth-Pacific, L.P. and fully
19 settled in July 2021. In the quarter ended September 30, 2021 Mammoth-Pacific, L.P. delivered 12.78
20 GWh, with no qualified lost output. The shortfall payment obligation was calculated to be [REDACTED]
21 which was netted from SCE's payment to Mammoth-Pacific, L.P. and fully settled in October 2021.

22 j) Dispute Resolution and Litigation

23 Details on RPS Project dispute resolutions and litigation activities during the
24 Record Period are provided below.

25 (1) Sand Canyon of Tehachapi LLC (ID 6341)

26 The Sand Canyon of Tehachapi LLC PPA was terminated by SCE on
27 November 11, 2011 due to network upgrade costs substantially exceeding the cap specified in the PPA.

1 After the termination, GLJ LLC (a lender and previous owner) for the Sand Canyon PPA, asserted its
2 rights, based on a Consent to Collateral Assignment Agreement signed by SCE, Sand Canyon, GLJ, and
3 Sand Canyon's controlling entity, Helo Energy, to take control of the then-terminated PPA. Pursuant to
4 the terms of the Consent to Collateral Assignment Agreement and the PPA, SCE returned the
5 development security of [REDACTED] associated with the PPA to GLJ.

6 On March 28, 2012, Helo Energy and Saugatuck Energy, another claimant
7 to the development security, disregarded the alternative dispute resolution (ADR) provisions of the PPA
8 and filed suit against SCE and several other parties in California Superior Court. The lawsuit claimed
9 that SCE wrongfully terminated the PPA and incorrectly returned the development security to GLJ. The
10 lawsuit also made numerous unrelated allegations against defendants other than SCE, related to the prior
11 sale of the Sand Canyon PPA and assets. SCE moved to compel the ADR of plaintiffs' contract claims
12 under the PPA. The trial court denied the motion and SCE appealed the decision. The Court of Appeal
13 reversed the trial court, ruling that the plaintiffs' claims against SCE must be arbitrated. On remand, the
14 trial court stayed plaintiffs' claims against SCE until the plaintiffs resolve their unrelated claims against
15 the other defendants. That trial was held in California District Court on April 12, 2016. SCE monitored
16 the case. The lawsuit to determine the ownership of the project, which SCE was not a party to, was
17 settled by the litigants in 2019, with Helo prevailing as the owner of the project.

18 Subsequently, Helo is pursuing a claim against SCE for, allegedly,
19 improper termination of the PPA. A mediation between Helo and SCE in October 2020 was
20 unsuccessful in reaching an agreement. On December 18, 2020, Helo issued an arbitration demand to
21 SCE. Helo and SCE are currently engaged in the arbitration of this matter, which is scheduled for the
22 second quarter of 2022, with resolution expected by third quarter of 2022.

23 (2) Mountain View Power Partners IV, LLC (ID 6304)

24 Mountain View Power Partners IV, LLC (MVPP) is a 49 MW wind
25 project located in North Palm Springs, California originally executed as a part of the 2003 RPS
26 solicitation. The PPA was executed on March 8, 2005. On February 6, 2018, MVPP sent SCE a
27 demand for payment for curtailments that occurred during the fourth quarter of 2016 through the second

1 quarter of 2017. MVPP claims that the curtailments were a result of “West of Devers” transmission
2 construction and upgrades, which would be payable under the PPA. SCE reviewed the curtailments and
3 determined that they were not tied to the “West of Devers” project and therefore not payable. On March
4 21, 2018, SCE responded to MVPP rejecting its demand for payment. MVPP requested mediation on
5 August 29, 2019. Mediation occurred on December 11, 2019 and February 26, 2020.

6 SCE and MVPP executed a settlement and release agreement on August
7 17, 2021, in which [REDACTED]

8 [REDACTED]
9 [REDACTED]
10 [REDACTED] The dispute is considered closed. SCE’s customers benefit from
11 the Settlement Agreement and Release by avoiding any costs or potential negative rulings in Alternative
12 Dispute Resolution Proceedings.

13 k) Contract Terminations

14 Table II-27 shows the RPS contracts that terminated during the Record Period.

Table II-27
RPS Contract Terminations
January 1, 2021 Through December 31, 2021

	ID	Project	Contract Capacity (MW)	Contract Type	Termination Date	Note
1	1253	Phelan Park I, LLC	2.7	BioMAT	2/28/2021	
2	11271-8055	SRECTrade, Inc	n/a	PCC-3 REC Sale	6/15/2021	
3	88063	SRECTrade, Inc	n/a	PCC-3 REC Sale	9/23/2021	
4	6333	Mountain View Power Partners, LLC	66.6	ERR	9/30/2021	
5	11181-8039	Shell Energy North America (US), L.P.	18.0	EEI - Energy + REC Sale	12/31/2021	
6	11228-8058	Sonoma Clean Power Authority	66.0	EEI - Energy + REC Sale	12/31/2021	
7	11229-8027	Silicon Valley Clean Energy Authority	46.0	EEI - Energy + REC Sale	12/31/2021	
8	11234-8038	Marin Clean Energy	38.0	EEI - Energy + REC Sale	12/31/2021	
9	11246-8028	Clean Power Alliance of Southern California	86.0	EEI - Energy + REC Sale	12/31/2021	
10	11246-8033	Clean Power Alliance of Southern California	139.0	EEI - Energy + REC Sale	12/31/2021	
11	11246-8034	Clean Power Alliance of Southern California	1.0	EEI - Energy + REC Sale	12/31/2021	
12	11246-8035	Clean Power Alliance of Southern California	80.0	EEI - Energy + REC Sale	12/31/2021	
13	11253-8031	Central Coast Community Energy	86.0	EEI - Energy + REC Sale	12/31/2021	
14	11256-8037	East Bay Community Energy Authority	58.0	EEI - Energy + REC Sale	12/31/2021	
15	11256-8043	East Bay Community Energy Authority	4.0	EEI - Energy + REC Sale	12/31/2021	
16	11257-8018	City of San Jose	69.0	EEI - Energy + REC Sale	12/31/2021	
17	11257-8062	City of San Jose	125.0	EEI - Energy + REC Sale	12/31/2021	
18	11259-8021	CleanPowerSF	52.0	EEI - Energy + REC Sale	12/31/2021	
19	11260-8036	Commercial Energy of Montana, Inc	3.0	EEI - Energy + REC Sale	12/31/2021	
20	11262-8040	The Energy Authority, Inc	14.0	EEI - Energy + REC Sale	12/31/2021	
21	11278-8060	San Diego Community Power	280.0	EEI - Energy + REC Sale	12/31/2021	
22	11278-8061	San Diego Community Power	11.0	EEI - Energy + REC Sale	12/31/2021	

5. BESS

BESS contracts are executed through various Commission-approved solicitations or through bilateral transactions as described in Section A.5. SCE's Energy Contracts Management group currently manages the administration of agreements with BESS, stand-alone, or co-located⁷⁹ (renewable paired with battery energy storage system), with future opportunity for hybrid⁸⁰ projects. Each agreement specifies terms and conditions related to performance, events of default, payments, confidentiality requirements, dispute resolution, and other general contractual provisions. SCE may use the agreements in their standard form or agree to special provisions or amended forms of the agreements. These contracts, once executed by SCE and the BESS developer, are submitted for Commission review and approval via advice letters or applications. The list of transactions active or in SCE's energy contracts portfolio during the Record Period are sorted by types and listed in Appendix II-A.

a) Contract Administration

This section provides information on all activities related to SCE administering contracts with BESS projects, including BESS contracts that achieved commercial operation, contract development, amendments, assignments, and other contract administration activities, during the Record Period, and demonstrates that SCE administered these contracts prudently and according to their terms and conditions. SCE executes and administers RA-only contracts, RA with put option contracts (*i.e.*, RA contracts where the seller also has the option to put the energy dispatch to SCE, essentially becoming a toll), and tolls (RA plus energy and ancillary services) with BESS projects through competitive solicitations or bilateral negotiations.

⁷⁹ As defined by the CAISO: "A Generating Unit with a unique Resource ID that is part of a Generating Facility with other Generating Units" (each with their own Resource ID).

⁸⁰ As defined by the CAISO: "A Generating Unit, with a unique Resource ID at a single Point of Interconnection, with components that use different fuel sources or technologies."

1 b) Summary of Contract Activity

2 SCE administers contracts with BESS⁸¹ projects procured pursuant to AB 2514
3 and through other Commission-approved all-source or preferred resources solicitations for stand-alone
4 or co-located BESS projects such as energy storage RFO, Integrated Distributed Energy Resources
5 (IDER) RFO, Aliso Canyon Energy Storage (ACES) RFO, Distribution Investment Deferral Framework
6 (DIDF) RFO, Local Capacity Requirements (LCR) RFO, and Preferred Resources Pilot (PRP 2)
7 program. The procurement and solicitations that included requests for stand-alone, hybrid or co-located
8 BESS projects in the Record Period are through D.21-03-056 and in response to Governor Newsom's
9 issued Proclamation of State of Emergency, D.21-12-015, and the 2021 Midterm Reliability (MTR)
10 RFO, which are further discussed below. Also included in the discussion below is the closure of the
11 PRP 2 program which was submitted to the Commission during the Record Period.

12 D.21-02-028 required the IOUs to procure capacity to be available during peak
13 and net peak periods over the summer of 2021. D.21-03-056 and in response to Governor Newsom's
14 issued Proclamation of State of Emergency, D.21-12-015, authorized the IOUs to continue procurement
15 efforts to meet and exceed their respective incremental procurement targets to achieve a range of
16 additional procurement authorized in the decisions (Emergency Procurement). D.21-03-056-directed the
17 IOUs to submit contracts to Energy Division via a Tier 1 advice letter on a continuing basis. The net
18 costs associated with this procurement were required to be passed through to all benefiting customers
19 consistent with the existing CAM. SCE's portion of the procurement target was determined to be
20 between 950 MW and 1,350 MW for the summers of 2022 and 2023.

21 On July 29, 2021, SCE informed the Commission of its decision to end the PRP 2
22 program, submitted in Advice 4551-E. SCE continues to administer contracts executed with BESS
23 developers in the PRP 2 Program.⁸² The PRP program was a multi-year study designed to determine
24 whether clean energy resources, including EE, DR, Renewable Distributed Generation, and BES, can be

⁸¹ SCE uses a contract numbering convention to identify contracts with BESS identified by a five-digit number starting with "12xxx" (e.g. 12002), refers to a contract with a BESS.

⁸² D.18-07-023 authorized SCE to recover in rates, payments made pursuant to the executed contracts.

1 acquired and deployed to offset the increasing customer demand for electricity in portions of central and
2 south Orange County. The growing gap between supply and demand for electricity in the PRP area was
3 due in part to the closure of the San Onofre Nuclear Generating Station and the impending retirement of
4 nearby ocean-cooled power plants, known as Once-Through-Cooling (OTC), which may affect grid
5 reliability.

6 SCE launched the 2021 MTR RFO⁸³ on July 30, 2021, in which SCE is seeking to
7 procure a total of 3,948 MW⁸⁴ to be online as follows: 687 MWs to be online in 2023, 2,060 MW to be
8 online in 2024, 515 MW to be online in 2025, and 687 MW to be online in 2026, with a minimum zero-
9 emitting capacity of 858 MW by 2025. This significant procurement is a result of the IRP process,
10 which aims to bolster system reliability, backfill various projected power plant retirements, and assist in
11 clean energy and decarbonization goals.

12 SCE is splitting its procurement activities into two RFOs. In the 2021 MTR RFO,
13 which extends into 2022, SCE is seeking to procure eligible resources⁸⁵ to be online in 2023 and 2024,
14 and in the 2022 MTR RFO, SCE will seek to procure resources to be online in 2025 and 2026. SCE's
15 immediate focus is the 2021 MTR RFO for 2023 and 2024 online resources and will launch a
16 subsequent solicitation for 2025 and 2026 online resources. The 2021 MTR RFO is further bifurcated
17 into a Fastrack in which SCE seeks projects capable of coming online by August 1, 2023, and certain
18 select projects coming online by June 1, 2024, and the Standard Track in which SCE seeks to procure
19 the remaining balance of the 2024 need. In addition, pursuant to D.21-06-035, SCE is also seeking RA
20 capacity for the Diablo Canyon replacement.

⁸³ Pursuant to D.21-06-035.

⁸⁴ SCE is soliciting stand-alone renewables, renewables paired with battery energy storage system, hybrid or co-located, and stand-alone battery energy storage system In Front of the Meter products and procurement minimum obligations defined in D.21-06-035, Table 6.

⁸⁵ Eligible resources shall be zero-emitting (unless they otherwise qualify under the RPS eligibility requirements).

c) BESS Contracts that Achieved Commercial Operation

Table II-28 shows the BESS projects that came on-line or started delivering to SCE under a new contract during the Record Period.

Table II-28
BESS Projects that Achieved Commercial Operation
January 1, 2021 through December 31, 2021

	<u>ID</u>	<u>Project</u>	<u>Commercial On-line Date</u>	<u>Capacity (MW)</u>
1	12001	AES ES Alamitos, LLC	1/1/2021	100.0
2	12027	ORNI 34 LLC	4/1/2021	10.0
3	12022	Acorn I Energy Storage LLC	6/1/2021	1.5 - 1.0
4	12026	Silverstrand Grid LLC	6/1/2021	11.0
5	12028	Ventura Energy Storage, LLC	7/1/2021	100.0
6	12002	Johanna Energy Center, LLC	8/1/2021	20.0
7	12037	Gateway Energy Storage, LLC	8/1/2021	100.0
8	12038	McCoy Energy Storage, LLC	8/1/2021	230.0
9	12039	Blythe Energy Storage II, LLC	8/1/2021	115.0
10	12040	Blythe Energy Storage III, LLC	8/1/2021	115.0
11	12035	SP Garland Solar Storage, LLC	9/1/2021	88.0
12	12036	Edwards Sanborn Storage I, LLC	9/1/2021	50.0
13	12025	Wildcat I Energy Storage LLC	10/1/2021	1.5 - 3.0
14	12034	SP Tranquillity Solar Storage, LLC	11/13/2021	72.0

d) Contract Development

Table II-29 shows the BESS contracts executed during the Record Year. This is for information only as these contracts were submitted for approval through an advice letter or application as indicated in the table.

Table II-29
***New BESS Contracts Executed,
Pre-Approved or Submitted for Approval
January 1, 2021 through December 31, 2021***

	<u>ID</u>	<u>Project</u>	<u>Initial Nameplate Contract Capacity and Expansion Option (MW)</u>	<u>Contract Type</u>	<u>Executed Date</u>	<u>Advice Letter or CPUC Resolution and Date</u>
1	12045	Sunlight Storage, LLC	230 0	Power Purchase Tolling Agreement	10/18/2021	4680-E
2	12046	CONDOR ENERGY STORAGE, LLC	200 0	RA Purchase Agreement	12/6/2021	4739-E
3	12047	PEREGRINE ENERGY STORAGE, LLC	100 0	RA Purchase Agreement	12/6/2021	4739-E

e) Contract Amendment Administration

After execution, BESS contract terms and conditions may be changed by amendment.

Table II-30 lists the BESS contract amendments SCE entered into during the Record Period and for which it seeks Commission approval through this filing.

Table II-30
BESS Contract Amendments and Letter Agreements
January 1, 2021 through December 31, 2021

	ID	Contract Counterparty	Amendment No and Description	Date Executed
1	12002	Johanna Energy Center, LLC	Amendment No. 7 to modify delivery date to accommodate interconnection delays and commercial operation date readiness.	1/12/2021
2	12021	Quarantina Energy Storage, LLC		2/1/2021
3	12026	Silverstrand Grid LLC	Amendment No. 2 to update the description of the equipment specifications to reflect the latest design.	2/2/2021
4	12002	Johanna Energy Center, LLC	Letter Agreement to correct scriber's error of incorrect year reference.	3/3/2021
5	12032	Painter Energy Storage, LLC	Forbearance Agreement to allow project to pursue a Firm Charging Study pursuant to the settlement in FERC Docket No. ER19-2505 and have SCE forbear from exercising its rights and remedies on Seller Event of Default.	3/12/2021
6	12028	Ventura Energy Storage, LLC	Amendment No. 3 to address potential effects of the FERC WDAT Settlement (FERC Docket No. ER19-2505).	3/17/2021
7	12002	Johanna Energy Center, LLC	Amendment No. 8 to address potential effects of the FERC WDAT Settlement (FERC Docket No. ER19-2505).	4/6/2021
8	12039	Blythe Energy Storage II, LLC	Letter Agreement to allow Seller to transfer RA Product to SCE in lieu of an RPS RA Deficit Payment for the Showing Months of June and July 2021.	4/16/2021
9	12028	Ventura Energy Storage, LLC	Amendment No. 4 to update certain delivery date provisions within the PSA to accommodate interconnection delay and commercial operation date readiness.	4/19/2021
10	12034	SP Tranquillity Solar Storage, LLC	Amendment No. 2 to address the timing under which SP Tranquillity can exercise the Energy Put Option provision and clarifies the conditions that must be met before any Energy Put Options are exercised.	5/5/2021
11	12035	SP Garland Solar Storage, LLC	Amendment No. 1 to modify the timelines associated with exercising the Energy Put Option.	5/7/2021
12	12003	Orange County Energy Storage 2 LLC	Amendment No. 6 executed to allow OCES2 to revise its Expected Initial Delivery Date and Initial Delivery Deadline to accommodate interconnection delays and commercial operation date readiness.	5/24/2021
13	12004	Orange County Energy Storage 3 LLC	Amendment No. 6 to allow OCES2 to revise its Expected Initial Delivery Date and Initial Delivery Deadline to accommodate interconnection delays and commercial operation date readiness.	5/24/2021
14	12010	Vesi Pomona Energy Storage, Inc.	Amendment No. 2 to address potential effects of the FERC WDAT Settlement and provide options for VESI Pomona Energy Storage resulting from a Firm Charging study in the event the study identifies reimbursable network upgrade costs.	6/8/2021
15	12022	Acorn I Energy Storage LLC	Amendment No. 2 to memorialize the expected initial delivery date which changed as a result of Force Majeure and payment of Daily Delay of Liquidated Damages and also to update the capacity payment schedule and shaping to accommodate the update EIDD.	6/23/2021

16	12032	Painter Energy Storage, LLC	Amendment No. 1 to the Forbearance Agreement to modify the Outside Date for a one month extension from 7/30/21 to 8/30/21, to allow Seller additional time to execute and close the sale with the new project owner.	7/20/2021
17	12036	Edwards Sanborn Storage I, LLC	Amendment No. 1 to modify financing provisions to include proforma and fallback portfolio financing provisions.	7/20/2021
18	12034	SP Tranquillity Solar Storage, LLC		7/21/2021
19	12035	SP Garland Solar Storage, LLC		7/21/2021
20	12034	SP Tranquillity Solar Storage, LLC	Amendment No. 3 to modify the obligations and timelines associated with testing.	7/21/2021
21	12035	SP Garland Solar Storage, LLC	Amendment No. 2 to modify the obligations and timelines associated with testing.	7/21/2021
22	12037	Gateway Energy Storage, LLC	Amendment No. 2 to extend deadline for the project to complete the Initial Commercial Operations Test for when the project reaches full capacity, estimated for 8/2021.	7/22/2021
23	12038	McCoy Energy Storage, LLC	Letter Agreement to temporarily waive McCoy's obligation to achieve CAISO Certification as of August 1, 2021, as McCoy had completed the prerequisites and was awaiting CAISOC's final determination	7/30/2021
			Letter Agreement to temporarily waive the obligation to install physical and logical control systems capable of preventing grid charging for a period ending no later than August 13, 2021, and agree that any grid charging shall be deemed to be an SCE Grid Charging Event.	
			Amendment No. 3 (i) modified language to allow McCoy to operate as a merchant generator, (ii) require SCE to be the Scheduling Coordinator Metering Entity (SCME) and for McCoy to contract for third-party SCME costs, (iii) update the project description and update the testing protocols.	
24	12039	Blythe Energy Storage II, LLC	Letter Agreement to temporarily waive Blythe II's obligation to achieve CAISO Certification as of August 1, 2021, as Blythe II had completed the prerequisites and was awaiting CAISOC's final determination	7/30/2021
			Letter Agreement to temporarily waive the obligation to install physical and logical control systems capable of preventing grid charging for a period ending no later than August 13, 2021, and agree that any grid charging shall be deemed to be an SCE Grid Charging Event.	
			Amendment No. 3 (i) modified language to allow Blythe II to operate as a merchant generator, (ii) require SCE to be the Scheduling Coordinator Metering Entity (SCME) and for Blythe II to contract for third-party SCME costs, (iii) update the project description and update the testing protocols.	

25	12040	Blythe Energy Storage III, LLC	Letter Agreement to temporarily waive Blythe III's obligation to achieve CAISO Certification as of August 1, 2021, as Blythe III had completed the prerequisites and was awaiting CAISOC's final determination	7/30/2021
			Letter Agreement to temporarily waive the obligation to install physical and logical control systems capable of preventing grid charging for a period ending no later than August 13, 2021, and agree that any grid charging shall be deemed to be an SCE Grid Charging Event.	
			Amendment No. 3 (i) modified language to allow Blythe III to operate as a merchant generator, (ii) require SCE to be the Scheduling Coordinator Metering Entity (SCME) and for Blythe III to contract for third-party SCME costs, (iii) update the project description and update the testing protocols.	
26	12034	SP Tranquillity Solar Storage, LLC	Letter Agreement to allow Tranquillity to satisfy insurance requirements in Sections 14.07(c) through (f) using the parent Southern Company corporate level insurance policy.	8/13/2021
27	12042	Sonoran West Solar Holdings, LLC	Amendment No. 2 to clarify the (i) Compliance Expenditure Cap during a change in RA Law (ii) modifies the timelines associated with exercising the Energy Put Option, and (iii) updates Agreement definitions for a pending Portfolio Financing.	8/16/2021
28	12032	Painter Energy Storage, LLC	Amendment No. 2 to the Forbearance Agreement to modify the Outside Date, a three weeks extension from 8/30/21 to 9/17/21, to allow Seller additional time to execute and close the sale with the new project owner.	8/17/2021
29	12035	SP Garland Solar Storage, LLC	Letter Agreement to allow Garland to satisfy insurance requirements in Sections 14.07(c) through (f) using the parent Southern Company corporate level insurance policy.	8/25/2021
30	12036	Edwards Sanborn Storage I, LLC	Letter Agreement to provide a one-time exception for Seller to submit their initial RA Supply Plan (for the Showing Month of October 2021 only) up to, but no later than, August 31, 2021 (the day before the RA Compliance Showing curing deadline of September 1, 2021). This one-time exception will allow SCE to show the project's RA on its October RA Plan.	8/27/2021
31	12036	Edwards Sanborn Storage I, LLC	Amendment No. 2 to allow the project to achieve its Initial Delivery Date (IDD) on September 1, 2021 by deferring completion of the project's Initial Commercial Operation Test to a later date after the project reaches full capacity (50 MW), but before the Initial Delivery Deadline of December 1, 2021.	8/27/2021
32	12033	Goleta Energy Storage, LLC		8/30/2021
33	12035	SP Garland Solar Storage, LLC	Letter Agreement to allow the project to achieve commercial operation while the Certification is being drafted by CAISO.	9/2/2021
34	12003	Orange County Energy Storage 2 LLC	Amendment No. 7 to update the delivery period and monthly capacity payment table under the Appendix to formally capture the changes from Amendment No. 6.	9/8/2021
35	12004	Orange County Energy Storage 3 LLC	Amendment No. 7 to modify the Delivery Period and Monthly Capacity Payment Appendix to reflect the updated Expected Initial Delivery Date established in Amendment No. 6.	9/8/2021

36	12035	SP Garland Solar Storage, LLC	Amendment No. 3 to modify the language permitting for an Initial Delivery Date occurring on a day other than the first day of a month. The Amendment also amends the SCE Grid Charging Event definition to remove reference to ITC Losses.	9/9/2021
37	12032	Painter Energy Storage, LLC	Amendment No. 3 to the Forbearance Agreement to modify the Outside Date, a two weeks extension from 9/17/21 to 10/1/21, to allow Seller additional time to execute and close the sale with the new project owner.	9/17/2021
38	12032	Painter Energy Storage, LLC	Amendment No. 2 to (i) update the Delivery Period, (ii) update certain delivery date provisions, (iii) adjust the Predicted Capacity of the Project, (iv) update the Monthly Capacity Payment provision, (v) update the Critical Path Development Milestones, and (vi) update other related provisions.	9/22/2021
39	12034	SP Tranquillity Solar Storage, LLC	Amendment No. 4 modifies the contract language to allow for an Initial Delivery Date to occur on a day other than the first day of a month. It also amends the SCE Grid Charging Event definition to remove reference to ITC Losses.	9/24/2021
40	12005	Hecate Energy Johanna Facility LLC	Amendment No. 5 to (i) modify the Expected Initial Delivery Date from January 1, 2021 to December 1, 2021, (ii) establish the end of the Delivery Period as no later than September 30, 2031, (iii) modify the Initial Delivery Deadline from September 1, 2021 to February 1, 2022, (iv) and update the Milestones Schedule.	9/24/2021
41	12006	Hecate Energy Johanna Facility LLC	Amendment No. 5 to (i) modify the Expected Initial Delivery Date from January 1, 2021 to December 1, 2021, (ii) establish the end of the Delivery Period as no later than September 30, 2031, (iii) modify the Initial Delivery Deadline from September 1, 2021 to February 1, 2022, (iv) and update the Milestones Schedule.	9/24/2021
42	12025	Wildcat I Energy Storage LLC		10/21/2021
43	12038	McCoy Energy Storage, LLC	Letter Agreement to correct an incorrect Effective Date in recitals of the Consent to Assignment.	11/2/2021
44	12001	AES ES Alamos, LLC	Amendment No. 6 to (i) modify timelines associated with exercising the Energy Put Option, (ii) modify performance tolerance band limits, and (iii) update definitions from the Tariff.	11/17/2021
45	12034	SP Tranquillity Solar Storage, LLC	Letter Agreement to allow the project to achieve commercial operation while the Certification is being drafted by CAISO.	12/7/2021
46	12002	Johanna Energy Center, LLC	Amendment No. 9 executed to update Appendix 10.02 due to a clerical error from Amendment No. 7, and replace Appendices 1.02, 1.03, 1.03(A), and 6.01(A).	12/9/2021

1 (1) Johanna Energy Center, LLC (ID 12002)

2 Johanna Energy Center, LLC (JEC) (f/k/a Orange County Energy Storage
3 1, LLC) is a 20 MW battery energy storage system project located in Santa Ana, CA, originally executed
4 as part of SCE's Preferred Resource Pilot 2 solicitation. The PPA was executed on September 8, 2016.
5 SCE and JEC executed Amendment No. 7 on January 12, 2021, to modify the expected initial delivery
6 date from December 1, 2019 to October 1, 2020 and the initial delivery deadline from June 1, 2021 to
7 October 1, 2021. SCE's customers benefit from this amendment by supporting the viability of the
8 project and provide important reliability benefits to the grid.

9 (2) Quarantina Energy Storage, LLC (ID 12021)

10 Quarantina Energy Storage, LLC (Quarantina) is a 10 MW battery energy
11 storage system project located in Santa Barbara, CA, originally executed on September 1, 2017, as part
12 of SCE's 2016 Energy Storage and Distribution Deferral RFO. SCE and Quarantina executed
13 Amendment No. 4 on February 2, 2021 to (i) reduce the Monthly Capacity Price from [REDACTED]
14 [REDACTED] (ii) extend the Expected Initial Delivery date
15 from January 1, 2022 to June 1, 2023, (iii) extend the Initial Delivery Deadline from January 1, 2023 to
16 August 1, 2023, and (iv) update Notice exhibit and Milestone Schedule. SCE's customers benefit from
17 this amendment by realizing a net present value savings of [REDACTED].

18 (3) Silverstrand Grid LLC (ID 12026)

19 Silverstrand Grid LLC (Silverstrand) is a 11 MW battery energy storage
20 system project located in Camarillo, CA, originally executed as part of SCE's ACES 2 RFO. The PPA
21 was executed on April 1, 2019. SCE and Silverstrand executed Amendment No. 2 on February 2, 2021
22 to update the description of the Generating Facility. SCE's customers benefit from this amendment by
23 having accurate project information available for contract administration.

24 (4) Johanna Energy Center, LLC (ID 12002)

25 Johanna Energy Center, LLC (JEC) (f/k/a Orange County Energy Storage
26 1, LLC) is a 20 MW battery energy storage system project located in Santa Ana, CA, originally executed

1 as part of SCE's Preferred Resource Pilot 2 solicitation. The PPA was executed on September 8, 2016.
2 SCE and JEC executed this letter agreement on March 3, 2021 to correct a Scrivener's Error of incorrect
3 year reference in Amendment No. 7 to the Energy Storage Agreement. SCE's customers benefit by
4 having accurate project information for contract administration.

5 (5) Painter Energy Storage, LLC (ID 12032)

6 Painter Energy Storage, LLC (Painter) is a 5 MW (formerly 10 MW)
7 battery energy storage system project located in Ventura County, CA. The PSA was originally executed
8 on April 1, 2019 as part of SCE's ACES 2 RFO. SCE and Painter executed a Forbearance Agreement
9 on March 12, 2021 to allow Painter to pursue a Firm Charging Study pursuant to the settlement in FERC
10 Docket No. ER19-2505 and have SCE forbear from exercising its rights and remedies on Seller Event of
11 Default, provided that Painter complies with the terms and conditions of the Forbearance Agreement.
12 SCE and Painter executed Amendments to the Forbearance Agreement on July 20, 2021, August 17,
13 2021, and September 17, 2021 to modify the Outside Date up to October 1, 2021. The extensions allow
14 Painter additional time to assess the Firm Charging Study results and execute and close a sale with a
15 new project owner. SCE's customers benefit from this agreement by supporting the viability of the
16 project and provide important reliability benefits to the grid.

17 (6) Ventura Energy Storage, LLC (ID 12028)

18 Ventura Energy Storage, LLC (Ventura) is a 100 MW battery energy
19 storage system project located in Ventura County, CA., originally executed as part of SCE's LCR RFO.
20 The Agreement was executed on April 1, 2019. SCE and Ventura executed Amendment No. 3 on
21 March 17, 2021 to address potential effects of the FERC WDAT Settlement (FERC Docket No. ER19-
22 2505). SCE's customers benefit from this amendment by supporting the viability of the project
23 providing grid reliability in a critical local area.

24 (7) Johanna Energy Center, LLC (ID12002)

25 Johanna Energy Center, LLC (JEC) (f/k/a Orange County Energy Storage
26 1, LLC) is a 20 MW battery energy storage system project located in Santa Ana, CA, originally executed
27 as part of SCE's Preferred Resource Pilot 2 solicitation. The PPA was executed on September 8, 2016.

1 SCE and the JEC executed Amendment No. 8 on April 6, 2021 to address potential effects of the FERC
2 WDAT Settlement (FERC Docket No. ER19-2505). SCE's customers benefit from this amendment by
3 supporting the viability of the project providing grid reliability in a critical local area.

4 (8) Blythe Energy Storage II, LLC (ID 12039)

5 Blythe Energy Storage II, LLC (Blythe) is a 115 MW battery energy
6 storage system project located in Blythe, CA, originally executed as part of SCE's 2019 System
7 Reliability RFO solicitation. The PPA was executed on April 10, 2020. SCE and Blythe executed a
8 letter agreement on April 16, 2021 to allow Seller to transfer RA Product to SCE in lieu of an RPS RA
9 Deficit Payment for the Showing Months of June and July 2021. SCE's customers benefit from this
10 letter agreement because it allows SCE the ability to maintain the quantity of RA that the co-located
11 solar project would have provided SCE for the June and July 2021 compliance months.

12 (9) Ventura Energy Storage, LLC (ID 12028)

13 Ventura Energy Storage, LLC (Ventura) is a 100 MW battery energy
14 storage system project located in Ventura County, CA. The PSA was originally executed on April 1,
15 2019 as part of SCE's LCR RFO. SCE and Ventura executed Amendment No. 4 on April 19, 2021 to
16 update certain delivery date provisions within the PSA to accommodate interconnection delay and
17 commercial operation date readiness. SCE's customers benefit from this amendment by supporting the
18 viability of the project providing grid reliability in a critical local area.

19 (10) SP Tranquillity Solar Storage, LLC (ID 12034)

20 SP Tranquillity Solar Storage, LLC (Tranquillity) is a 72 MW battery
21 energy storage system project located in Cantua Creek, CA., originally executed as part of SCE's 2019
22 System Reliability RFO Fast Track solicitation. The PPA was executed on April 22, 2020. SCE and
23 Tranquillity executed Amendment No. 2 on May 5, 2021 to clarify the conditions that must be met
24 before any Energy Put Options are exercised. SCE's customers benefit from this Amendment by having
25 accurate and consistent project information for contract administration.

1 (11) SP Garland Solar Storage, LLC (ID 12035)

2 SP Garland Solar Storage, LLC (Garland) is an 88MW battery energy
3 storage system project located in Rosamond, CA, originally executed as part of SCE's 2019 System
4 Reliability RFO Fast Track solicitation. The PPA was executed on April 22, 2020. SCE and Garland
5 executed Amendment No. 1 on May 7, 2021 to clarify the conditions that must be met before any
6 Energy Put Options are exercised. SCE's customers benefit from this Amendment by having consistent
7 provisions with SCE current pro-forma and accurate information available for contract administration.

8 (12) Orange County Energy Storage 2, LLC (ID 12003)

9 Orange County Energy Storage 2, LLC (OCES 2) is a 9 MW battery
10 energy storage system project located in Santa Ana, CA, originally executed as part of SCE's Preferred
11 Resource Pilot 2 solicitation. The PPA was executed on September 8, 2016. SCE and OCES 2 executed
12 Amendment No. 6 on May 24, 2021 to modify the Expected Initial Delivery Date from December 1,
13 2019 to October 1, 2020 and the Initial Delivery Deadline from June 1, 2021 to May 1, 2022. SCE's
14 customers benefit from this amendment by supporting the viability of the project and provide important
15 reliability benefits to the grid.

16 (13) Orange County Energy Storage 3, LLC (ID 12004)

17 Orange County Energy Storage 3, LLC. (OCES 3) is a 6 MW battery
18 energy storage system project located in Santa Ana, CA, originally executed as part of SCE's Preferred
19 Resource Pilot 2 solicitation. The PPA was executed on September 8, 2016. SCE and OCES 2 executed
20 Amendment No. 6 on May 24, 2021 to modify the Expected Initial Delivery Date from December 1,
21 2019 to October 1, 2020 and the Initial Delivery Deadline from June 1, 2021 to May 1, 2022. SCE's
22 customers benefit from this amendment by supporting the viability of the project and provide important
23 reliability benefits to the grid.

24 (14) VESI Pomona Energy Storage, Inc (ID 12010)

25 VESI Pomona Energy Storage, INC. (VESI) is a 20 MW battery energy
26 storage system project located in Pomona, CA, originally executed as part of SCE's ACES RFO. The
27 PPA was executed on August 5, 2016. SCE and VESI executed Amendment No. 2 on June 8, 2021 to

1 address potential effects of the FERC WDAT Settlement (FERC Docket No. ER19-2505) and provide
2 options for VESI Pomona Energy Storage resulting from a Firm Charging study in the event the study
3 identifies reimbursable network upgrade costs. SCE's customers benefit from this amendment by
4 preventing a potential termination event and ensuring that a highly flexible resource can continue to
5 provide important reliability benefits to the grid.

6 (15) Acorn I Energy Storage LLC (ID 12022)

7 Acorn I Energy Storage LLC (Acorn) is a 1.5 MW battery energy storage
8 system project located in Thousand Oaks, CA, originally executed as part of SCE's 2018 IDER
9 solicitation. The PPA was executed on October 3, 2018. SCE and Acorn executed Amendment No. 2 on
10 June 22, 2021 to memorialize the Expected Initial Delivery Date (EIDD), which has changed as a result
11 of Force Majeure and payment of Daily Delay of Liquidated Damages and also to update the capacity
12 payment schedule and shaping to accommodate the updated EIDD. SCE's customers benefit from this
13 amendment by having accurate project information available for contract administration.

14 (16) Edwards Sanborn Storage I, LLC (ID 12036)

15 Edwards Sanborn Storage I, LLC (Sanborn) is a 50 MW battery energy
16 storage system project located in Mojave, CA, originally executed as part of SCE's System Reliability
17 RFO (Fast Track) solicitation. The PPA was executed on April 23, 2020. SCE and Sanborn executed
18 Amendment No. 1 on July 20, 2021 to add back pro forma and fallback portfolio financing provisions
19 that were taken out of the final agreement during the fast-track negotiation process. SCE's customers
20 benefit by increasing the viability of the project and supporting broader financing options for the
21 counterparty.

22 (17) SP Tranquillity Solar Storage, LLC (ID 12034)

23 SP Tranquillity Solar Storage, LLC (Tranquillity) is a 72 MW battery
24 energy storage system project located in Cantua Creek, CA, originally executed as part of SCE's 2019
25 System Reliability RFO Fast Track solicitation. The PPA was executed on April 22, 2020. SCE and
26 Tranquillity executed a Letter Agreement on July 21, 2021 to allow SCE to perform the Scheduling
27 Coordinator services prior to the Initial Delivery Date with payment to SCE. SCE's customers benefit

1 from this Letter Agreement by enhancing the ability of the project to come on-line in a timely manner
2 and because of the payment in the amount of [REDACTED] for the Scheduling Coordinator services.

3 (18) SP Garland Solar Storage, LLC (ID 12035)

4 SP Garland Solar Storage, LLC (Garland) is an 88 MW battery energy
5 storage system project located in Rosamond, CA, originally executed as part of SCE's 2019 System
6 Reliability RFO Fast Track solicitation. The PPA was executed on April 22, 2020. SCE and Garland
7 executed a Letter Agreement on July 21, 2021 to allow SCE to perform the Scheduling Coordinator
8 services prior to the Initial Delivery Date with payment to SCE. SCE's customers benefit from this
9 Letter Agreement by enhancing the ability of the project to come on-line in a timely manner and because
10 of the payment in the amount of [REDACTED] for the Scheduling Coordinator services.

11 (19) SP Tranquillity Solar Storage, LLC (ID 12034)

12 SP Tranquillity Solar Storage, LLC (Tranquillity) is a 72 MW battery
13 energy storage system project located in Cantua Creek, CA, originally executed as part of SCE's 2019
14 System Reliability RFO Fast Track solicitation. The PPA was executed on April 22, 2020. SCE and
15 Tranquillity executed this Amendment No. 3 on July 21, 2021 to modify the obligations and timelines
16 associated with testing. The abbreviated timelines and testing allow for proxy RA to be available in
17 October 2021. The Amendment also provides more detail on what Seller should provide in their test
18 results. SCE's customers benefit from this Amendment by allowing more capacity to be available to the
19 grid in October 2021.

20 (20) SP Garland Solar Storage, LLC (ID 12035)

21 SP Garland Solar Storage, LLC (Garland) is an 88 MW battery energy
22 storage system project located in Rosamond, CA, originally executed as part of SCE's 2019 System
23 Reliability RFO Fast Track solicitation. The PPA was executed on April 22, 2020. SCE and Garland
24 executed this Amendment No. 2 on July 21, 2021 to modify the obligations and timelines associated
25 with testing. The abbreviated timelines and testing allow for proxy RA to be available in August 2021.
26 The Amendment also provides more detail on what Seller should provide in their test results. SCE's

1 customers benefit from this Amendment by allowing more capacity to be available to the grid in August
2 2021.

3 (21) Gateway Energy Storage, LLC (ID 12037)

4 Gateway Energy Storage, LLC (Gateway) is a 100 MW battery energy
5 storage system project (RA Only) located in Otay Mesa, CA, originally executed as part of SCE's 2019
6 System Reliability RFO Fast Track solicitation. The PPA was executed on April 22, 2020. SCE and
7 Gateway and SCE executed Amendment No. 2 on July 22, 2021 to extend the deadline for the project to
8 complete the final Initial Commercial Operations Test for when the project reaches full capacity. SCE's
9 customers benefit from this transaction by allowing the project extra time to complete final testing and
10 attain full capacity.

11 (22) McCoy Energy Storage, LLC (ID 12038)

12 McCoy Energy Storage, LLC (McCoy) is a 230 MW battery energy
13 storage system project located in Blythe, CA, originally executed as part of SCE's 2019 System
14 Reliability RFO solicitation. The PPA was executed on April 10, 2020. SCE and McCoy executed two
15 Letter Agreements and Amendment No. 3 on July 30, 2021 to facilitate the construction and operation of
16 the project on August 1, 2021. The Letter Agreements (i) temporarily waived McCoy's obligation to
17 achieve CAISO Certification as of August 1, 2021, as McCoy had completed the prerequisites and was
18 awaiting CAISO's final determination, (ii) temporarily waived the obligation to install physical and
19 logical control systems capable of preventing grid charging for a period ending no later than August 13,
20 2021, and (iii) agree that any grid charging shall be deemed to be an SCE Grid Charging Event. The
21 Amendment No. 3 (i) modified language to allow McCoy to operate as a merchant generator, (ii) require
22 SCE to be the Scheduling Coordinator Metering Entity (SCME) and for McCoy to contract for third-
23 party SCME costs, (iii) update the project description and update the testing protocols. SCE's customers
24 benefit from this Letter Agreement by supporting the viability of the project and provide important
25 reliability benefits to the grid.

1 (23) Blythe Energy Storage II, LLC (ID 12039)

2 Blythe Energy Storage II, LLC (Blythe II) is a 115 MW battery energy
3 storage system project located in Blythe, CA, originally executed as part of SCE's 2019 System
4 Reliability RFO solicitation. The PPA was executed on April 10, 2020. SCE and Blythe II executed two
5 Letter Agreements and Amendment No. 3 on July 30, 2021 to facilitate the construction and operation of
6 the project on August 1, 2021. The Letter Agreements (i) temporarily waived Blythe II's obligation to
7 achieve CAISO Certification as of August 1, 2021, as Blythe II had completed the prerequisites and was
8 awaiting CAISO's final determination, (ii) temporarily waived the obligation to install physical and
9 logical control systems capable of preventing grid charging for a period ending no later than August 13,
10 2021, and (iii) agree that any grid charging shall be deemed to be an SCE Grid Charging Event. The
11 Amendment No. 3 (i) modified language to allow Blythe II to operate as a merchant generator, (ii)
12 require SCE to be the Scheduling Coordinator Metering Entity (SCME) and for McCoy to contract for
13 third-party SCME costs, (iii) update the project description and update the testing protocols. SCE's
14 customers benefit from this Letter Agreement by supporting the viability of the project and provide
15 important reliability benefits to the grid.

16 (24) Blythe Energy Storage III, LLC (ID 12040)

17 Blythe Energy Storage II, LLC (Blythe III) is a 115 MW battery energy
18 storage system project located in Blythe, CA, originally executed as part of SCE's 2019 System
19 Reliability RFO solicitation. The PPA was executed on April 10, 2020. SCE and Blythe III executed
20 two Letter Agreements and Amendment No. 3 on July 30, 2021 to facilitate the construction and
21 operation of the project on August 1, 2021. The Letter Agreements (i) temporarily waived Blythe III's
22 obligation to achieve CAISO Certification as of August 1, 2021, as Blythe III had completed the
23 prerequisites and was awaiting CAISO's final determination, (ii) temporarily waived the obligation to
24 install physical and logical control systems capable of preventing grid charging for a period ending no
25 later than August 13, 2021, and (iii) agree that any grid charging shall be deemed to be an SCE Grid
26 Charging Event. The Amendment No. 3 (i) modified language to allow Blythe III to operate as a
27 merchant generator, (ii) require SCE to be the Scheduling Coordinator Metering Entity (SCME) and for

McCoy to contract for third-party SCME costs, (iii) update the project description and update the testing protocols. SCE's customers benefit from this Letter Agreement by supporting the viability of the project and provide important reliability benefits to the grid.

(25) SP Tranquillity Solar Storage, LLC (ID 12034)

SP Tranquillity Solar Storage, LLC (Tranquillity) is a 72 MW battery energy storage system project located in Cantua Creek, CA, originally executed as part of SCE's 2019 System Reliability RFO Fast Track solicitation. The PPA was executed on April 22, 2020. SCE and Tranquillity executed this Letter Agreement on August 13, 2021 allows for Tranquillity to satisfy insurance requirements in Sections 14.07(c) through (f) using the parent Southern Company corporate level insurance policy. The corporate policy must comply with all applicable requirements under Section 14.07, except that the policy may be written on a "claims made" basis, and not required to be on a "per contract" or "per project basis" as long as Tranquillity is a Southern Company affiliate. SCE may revoke the Letter Agreement with a 30-day notice. SCE's customers benefit from this Letter Agreement by supporting project viability while preserving SCE's rights under the PPA.

(26) Sonoran West Solar Holdings, LLC (ID 12042)

Sonoran West Solar Holdings, LLC (Sonoran) is a 200 MW battery energy storage system project located in Blythe, CA, originally executed as part of SCE's 2019 System Reliability RFO Standard Track solicitation. The PPA was executed on October 28, 2020. SCE and Sonoran executed this Amendment No. 2 on August 16, 2021 to clarify the (i) Compliance Expenditure Cap during a change in RA Law (ii) modifies the timelines associated with exercising the Energy Put Option, and (iii) updates Agreement definitions for a pending Portfolio Financing. SCE's customers benefit from this amendment by having consistent provisions with SCE current pro-forma and supporting reliability benefits to the grid.

(27) SP Garland Solar Storage, LLC (ID 12035)

SP Garland Solar Storage, LLC (Garland) is an 88 MW battery energy storage system project located in Rosamond, CA, originally executed as part of SCE's 2019 System Reliability RFO Fast Track solicitation. The PPA was executed on April 22, 2020. SCE and Garland

1 executed this Letter Agreement on August 25, 2021 to allow for Garland to satisfy insurance
2 requirements in Sections 14.07(c) through (f) using the parent Southern Company corporate level
3 insurance policy. The corporate policy must comply with all applicable requirements under Section
4 14.07, except that the policy may be written on a “claims made” basis, and not required to be on a “per
5 contract” or “per project basis” as long as Garland is a Southern Company affiliate. SCE may revoke
6 the Letter Agreement with a 30-day notice. SCE’s customers benefit from this Letter Agreement by
7 supporting project viability while preserving SCE’s rights under the PPA.

8 (28) Edwards Sanborn Storage I, LLC (ID 12036)

9 Edwards Sanborn Storage I, LLC (Sanborn) is a 50 MW battery energy
10 storage system project located in Mojave, CA, originally executed as part of SCE’s System Reliability
11 RFO (Fast Track) solicitation. The PPA was executed on April 23, 2020. SCE and Sanborn executed
12 Letter Agreement on August 27, 2021 to provide a one-time exception for Seller to submit their initial
13 RA Supply Plan (for the Showing Month of October 2021 only) up to, but no later than, August 31,
14 2021 (the day before the RA Compliance Showing curing deadline of September 1, 2021). This one-
15 time exception will allow SCE to show the project’s RA on its October RA Plan. SCE’s customers
16 benefit from this Letter Agreement by receiving needed RA benefits to meet compliance requirements
17 and by facilitating the ability to provide critically important resource adequacy to the grid.

18 (29) Edwards Sanborn Storage I, LLC (ID 12036)

19 Edwards Sanborn Storage I, LLC (Sanborn) is a 50 MW battery energy
20 storage system project located in Mojave, CA, originally executed as part of SCE’s System Reliability
21 RFO (Fast Track) solicitation. The PPA was executed on April 23, 2020. SCE and Sanborn executed
22 Amendment No. 2 on August 27, 2021 to allow the project to achieve its Initial Delivery Date (IDD) on
23 September 1, 2021 by deferring completion of the project’s Initial Commercial Operation Test to a later
24 date after the project reaches full capacity (50 MW), but before the Initial Delivery Deadline of
25 December 1, 2021. SCE’s customers benefit from this Amendment by facilitating the ability for the
26 project to achieve Initial Delivery and provide critically important RA to the grid.

1 (30) Goleta Energy Storage, LLC (ID 12033)

2 Goleta Energy Storage, LLC (f/k/a AltaGas Power Holdings U.S. Inc.) is a
3 40 MW battery energy storage system project located in Goleta, California, originally executed as part
4 of SCE's Aliso Canyon Energy Storage 2 RFO. The RA Only Purchase and Sale Agreement was
5 executed on April 1, 2019. SCE and Goleta Energy Storage, LLC executed Amendment No. 2 on
6 August 30, 2020 to (i) reduce the Monthly Capacity Price, (ii) modify the Initial Delivery Deadline and
7 the Expected Initial Delivery Date, (iii) modify each Critical Path Development Milestone deadlines,
8 and (iv) update the Milestone Schedule. SCE's customers benefit from this Amendment by realizing a
9 net present value savings of approximately [REDACTED]

10 (31) SP Garland Solar Storage, LLC (ID 12035)

11 SP Garland Solar Storage, LLC (Garland) is an 88 MW battery energy
12 storage system project located in Rosamond, CA, originally executed as part of SCE's 2019 System
13 Reliability RFO Fast Track solicitation. The PPA was executed on April 22, 2020. SCE and Garland
14 executed a Letter Agreement on September 2, 2021 to allow the project to achieve commercial operation
15 while the CAISO Certification was being drafted, as Garland had completed the prerequisites. SCE's
16 customers benefit from this amendment by ensuring critical capacity is made available to the grid
17 without any administrative delays.

18 (32) Orange County Energy Storage 2, LLC (ID 12003)

19 Orange County Energy Storage 2, LLC (OCES 2) is a 9 MW battery
20 energy storage system project located in Santa Ana, CA, originally executed as part of SCE's Preferred
21 Resource Pilot 2 solicitation. The PPA was executed on September 8, 2016. SCE and OCES 2 executed
22 Amendment No. 7 on September 8, 2021 to modify the Delivery Period and Monthly Capacity Payment
23 Appendix to reflect the updated Expected Initial Delivery Date established in Amendment No. 6. SCE's
24 customers benefit from the execution of this amendment by having accurate information available for
25 contract administration.

1 (33) Orange County Energy Storage 3, LLC (ID 12004)

2 Orange County Energy Storage 3, LLC. (OCES 3) is a 6 MW battery
3 energy storage system project located in Santa Ana, CA, originally executed as part of SCE's Preferred
4 Resource Pilot 2 solicitation. The PPA was executed on September 8, 2016. SCE and OCES 2 executed
5 Amendment No. 7 on September 8, 2021 to modify the Delivery Period and Monthly Capacity Payment
6 Appendix to reflect the updated Expected Initial Delivery Date established in Amendment No. 6. SCE's
7 customers benefit from the execution of this amendment by having accurate information available for
8 contract administration.

9 (34) SP Garland Solar Storage, LLC (ID 12035)

10 SP Garland Solar Storage, LLC (Garland) is an 88 MW battery energy
11 storage system project located in Rosamond, CA, originally executed as part of SCE's 2019 System
12 Reliability RFO Fast Track solicitation. The PPA was executed on April 22, 2020. SCE and Garland
13 executed Amendment No. 3 on September 9, 2021 to modify the language permitting for an Initial
14 Delivery Date occurring on a day other than the first day of a month and to modify the SCE Grid
15 Charging Event definition to remove reference to ITC Losses. SCE's customers benefit from this
16 amendment by ensuring critical capacity is made available to the grid as soon as accessible.

17 (35) Painter Energy Storage, LLC (ID 12032)

18 Painter Energy Storage, LLC (Painter) is a 5 MW (formerly 10 MW)
19 battery energy storage system project located in Ventura County, CA. The PSA was originally executed
20 on April 1, 2019 as part of SCE's ACES 2 RFO. SCE and Painter executed Amendment No. 2 to the
21 Agreement on September 22, 2021 to (i) update the Delivery Period, (ii) update certain delivery date
22 provisions within the Agreement, (iii) adjust the Predicted Capacity of the Project from 10 MW to 5
23 MW, (iv) update the Monthly Capacity Payment provision, (v) update the Critical Path Development
24 Milestones, and (vi) update other related provisions to accommodate commercial operation date
25 readiness. SCE's customers benefit from this amendment by supporting the viability of the project and
26 provide important reliability benefits to the grid.

(36) SP Tranquillity Solar Storage, LLC (ID 12034)

SP Tranquillity Solar Storage, LLC (Tranquillity) is a 72 MW battery energy storage system project located in Cantua Creek, CA, originally executed as part of SCE's 2019 System Reliability RFO Fast Track solicitation. The PPA was executed on April 22, 2020. SCE and Tranquillity executed Amendment No. 4 on September 24, 2021 to modify the language permitting for an Initial Delivery Date occurring on a day other than the first day of a month and to modify the SCE Grid Charging Event definition to remove reference to ITC Losses. SCE's customers benefit from this amendment by ensuring critical capacity is made available to the grid as soon as accessible.

(37) Hecate Energy Johanna Facility, LLC (ID 12005)

Hecate Energy Johanna Facility, LLC (HEJF10) is a 10 MW battery energy storage system project located in Santa Ana, CA, originally executed as part of SCE's Preferred Resource Pilot 2 solicitation. The PPA was executed on September 8, 2016. SCE and HEJF10 executed Amendment No. 5 on September 24, 2021 to (i) modify the Expected Initial Delivery Date from January 1, 2021 to December 1, 2021, (ii) establish the end of the Delivery Period as no later than September 30, 2031, (iii) modify the Initial Delivery Deadline from September 1, 2021 to February 1, 2022, (iv) and update the Milestones Schedule. SCE's customers benefit from this amendment by supporting the viability of the project and provide important reliability benefits to the grid.

(38) Hecate Energy Johanna Facility, LLC (ID 12006)

Hecate Energy Johanna Facility, LLC (HEJF5) is a 5 MW battery energy storage system project located in Santa Ana, CA, originally executed as part of SCE's Preferred Resource Pilot 2 solicitation. The PPA was executed on September 8, 2016. SCE and HEJF5 executed Amendment No. 5 on September 24, 2021 to (i) modify the Expected Initial Delivery Date from January 1, 2021 to December 1, 2021, (ii) establish the end of the Delivery Period as no later than September 30, 2031, (iii) modify the Initial Delivery Deadline from September 1, 2021 to February 1, 2022, (iv) and update the Milestones Schedule. SCE's customers benefit from this amendment by supporting the viability of the project and ensuring the project stays on schedule, which will provide important reliability benefits to the grid.

1 (39) Wildcat I Energy Storage LLC (ID 12025)

2 Wildcat I energy Storage LLC (Wildcat) is a 3 MW battery energy storage
3 system project located in Palm Springs, CA, originally executed as part of SCE's 2018 IDER
4 solicitation. The PPA was executed on October 3, 2018. SCE and Wildcat executed Amendment No. 1
5 on October 21, 2021 to (i) modify the Expected Initial Delivery Date from March 1, 2020 to October 1,
6 2021, (ii) modify the PPA for a phased contract capacity (iii) grant SCE access to Local Resource
7 Constraint Day (LRCD) dispatch beginning [REDACTED] (iv) provide schedule for payment of
8 [REDACTED], and (v) extend term from 9 years 6 months to 10 years and 6
9 months. SCE's customers benefit from this Amendment because the earlier access to LRCD's provide
10 net present value savings of approximately [REDACTED].

11 (40) McCoy Energy Storage, LLC (ID 12025)

12 McCoy Energy Storage, LLC (McCoy) is a 230 MW battery energy
13 storage system project located in Blythe, CA, originally executed as part of SCE's 2019 System
14 Reliability RFO solicitation. The PPA was executed on April 10, 2020. SCE and McCoy executed a
15 Letter Agreement on November 2, 2021 to correct an incorrect Effective Date in recitals of the Consent
16 to Assignment. SCE's customers benefit from this Letter Agreement by having accurate information
17 available for contract administration.

18 (41) AES ES Alamitos, LLC (ID 12001)

19 AES ES Alamitos, LLC (Alamitos) is a 100 MW battery energy storage
20 system project located in Long Beach, CA, originally executed as part of SCE's 2013 LCR RFO
21 solicitation. The PPA was executed on November 3, 2014. SCE and Alamitos executed Amendment
22 No. 6 on November 17, 2021 to (i) modify timelines associated with exercising the Energy Put Option,
23 (ii) modify performance tolerance band limits, and (iii) update definitions from the Tariff. SCE's
24 customers benefit from this Amendment by having consistent provisions with SCE current pro-forma
25 and accurate information available for contract administration.

1 (42) SP Tranquillity Solar Storage, LLC (ID 12034)

2 SP Tranquillity Solar Storage, LLC (Tranquillity) is a 72 MW battery
3 energy storage system project located in Cantua Creek, CA, originally executed as part of SCE's 2019
4 System Reliability RFO Fast Track solicitation. The PPA was executed on April 22, 2020. SCE and
5 Tranquillity executed a Letter Agreement on December 7, 2021 to provide a waiver for Tranquillity to
6 achieve commercial operation while the CAISO Certification was being drafted, as Tranquillity had
7 completed the prerequisites. SCE's customers benefit from this amendment by ensuring critical capacity
8 is made available to the grid without any administrative delays.

9 (43) Johanna Energy Center, LLC (ID12002)

10 Johanna Energy Center, LLC (JEC) (f/k/a Orange County Energy Storage
11 1, LLC) is a 20 MW battery energy storage system project located in Santa Ana, CA, originally executed
12 as part of SCE's Preferred Resource Pilot 2 solicitation. The PPA was executed on September 8, 2016.
13 SCE and the JEC executed Amendment No. 9 on December 9, 2021 to (i) correct an error in Appendix
14 10.02 from Amendment No. 7, (ii) provide an updated project description, and (iii) provide an updated
15 Milestone Schedule. SCE's customers benefit from this Amendment by having accurate information
16 available for contract administration.

17 f) Contract Assignment Administration

18 BESS contracts may only be assigned with the written consent of the parties,
19 which may not be unreasonably withheld. There are many reasons BESS contract counterparties seek to
20 assign their contracts. The counterparty might want to sell or transfer the project to a new entity, sell or
21 assign a portion of the project to tax equity, assign the contract to a lender as security for a loan, or a
22 change of control of the project. Table II-31 lists the contract assignments to which SCE consented
23 during the Record Period.

Table II-31
BESS Contract Consents and Consents to Assignments
January 1, 2021 through December 31, 2021

	ID	Contract Counterparty	Consents and Description	Date Executed
1	12029	Enel Bella Energy Storage, LLC	Consent to Assignment of Membership Interest	1/5/2021
2	12025	Wildcat I Energy Storage LLC	Consent to Assignment of Membership Interest	1/5/2021
3	12022	Acorn I Energy Storage LLC	Consent to Assignment of Membership Interest	1/5/2021
4	12021	Quarantina Energy Storage, LLC	Consent to Assignment of Membership Interest	1/5/2021
5	12043	Silver Peak Solar, LLC	Consent to Assignment of Membership Interest	1/13/2021
6	12036	Edwards Sanborn Storage I, LLC	Consent to Assignment of Indirect Membership Interest	3/26/2021
7	12028	Ventura Energy Storage, LLC	Consent to Assignment of Membership Interest	4/22/2021
8	12028	Ventura Energy Storage, LLC	Consent to Collateral Assignment	4/23/2021
9	12038	McCoy Energy Storage, LLC	Consent to Assignment	4/26/2021
10	12035	SP Garland Solar Storage, LLC	Consent to Assignment of Membership Interest	7/16/2021
11	12036	Edwards Sanborn Storage I, LLC	Consent to Assignment of Membership Interest	7/20/2021
12	12034	SP Tranquillity Solar Storage, LLC	Consent to Assignment of Membership Interest	7/20/2021
13	12036	Edwards Sanborn Storage I, LLC	Consent to Collateral Assignment	7/20/2021
14	12042	Sonoran West Solar Holdings, LLC	Consent to Assignment of Membership Interest	8/16/2021
15	12042	Sonoran West Solar Holdings, LLC	Consent to Collateral Assignment	8/27/2021
16	12032	Painter Energy Storage, LLC	Consent to Assignment of Membership Interest	9/13/2021
17	12039	Blythe Energy Storage II, LLC	Consent to Collateral Agreement	10/5/2021
18	12038	McCoy Energy Storage, LLC	Consent to Collateral Agreement	10/26/2021
19	12025	Wildcat I Energy Storage LLC	Consent to Assignment of Membership Interest	12/1/2021

g) Affiliate Transactions and Contract Information

There were no affiliate BESS contracts during the Record Period.

h) Uncontrollable Force Administration

SCE's contracts with BESS projects include provisions that may excuse project from performing certain contractual obligations to the extent the project can demonstrate that the occurrence of an uncontrollable force, or a circumstance beyond its reasonable control as defined in the agreements (often known as a *Force Majeure*), prevented the project from performing such obligations.

Whenever a BESS contract holder claims that an uncontrollable force caused it to fail to meet its contractual obligations, SCE undertakes the following activities:

- Determines whether the claim was submitted within the contractually required period, which is typically two weeks;

1 • Requires that the counterparty submit sufficient evidence to substantiate the
2 claim that an uncontrollable force event occurred. This may include supply chain delays and associated
3 uncontrollable force documentation, copies of insurance claims, and other relevant materials; and

4 • Evaluates whether the suspension of performance was of no greater scope and
5 of no longer duration than was required by the uncontrollable force, and that the BESS contract holder
6 used its best efforts to remedy its inability to perform.

7 Table II-33 in Section E.1, COVID-19 Force Majeure Claims lists the
8 uncontrollable force claims from projects, including BESS projects, tendered to SCE or pending during
9 the Record Period.

10 i) Dispute Resolution and Litigation

11 SCE did not have any BESS projects that had dispute resolutions and litigation
12 activities during the Record Period.

13 j) Contract Terminations

14 Table II-32 shows the BESS contracts that terminated during the Record Period.

Table II-32
BESS Contract Terminations
January 1, 2021 through December 31, 2021

	<u>ID</u>	<u>Project</u>	<u>Contract Type</u>	<u>Termination Date</u>	<u>Notes</u>
1	12021	Quarantina Energy Storage, LLC	RA Purchase Agreement	4/28/2021	
2	12029	Enel Bella Energy Storage, LLC	RA Purchase Agreement	6/9/2021	

15 E. Other Contract Administration Activities

16 Below are other contract administration activities:

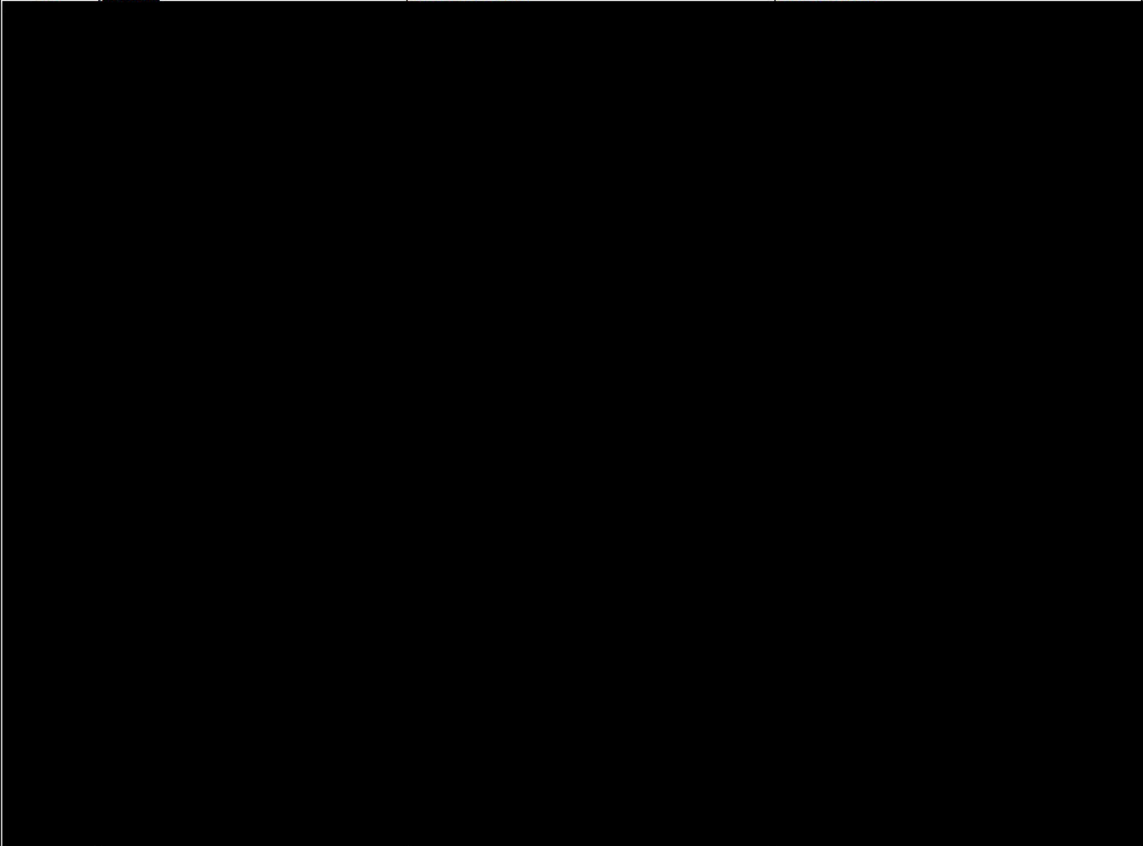
1 1. COVID-19 Force Majeure Claims

2 Since the start of the COVID-19 pandemic, eleven PPA counterparties have submitted
3 Force Majeure claims to SCE related to the COVID-19 pandemic potentially adversely affecting their
4 ability to timely perform their obligations under their respective contracts. Eight of the projects are
5 currently in development while three reached their on-line operation date in accordance with their
6 respective PPA, despite the impacts of the COVID-19 pandemic. The Force Majeure claims fall within
7 one or all of the following three categories: (1) supply chain delays; (2) interconnection delays; or (3)
8 permitting delays. In all instances, the counterparties are seeking relief of certain development
9 milestones or delivery requirements.

10 SCE's review of the COVID-19 pandemic related claims includes a determination in
11 accordance with the PPA of whether the claim was submitted within the contractually required time
12 period, whether the counterparty submitted sufficient evidence to substantiate the claim, and whether the
13 counterparty used its best efforts to mitigate the delay or remedy its inability to perform.

14 Table II-33 shows the COVID-19 pandemic related claims delivered to SCE during the
15 Record Year.

Table II-33
COVID-19 Force Majeure Claims⁸⁶

ID	Project	Date and Event	Claim Status
1			
2			
3			
4			
5			
6			
7			
8			

⁸⁶ SCE uses a contract numbering convention to identify contracts with BESS identified by a five-digit number starting with “12xxx” (e.g. 12002), refers to a contract with a BESS.

2. CAISO System Emergency

For a second year, the CAISO issued Stage 2 System Emergency (CAISO System Emergency) CAISO Warnings and CAISO Flex Alerts,⁸⁷ during heat waves occurring in the months of June, July, August, and September 2021. In parallel with the CAISO's actions, Governor Newsom also signed an emergency proclamation (Governor's Proclamation"⁸⁸ limited in duration during the heatwave in June, followed by an Executive Order⁸⁹ in July and issued a longer duration Governor's Proclamation⁹⁰ on July 30, 2021, effective through October 31, 2021, to support freeing up additional capacity amid the heat waves. On September 10, 2021, in response to CAISO's request, the Department of Energy issued a Section 202c⁹¹ emergency order pursuant to the Federal Power Act to the CAISO (Department of Energy Order), authorizing certain units to operate at their maximum generation output levels in order to meet the CAISO System Emergency.

Throughout the CAISO System Emergencies during the Record Period, SCE's Energy Contracts Management group secured incremental capacity and associated energy deliveries and included outreach such as: 1) identifying a total of 500 MW battery energy storage systems with Blythe Solar II LLC, Blythe Solar III LLC, and McCoy Solar that could provide energy deliveries prior to reaching their commercial operation date by aligning test energy to be discharged during time of need, 2) waiving PPA obligations for Chevron USA, US Borax, and Copper Mountain Solar 4, LLC to allow for generation above the contract capacity or for energy generation in excess of the settlement interval cap, where appropriate, 3) coordinating with Watson Cogeneration Company to participate in CAISO's Capacity Procurement Mechanism (CPM) solicitation in August 2021 for an additional 16.84 MW capacity above the contract capacity 4) entering into short-term agreement with Watson Cogeneration Company to firm up deliveries at 274 MW, amending the existing agreement to allow for fuel

⁸⁷ [FlexAlertNoticesIssuedFrom1998-Present.pdf \(caiso.com\)](#).

⁸⁸ Governor's Proclamations of a State of Emergency [CAP14-20210617152957](#), June 17, 2021.

⁸⁹ Executive Order N-11-21 [CAP14-20210710175416](#), July 10, 2021.

⁹⁰ Governor's Proclamation of a State of Emergency [CAP14-20210730130249](#), July 30, 2021.

⁹¹ Department of Energy Order No. 202-21-2 [EXEC-2021-005025 - Order 202-21-2 - signed 9-10-21.pdf \(energy.gov\)](#).

1 compensation where not otherwise addressed, and entering into an RA Confirm agreement for an
2 additional 31 MW for September and October 2021, and 5) identifying El Segundo Energy Center, LLC
3 and Walnut Creek Energy, LLC could generate beyond emissions and other permit limitations with
4 approval from the appropriate governmental entity or entities, pursuant to a Governor's Proclamation,
5 Governor's Executive Order, or Department of Energy Order.

6 Table II-34 lists the contracts that ultimately delivered additional capacity and associated
7 energy and had cost impact above the existing PPA terms during the summer heatwaves in the Record
8 Period.

Table II-34
CAISO System Emergency

ID	Contract Counterparty	Heatwave Date	Settlement Impact
1			
2			
3			

9 3. Community Choice Aggregator Implementation and RA Compliance Agreements

10 In 2019, SCE began working with certain CCAs whose program start dates were
11 impacted by SCE's Customer Service Re-Platform (CRSP) project. SCE entered into bilateral
12 agreements regarding CCA implementation and RA compliance (CCA RA Agreements) with three
13 impacted CCAs in 2019 and two in 2020, as shown in Table II-37. The CCA RA Agreements addressed
14 uncertainties that CSRP may cause in the timing of the CCA implementation start dates and the financial
15 impacts of delayed CCA program launches, including the risk of CCAs procuring unneeded RA
16 resources. All CCA RA Agreements were submitted for CPUC approval under Tier 3 advice letters as
17 specified in Table II-37.

18 During the Record Period, SCE continued to administer the CCA RA Agreements. SCE
19 activities associated with the CCA RA Agreements include managing the CCA's Year-Ahead and

1 Month-Ahead RA compliance showings, coordination with the CPUC and the CEC regarding LSE
2 allocations and settling any payments due.

3 Western Community Energy (WCE) defaulted on its CSRP RA Agreement and another
4 brokerage agreement (which followed the Edison Energy Institute, or EEI, form). On May 25, 2021,
5 WCE filed for protection under federal bankruptcy laws. Thereafter, 113,337 WCE customer service
6 accounts were returned to SCE's bundled service. The unplanned return of this volume of customers on
7 June 15, 2021, caused SCE to incur additional procurement costs to provide for the newly returned
8 customers for the remainder of the Record Year, which recorded to the ERRRA BA. In 2021, SCE
9 actively participated in WCE's bankruptcy case, including filing claims for the CSRP RA Agreement
10 and the other brokerage agreement, among others.

11 Table II-35 lists the CCA RA Agreements & Amendments administered by SCE during
12 the Record Period.

Table II-35
CCA RA Compliance Agreements
January 1, 2021 Through December 31, 2021

	<u>Community Choice Aggregator (ID)</u>	<u>RA Compliance Year</u>	<u>Executed Date</u>	<u>Advice Letter</u>	<u>CPUC Resolution & Disposition</u>	<u>Status</u>
1	Desert Community Energy (10128)	2020	8/12/2019	4059-E-B	Approved in Resolution 5051-E, issued February 28, 2020	The CCA RA Agreement expired in accordance with the terms of the Agreement
2	Western Community Energy (10127)	2020	8/15/2019	4058-E-B	Approved in Resolution 5051-E, issued February 28, 2020	
3	Clean Power Alliance ^[1] (10129)	2020	8/16/2019	4060-E-A	Approved in Resolution 5051-E, issued February 28, 2020	The CCA RA Agreement expired in accordance with the terms of the Agreement
4	City of Santa Barbara (10130)	2022	9/15/2020	4303-E	Approved in Resolution 5159-E, issued October 8, 2021	The CCA RA Agreement was effective and actively administered during 2021
5	Central Coast Community Energy ^[2] (10131)	2021	10/8/2020	4314-E-A	Approved in Resolution 5159-E, issued October 8, 2021	The CCA RA Agreement was effective and actively administered during 2021
^[1] Includes Phase V - City of Westlake Village only						
^[2] Includes Goleta, Carpinteria, and parts of unincorporated Santa Barbara County only						

4. Supplier Diversity

SCE's Energy Contracts Management group supports SCE's compliance and participation with GO 156, which requires utilities to submit annual detailed and verifiable plans for increasing women, minority, veterans with a disability, lesbian, gay, bisexual and transgender owned business enterprises' (WMDVLGBTBE) procurement in all categories. SCE's Energy Contracts Management group actively reaches out to contract counterparties to encourage and foster new procurement opportunities for those groups. Many of our PPAs require that counterparties report to SCE their procurement activities with businesses certified as WMDVLGBTBEs. Twice per year, SCE

1 sends a survey to its energy contract counterparts requesting this information and, in many cases, spends
2 time discussing the survey and data collected with the counterparty. This information is analyzed and
3 compiled for publication in SCE's Supplier Diversity Annual Report. Energy Contracts Management
4 also participates in annual meetings with Commission staff and the other IOUs, when requested, and
5 supports various supplier diversity outreach activities and events throughout the year.

6 5. Enterprise Contract Management System and Training

7 During 2021, contract managers participated in training related to several topics,
8 including CAISO-Market Settlement Timeline Transformation, procurement programs, resource
9 adequacy, and continued training on SCE's recently implemented system of record (Endur) for
10 managing principal provisions and payments. SCE's Energy Contracts Management group continued
11 updating and enhancing the Endur training handbook during the Record Period. These
12 projects/initiatives are on-going and will continue to achieve improvements and overall savings through
13 enhanced efficiency and optimization.

14 6. Portfolio Optimization

15 In an effort to improve operational excellence, several initiatives were undertaken that
16 focused on process improvements and obtaining value for customers. To optimize value in SCE's
17 portfolio of contracts, contract managers proactively reached out to counterparties to consider
18 amendments or termination agreements that would result in savings for both parties. Potential topics
19 included performance assurance reductions (to more closely reflect current market value of renewables),
20 buy-out opportunities of high-cost contracts, and other topics. Counterparties provided a benefit to SCE
21 customers in the form of a price reduction, upfront payment or elimination of future payments,
22 additional run time hours, and lower startup charges and transition costs. Total customer savings related
23 to these efforts in 2021 were greater than \$70 million. Those amendments and terminations are reflected
24 in the Contract Amendment and Contract Termination sections, respectively. Negotiated contract
25 amendments and terminations are provided in sections above and Appendix II-L.

1 F. Contract Collateral

2 1. Conventional

3 a) Development Security and Performance Assurance

4 Conventional contracts have obligations for collateral to be provided to SCE.
5 These obligations include different types of performance assurances. Some include market-to-market
6 calculations and others are simply a fixed amount. Appendix II-N lists the collateral held in cash,
7 letter(s) of credit, or parental guarantees, from a creditworthy entity acceptable to SCE, for these
8 contracts on December 31, 2021.

9 2. PURPA and CHP

10 SCE has a variety of cash and non-cash deposits that are collected from non-investment
11 grade energy suppliers in the procurement process to assure performance. There are three types of
12 obligations for which collateral is held by SCE from PURPA and CHP contracts: Development Security;
13 Performance Assurance; and income tax component of contributions (ITCC) (sometimes referred to as
14 CIAC, explained in Section 4 below). SCE has assigned its Risk Operations & Collateral Management
15 group to handle the administration and tracking of the collateral posted for Development Security and
16 Performance Assurance and its Energy Contracts Management group to handle the administration of the
17 ITCC collateral. The contract managers within SCE's Energy Contracts Management group still serve
18 as the primary contact for collateral replacement, changes or questions; however, Credit Risk group and
19 Risk Operations & Collateral Management group handles SCE's routine transactions with the
20 counterparties. Appendix II-L lists the collateral retained and transferred by SCE to ERRA or PABA in
21 this Record Period. Appendix II-N lists the collateral held for these contracts on December 31, 2021.

22 3. RPS

23 There are two types of obligations that collateral was posted for in the Record Period
24 from RPS contracts: Development Security and Performance Assurance. Each obligation is discussed,
25 in detail, below.

1 a) Development Security

2 SCE contract managers work closely with RPS project developers to assist them
3 in meeting project milestones so they can achieve commercial operation and contribute to the state's
4 renewable energy goals. New projects can face several challenges, including permitting delays and
5 difficulty securing financing. As part of its contract administration activities, SCE diligently monitors
6 the progress of new projects and provides on-going support to move these projects forward for the
7 benefit of its customers. However, in order to mitigate the risk of a new project's failure to reach
8 commercial operation, SCE requires counterparties to post development security to maintain the
9 incentive for the counterparty to complete the project and to defray some of the costs of replacing failed
10 projects.

11 The administration and tracking of this collateral are assigned to SCE's Risk
12 Operations & Collateral Management group. One significant milestone to be met by new projects is the
13 posting of a required development security to ensure that the contracted project will be developed.
14 Development security is typically posted in the form of cash or letter(s) of credit.

15 b) Performance Assurance

16 On or before a project's Commercial Operation Date (COD), RPS contracts
17 require posting of "performance assurance," which is collateral for performance during the term of the
18 PPA. This is distinct from "development security" described in the previous section, which provides
19 collateral during the development of the project prior to COD. The collateral amount may be posted in
20 the form of cash, letter(s) of credit, or a guaranty from a creditworthy entity acceptable to SCE.
21 Counterparties may provide performance assurance in multiple forms as acceptable to SCE.

22 Appendix II-L lists the collateral retained and transferred by SCE to ERRRA or
23 PABA in this Record Period. Appendix II-N lists the collateral held in cash or letter(s) of credit and
24 guarantees from a creditworthy entity acceptable to SCE for these contracts as of December 31, 2021,
25 related to RPS project development security and performance assurance.

1 4. BESS

2 BESS contracts have two types of obligations as the RPS contracts do for which
3 collateral was posted for in the Record Period: delivery date security or development security and
4 performance assurance. Each obligation is discussed, in detail, in the section above.

5 Appendix II-N lists the collateral held in cash or letter(s) of credit for these contracts as
6 of December 31, 2021, related to BESS project development security and performance assurance.

7 5. Contribution in Aid of Construction (CIAC) Tax

8 Legacy QF agreements managed by SCE's Energy Contracts Management group require
9 that the counterparty either (1) construct and transfer ownership of the interconnection facilities to the
10 utility or (2) pay the utility for building the project's intertie. In 1986, the Internal Revenue Code was
11 amended by the Tax Reform Act of 1986 to provide that these transfers of property and/or payments of
12 money may be determined by the Internal Revenue Service (IRS) to be taxable income to SCE as CIAC.
13 In 1988, the IRS clarified that such transfers only become taxable under the circumstances described in
14 the IRS' regulations.

15 Counterparties to Legacy QF Agreements are ultimately responsible for CIAC tax, also
16 referred to as the income tax component of contributions (ITCC) imposed on the utility as a result of the
17 project's interconnection arrangements. Pursuant to D.87-09-026, SCE collected the ITCC during the
18 development of each project, which may be in the form of cash deposits to securitize the obligation.
19 The tax liability of this potential taxable event has diminished such that SCE enacted the return of the
20 ITCC. Cash deposits plus accrued interest are subject to execution of an indemnity agreement in
21 accordance with D.94-06-038. During the Record Period, SCE executed four Indemnity Agreements
22 and returned ITCC security totaling approximately \$192,581. SCE escheated ITCC Security totaling
23 approximately \$160,767 to the state associated with seven projects, due to inability to find the current
24 project owner or the counterparty did not agree to the Indemnity Agreement. SCE's Energy Contracts
25 Management group has either returned or escheated the ITCC security for all Legacy QF Agreements,
26 closing out the administration of ITCC security. The contracts that SCE returned ITCC cash security to
27 are summarized in Table II-36 below.

Table II-36
PURPA and CHP Indemnity Agreements
January 1, 2021 through December 31, 2021

<u>ID</u>	<u>Project</u>	<u>Description</u>	<u>Date Executed</u>
1 1005	Covanta Energy Americas, Inc.	Indemnity Agreement to allow SCE to return posted Income Tax Component of Contribution (ITCC) to Seller.	2/17/2021
2 2049	AES Placerita, Inc.	Indemnity Agreement to allow SCE to return posted Income Tax Component of Contribution (ITCC) to Seller.	3/11/2021
3 6043	AES Tehachapi Wind LLC 85-A	Indemnity Agreement to allow SCE to return posted Income Tax Component of Contribution (ITCC) to Seller.	10/1/2021
4 6044	AES Tehachapi Wind LLC 85-B	Indemnity Agreement to allow SCE to return posted Income Tax Component of Contribution (ITCC) to Seller.	10/1/2021

G. Contract Compliance

1. Conventional

a) Insurance Verification

Specific conventional projects are required to obtain and maintain comprehensive general liability insurance during the terms of their power purchase contracts. SCE uses a third-party insurance management solutions company, InsureTrack InsureTech, LLC (InsureTrack), to monitor counterparty compliance with these requirements. During the Record Period, six conventional projects were actively monitored by ITS. ITS, in conjunction with SCE, ensures that these projects have:

- Obtained required insurance upon execution;
- Maintained insurance policies and insurance carriers that meet the contract's requirements; and,
- Maintained adequate insurance coverage throughout the terms of their contracts.

2. PURPA and CHP

Compliance programs have been developed to ensure that PURPA and CHP projects adhere to the terms of their contracts, and to integrate those projects effectively with the electric system grid. This section discusses the following contract compliance programs: (a) capacity performance; (b) metering energy deliveries; (c) prescribed dispatch; (d) protection equipment testing; (e) efficiency monitoring; (f) scheduled maintenance; (g) wind operations; (h) insurance verification; and, (i) forecasting and scheduling accuracy.

a) Capacity Performance Programs and Verification

SCE's capacity performance monitoring programs and activities assist in ensuring that SCE's customers receive the firm capacity for which SCE has contracted. There are two major programs: the annual contract capacity demonstration (CapDemo) program and the summer capacity performance (CapPerformance) program.

(1) CapDemo Program

The CapDemo program applies to those PURPA and CHP contracts that provide payment for firm capacity and contain a capacity testing clause. These facilities are required to achieve and reliably sustain 100 percent of their firm contract capacity for each metering interval (typically 15 minutes) during a specified period of testing (typically six hours during an on-peak period), or as otherwise specified either in the contract or other agreements between SCE and the counterparty. This performance test simulates the condition described in most contracts requiring the project to make best efforts to provide full contract output when a system emergency is declared. Most firm capacity contracts contain a firm capacity reduction clause that provides a remedy if the generator is unable to

1 provide the required capacity during the test. Typically, the remedy is a reduction of firm capacity to the
2 level demonstrated during the test.⁹²

3 The steps involved in implementing the CapDemo program include
4 scheduling mutually agreeable test dates, visits by SCE personnel to the facility to ensure that the test
5 protocols are properly followed, or setting up the tests remotely, when feasible, analysis of the regular
6 revenue meter data for pass or fail status, communicating the results to the project, and administering the
7 appropriate remedy for those projects that fail. Demonstrations are generally performed during the
8 summer season on-peak hours for the months of June through September. Longer test periods specified
9 in a few of the contracts also include hours from the mid-peak and off-peak periods.

10 During the Record Period, all tests were done remotely, and SCE
11 witnessed three initial demonstrations and sent notices of pass/fail status to all the facilities. Of the three
12 projects that demonstrated capacity, two passed their initial demonstrations and one facility failed its
13 demonstration. The circumstances regarding the single failure are as follows:

14 (a) Desert Power Company (ID 4008)

15 Desert Power Company is a small 0.60 MW run-of-the-river
16 hydroelectric generator located near Bishop, California, and was originally executed as a negotiated
17 contract. The PPA was executed on August 13, 1982. As in past years, Desert Power failed to
18 demonstrate firm contract capacity in 2021. The capacity of the unit was restricted by continuing
19 drought conditions that reduced the available water flow to the facility. Desert Power's nonstandard
20 contract contains no explicit provisions for capacity reduction.

21 (2) CapPerformance Program

22 Most PURPA and CHP contracts with firm capacity provisions require
23 that the project achieve a minimum performance factor (as more specifically defined in the applicable
24 contract) of 80 percent of its firm contract capacity for the on-peak periods during the peak months of

⁹² SCE has historically experienced disputes with projects operating pursuant to PURPA contracts regarding the appropriate capacity reduction in the event of a CapDemo test failure.

1 June, July, August, and September.⁹³ If the project fails to meet this minimum requirement for any
2 month, it is placed on probation beginning the month following the failure. Probation generally
3 continues through September of the following year. Therefore, depending on which summer month the
4 project first fails, the probation period can last between 12 and 15 months, subject to SCE's discretion to
5 shorten the period based on obtaining the best customer outcome for each case. If a project fails to meet
6 the minimum performance factor requirement during any month of its probationary period, its firm
7 contract capacity may be reduced and/or it can lose its eligibility for winter bonus payments pursuant to
8 the terms of the contract. A project can return to normal status at the end of probation if it satisfies the
9 peak performance requirement during all months of the probationary period.

10 During the Record Period, two PURPA contracts were subject to the
11 summer capacity performance provisions for the months of June through September. Of those contracts,
12 none of the projects failed their performance obligation in at least one summer month during the on-peak
13 delivery period.

14 b) Metering Energy Deliveries

15 SCE uses meter and schedule data to calculate payments owed to PURPA and
16 CHP projects that existed prior to the CAISO. Since these legacy contracts had no provision for CAISO
17 metering, they were permitted to use their existing metering in place of CAISO metering for CAISO
18 settlements until their contracts expire or are replaced. SCE uses its own metering along with a variety
19 of quality control measures to create Settlement Quality Meter Data that is transmitted to the CAISO on
20 a daily basis for settlements purposes. Once the legacy contract is replaced, the seller is required to
21 comply with all CAISO tariffs including the installation and use of CAISO approved metering. SCE
22 generally maintains its own backup meter in addition to the CAISO metering. The SCE meter also
23 provides the data for retail billing when the project is not generating and instead is consuming energy
24 from the grid.

⁹³ Many firm capacity PURPA and CHP contracts also contain provisions enabling projects to earn bonus payments for exceeding minimum contract performance requirements during both the summer and winter months. See "Performance Bonus" discussion in H.2.c of this chapter.

1 (1) PURPA and CHP Projects within SCE's Territory

2 SCE uses three types of "interval" metering for PURPA projects located
3 within its service area: (1) real time energy metering (RTEM); (2) basic interval; and (3) CAISO. Each
4 of these meter types are described below in this section. The meter data provides three major functions:
5 (1) billing for energy used; (2) payment for energy delivered; and (3) providing data to the CAISO for
6 settlements purposes. There remains one small project, Tehachapi Cummings Water District, which
7 uses a non-interval meter that provides only monthly totals that are manually read from the display on
8 the meter face by a meter reader. This project is inactive, and the generating equipment has been
9 removed. Voluntary termination has been offered to this project; however, no response has been
10 received.

11 For the purpose of CAISO settlements, SCE provides settlement ready
12 meter data to the CAISO for those legacy PURPA and CHP generators within its service territory that
13 are not required to have CAISO meters. Readings from all these RTEM and interval meters are
14 accumulated into hourly totals and aggregated according to the CAISO delivery point. Each delivery
15 point, whether it has a single dedicated generator, or an aggregation of multiple generators is reported to
16 the CAISO under a single global resource ID. Applicable loss factors are applied and the resulting data
17 are compiled into a comma separated value (.csv) format file by SCE's MV-90 meter reading system
18 and subsequently reported to the CAISO for settlement by uploading the data into the Market Results
19 Interface Settlements system, previously known as OMAR. Generators that have CAISO meters
20 installed have their meter data captured by the CAISO directly through a dedicated network referred to
21 as the Energy Communication Network (ECN), or as in the case of two projects, through a traditional
22 Internet Service Providers (ISP) for settlements. SCE uses either these same meters read by its MV-90-
23 meter reading system or its own revenue meters read through the retail billing system, known as the
24 Customer Service Re-Platform (CSRP). The CSRP became active on April 6, 2021 to replace the less
25 efficient and dated system known as the Customer Data Acquisition System (CDAS). The CSRP
26 obtains the data needed to process payments. The CDAS remains as a historical database and this

1 platform has not been removed. The meter data is transferred from the meter data systems mentioned
2 above to Endur, which is used to generate payment statements for these projects.

3 (a) The RTEM Process

4 SCE uses the RTEM process to measure most production pursuant
5 to PURPA and CHP contracts. Some installations have multiple meters. These RTEM meters generally
6 measure energy sold to SCE, energy supplied to the facility by SCE, and reactive power (VARs)
7 supplied by SCE. The RTEM meters store data internally, and the data are transmitted to a central
8 computer every 15 minutes.⁹⁴ Depending on the best pathway available at the site, the data transmission
9 occurs through the SCE-owned radio packet network called NETCOM, through a cell phone system, or
10 through the domestic telephone system. If the communication system fails, the meters retain the data
11 internally until the communication pathway is restored. The meters can also be read manually using a
12 handheld device or laptop computer. The data are transferred from the field to the central computer and
13 then to Endur, which is used to generate payment statements for these projects and to the MV-90 system
14 for CAISO settlements.

15 (b) Interval Meters

16 Basic manually read interval meters are used on very small
17 projects in areas still accessible by manual meter reading. These simple meters are all-electronic
18 interval meters that contain an internal recorder. Each month, an SCE meter reader visits the facility to
19 collect the meter data, using a laptop computer with an optical link that connects to the meter. The data
20 is then transferred to a central computer via SCE's internal network where it is used for contract
21 payments, CAISO settlement shadowing, and billing purposes for the business customer.

22 Some of the manually read interval meters are now being replaced
23 with smart meters that have the same recording capability but have the added feature of being read
24 remotely, thus eliminating the need for a meter reader to visit the site each month. The data from the
25 smart meters are automatically uploaded into the central metering database from which it is used for
26 payments, billing, and CAISO settlements.

⁹⁴ The central computer also supports SCE's billing, generation grid operations, and energy accounting systems.

1 (c) CAISO Meters

2 CAISO meters are required on all projects created after the
3 formation of the CAISO; however, a few exceptions are allowed for very small units. CAISO meters
4 are installed and maintained by the facility owner. Maintenance is performed only by those parties
5 certified by the CAISO. These parties are known as Meter Service Agents (MSA). Some installations
6 have multiple CAISO meters. The use of multiple meters is for measuring each component of a
7 facility's total generation or as a primary and secondary (backup) metering scheme.

8 CAISO meters are four-quadrant interval meters that measure
9 forward and reverse watts as well as forward and reverse VARs. CAISO meters are programmed with
10 applicable loss factors. The meters are capable of communicating with a remote system for data
11 collection. This communication generally occurs through a secure internet-like network known as the
12 ECN. In a few cases, a traditional Internet Service Providers (ISP) is used where the ECN is not readily
13 accessible. Two projects leverage a traditional ISP. The CAISO remotely reads these meters for
14 settlements. SCE also remotely reads these meters using its MV-90-meter reading system. As provided
15 in a specific contract, the meter data are used for various purposes, including CAISO settlements.

16 (2) Out-of-Service Territory PURPA Projects

17 SCE meters PURPA projects outside of its service area(OSA). Most of
18 the OSA projects are located within the area operated by the Imperial Irrigation District (IID) in
19 southeastern California. Energy is delivered by the local utility on behalf of the generators to SCE over
20 that utility's interties with SCE.⁹⁵ SCE receives the quantity of energy represented by and pays these
21 PURPA projects based upon hour-by-hour energy delivery schedules from the delivering utility. The
22 energy deliveries are compensated for line losses by the transmitting utility according to agreements
23 with the generators. The schedules are established one day ahead and are adjusted in real time between
24 SCE, the delivering utility, and the CAISO. The final schedule for each hour is retained in SCE's IAM
25 Web Harness System, which was previously known as the Gen Manager System.

⁹⁵ The special administration procedures discussed in this section is not applicable to the Terra-Gen Dixie Valley (ID 3106) project, which is located outside of SCE's service territory, but directly connected to SCE's system and therefore is directly metered by SCE. This project is not discussed in this section.

1 The projects located in IID's service territory are covered by a single
2 aggregated schedule in IAM Web Harness. Because each project must be paid separately, IID creates a
3 spreadsheet of hourly meter data and e-mails the spreadsheet on a weekly basis to SCE's Energy
4 Contracts Management Settlements group. The metered values are collected by revenue meters owned
5 by IID. The hourly meter data is uploaded to Endur on a monthly basis. For more discussion on SCE's
6 payment administration of its OSA PURPA contracts, see Section II.H.2.d) of this chapter.

7 c) Prescribed Dispatch

8 During the Record Period, there were no PURPA projects that contained
9 provisions permitting SCE to exercise a prescribed curtailment option. These provisions allow SCE to
10 prescribe periods when the project must either limit energy deliveries or receive a lower price for energy
11 not curtailed, to render SCE's customers economically indifferent. By exercising this right when SCE
12 expects to experience low market prices or transmission curtailment, higher cost PURPA contract
13 energy is curtailed, allowing for lower cost market purchases and therefore reduced costs to SCE's
14 customers.

15 d) Protection Equipment Testing Program

16 The protection equipment testing program (Protection Program) provides for the
17 uniform implementation of the standards and requirements contained in SCE's Rule 21 tariff, as
18 applicable to PURPA projects interconnected within SCE's service territory. The Protection Program is
19 intended to assure that any protection equipment owned by a party operating a facility pursuant to a
20 PURPA contract that directly interfaces with SCE's transmission or distribution system is regularly
21 tested in accordance with contractual requirements. Most PURPA contracts require that protection
22 equipment be tested at regular intervals of one, two, or four years depending on connection voltage.

23 Non-compliance with applicable protection equipment standards may subject SCE
24 and its customers to greater risk that generation equipment will not disconnect as required if it
25 malfunctions. This could cause damage to the project's equipment and introduce unwanted and possibly
26 harmful voltage fluctuations into SCE's system or could cause a portion of the SCE system to shut

1 down, thereby interrupting service to customers. There are also some conditions that could cause
2 harmonics and other power quality problems.

3 Compliance with this program is established by the project's submission to SCE
4 of a report that indicates a licensed electrician inspected the protective relays. SCE may deny a forced
5 outage claim for a project that does not provide the required reports because SCE will not have had
6 proof that equipment was properly maintained as required by the Rule 21 tariff.

7 e) QF Efficiency Monitoring Program

8 In D.91-05-007, the Commission authorized the utilities to monitor the operations
9 of cogenerators, as well as small power producers that use supplemental fossil fuel, to ensure that they
10 follow FERC operating and efficiency standards. The program implementing this decision is known as
11 the QF Efficiency Monitoring (QFEM) program.

12 Originally, state regulations permitted suspension of contract payments and
13 disconnection of PURPA projects from parallel operation for failure to comply with FERC standards.
14 Subsequent litigation and Commission decisions have modified the QFEM program, based on a
15 determination that federal law preempted the state's regulations. Currently, only FERC can determine if
16 a project is compliant and prescribe corrective actions in the event of noncompliance. However,
17 PURPA projects are still required to submit operating data to utilities annually to demonstrate
18 compliance with FERC standards. When it is cost effective, SCE will take measures necessary to file
19 complaints at FERC with respect to projects operating pursuant to a PURPA contract that fail to come
20 into compliance after notice. PURPA projects found to be out of compliance by FERC may lose their
21 QF status and be ordered to refund overpayments to the utility.

22 During the Record Period, SCE determined that all PURPA projects that
23 submitted complete operating, efficiency, and fuel use data for calendar year 2020 met FERC standards
24 for that year.⁹⁶ SCE continues to follow-up with 18 PURPA projects that have not submitted data for
25 various reasons as described in the table. These projects are identified below.

⁹⁶ Data is requested on an annual basis, so SCE receives 2021 data in 2022.

Table II-37
Projects That Failed to Submit Operation
and Efficiency Data for Operating Year 2021

	ID	Project Name	Size (kW)	Notes
1	2178	Claremont Club	280	Data promised by end of year but delayed due to resource constraints from COVID-19
2	2413	St. John's Hospital and Health Center	1,080	No reply received during record period.
3	2834	Techni-Cast Corporation	1,426	Instrumentation failure during calendar year 2020 prevented reporting. Working with project on correction plan.
4	2915	Tesoro Refining & Marketing Company LLC	31,000	Project terminated contract in record period.
5	4034	Central Hydroelectric Corp.	11,950	Project terminated contract in record period.
6	4054	City of Santa Ana	195	No reply received during record period.
7	4076	Camrosa County Water District	150	No reply received during record period.
8	4145	Mesa Consolidated Water District	50	No reply received during record period.
9	4202	Bishop Tungsten Development, LLC	250	No reply received during record period.
10	4206	Isabella Fish Flow Hydroelec Proj LLC	860	No reply received during record period.
11	4207	Monte Vista Water District	865	No reply received during record period.
12	5226	Caliente Springs, LLC	912	No reply received during record period.
13	5517	L-8 Solar Project, LLC	1,500	No reply received during record period.
14	5518	Heliocentric, LLC	1,500	No reply received during record period.
15	5625	US Topco Energy, Inc (Soccer Center)	3,000	No reply received during record period.
16	5747	AVS Phase 2, LLC	3,000	No reply received during record period.
17	5762	Central Antelope Dry Ranch B LLC	3,000	No reply received during record period.
18	6452	Yavi Energy, LLC (Eastwind)	3,000	No reply received during record period.

* Note: QF data is requested in 2021 for prior operating year 2020

f) Scheduled Maintenance

The scheduled maintenance program provides for uniform implementation and verification of the scheduled maintenance procedures in each firm capacity PURPA or CHP contract. Under all SOCs, and some nonstandard contracts, PURPA and CHP projects are responsible for providing advance notice to SCE of reductions in capacity availability due to scheduled maintenance. PURPA and CHP projects that give proper notice of their scheduled maintenance outages receive an “allowable maintenance hours” credit to be used in calculating their monthly firm capacity payment. Projects that reduce or cease generation without proper notice do not receive scheduled outage credit and, as a result, may be unable to earn their full capacity payment. PURPA and CHP projects are required to make all reasonable efforts to schedule maintenance during SCE’s off-peak winter months (October – May).

During the Record Period, three PURPA projects made a total of 142 requests to schedule maintenance, and four CHP projects submitted 24 such requests. SCE approved 140 of those

requests for PURPA projects and 22 for CHP projects after first verifying the hours taken were in conformance with the schedule, contractual provisions, and maintenance procedures. The aggregate maintenance credit totaled 2,720 hours.

g) Wind Operating Programs

Wind generation from SCE's projects are primarily concentrated in the Tehachapi Wind Resource Area near Mojave, the San Gorgonio Wind Resource Area near Palm Springs, or out-of-state. During the Record Period, SCE administered one (1) PURPA contract with a wind generation project, with a total on-line capacity of approximately 20 MW. SCE purchased wind energy from 30 projects procured through solicitations required by the RPS program totaling approximately 3,889 MW of capacity during the Record Period.

Wind generation presents unique challenges due to its unpredictability, power factor demands, distributed location, time of delivery, and rapid ramp rates, among other factors. SCE had been performing a number of special administrative activities unique to wind generation to assure contract performance including turbine inventory, VAR monitoring / enforcement, wind generation forecasting, real time wind monitoring, and wind generation curtailments. The latter two of these activities have been transitioned to the Transmission Operations Organization. The annual turbine inventories have been eliminated due to the ability to monitor production using meter data and the time intensive nature of the inventory activity. The completion of the Tehachapi Renewable Transmission Project (TRTP) and the Interim West of Devers project have eliminated the recent need to curtail wind generation due to voltage instability and line overloads. With the elimination of these transmission-constrained real time curtailments, the need to notify, track and pay for these curtailments has been eliminated. All the above-mentioned activities apply to wind generation whether it was procured under the PURPA or RPS programs.

h) Insurance Verification

PURPA and CHP projects are required to obtain and maintain comprehensive general liability insurance during the terms of their power purchase contracts. SCE uses a third-party insurance management solutions company, InsureTrack InsureTech, LLC (InsureTrack), to monitor

1 these requirements. During the Record Period, 30 PURPA projects and six CHP projects were actively
2 monitored by ITS. ITS, in conjunction with SCE, ensures that these projects have:

- 3 • Obtained required insurance upon execution;
- 4 • Maintained insurance policies and insurance carriers that meet the contract's
- 5 requirements; and,
- 6 • Maintained adequate insurance coverage throughout the terms of their
- 7 contracts.

8 i) Forecasting and Scheduling Accuracy

9 Certain CHP contracts have provisions for evaluating the accuracy of project's
10 energy and/or capacity forecast and assessing financial penalties associated with excessive forecast
11 errors. Two (2) compliance programs related to forecasting and scheduling accuracy were in effect
12 during the Record Period: Mean Absolute Error (MAE) and Scheduling and Delivery Deviation (SDD)
13 Adjustments.

14 In the MAE program, a monthly mean absolute error between a project's day-
15 ahead forecast and actual production is quantified and compared to a threshold. Exceeding the error
16 threshold can result in a forecasting penalty, and multiple non-compliances can trigger a temporary de-
17 rating of the project's firm contract capacity. SCE has five CHP projects subject to the MAE program.
18 During the Record Period, two (2) of the projects failed the MAE requirements and penalties in the
19 amount of \$20,000 were assessed.

20 The purpose of SDD Energy Adjustments is to mitigate, for SCE and the project,
21 any financial impacts due to excessive deviation of metered energy deliveries from the project's
22 schedule. SDD Adjustments are based on differences between real-time energy prices and contract
23 energy prices. Additionally, an administrative charge, based on CAISO's grid management charge for
24 uninstructed deviations, is assessed and charged to the project for any scheduling deviation outside of
25 the performance tolerance band. During the Record Period, nine PURPA and CHP projects incurred
26 administrative charges totaling \$17,232 for generating outside of the SDD performance tolerance band.

3. RPS

Compliance programs have been developed to ensure that RPS projects adhere to the terms of their contracts, and to integrate these projects effectively with the electric system grid. This section will discuss the RPS compliance. In addition, this section includes a summary of REC retirement activities.

a) Renewable Capacity Verification

SCE's capacity verification activities for renewable projects are designed to ensure that SCE's customers can reasonably expect to receive appropriate quantities of energy in full compliance with the associated contracts. Renewable capacity verifications are generally a one-time event performed either prior to the contract becoming commercial or around the contractual firm operation date.⁹⁷ The activity generally consists of a site visit to verify the equipment listed in the contract has been installed, to collect and verify the meter unique identification number(s), and, in some cases, to collect meter data for a chosen interval. The verification is intended to determine the maximum capacity capability of the project. From the demonstrated capacity, the energy delivery performance requirements are derived.

During the Record Period, there were no renewable projects that underwent capacity verifications.

b) Metering Energy Deliveries

SCE uses a combination of meter and schedule data to calculate payments for RPS projects that delivered energy during the Record Period. Generally, RPS generators are required to obtain CAISO-approved metering for their facilities. SCE will also install a settlement quality meter at all of the projects within its service territory to serve as a billing meter for energy used by the project and to serve as a backup and validation for the CAISO meter. The SCE meter is also used to account for renewable energy credits where applicable because it measures the actual generated energy without

⁹⁷ See "RPS Contracts that Achieved Commercial Operation" for a list of contracts that may have been eligible for a verification test. Note that due to different testing schedules established in each PPA, not all contracts in this table were tested during the Record Period.

1 applying loss/credit factors which do not apply to renewable credits administered by the WREGIS
2 organization.

3 CAISO meters are four-quadrant interval meters that measure forward and reverse
4 watts and VARs. CAISO meters can communicate with a remote system through ECN, a dedicated
5 secure network for data collection. The CAISO reads these meters remotely through the ECN. Two
6 projects leverage a traditional Internet Service Provider (ISP) for settlements. SCE also reads these
7 meters remotely, to check the data and to use the data in other ways as provided in the contracts.

8 SCE maintains its own meters at most of the RPS projects. These meters are used
9 for retail billing, verification, backup, RPS reporting through WREGIS, and in some cases, monthly
10 payments. The SCE meters are either real time energy meters (RTEMs) or standard interval meters.

11 For a more detailed description of the process surrounding the meters and data
12 collection see Chapter II, Section G.3.b. for the PURPA and CHP generators.

13 c) Active Monitoring

14 D.10-06-004 requires SCE to (a) devise a method to actively monitor each seller's
15 compliance with Standard Term and Condition 6 (STC 6)⁹⁸ and related contract terms, (b) administer the
16 active monitoring, and (c) make an affirmative showing in each ERRA Review proceeding of its method
17 for active monitoring and the results of that monitoring. This will demonstrate SCE's reasonable
18 contract administration of all contract terms, inclusive of obligations prior to and after the project's
19 commercial operation, as appropriate.⁹⁹

20 SCE's method to actively monitor each seller's compliance with STC 6 consists
21 of: (1) requesting the seller to provide a copy of the project's CEC pre-certification prior to initial
22 project delivery or within 365 days after the effective date of the contract, whichever is applicable
23 according to the contract, and requiring the project to attain full certification from the CEC shortly after

⁹⁸ STC 6 requires that the seller warrant throughout the term of the PPA that (i) the project qualifies and is certified as an Eligible Renewable Resource (ERR) and (ii) the output qualifies under requirements of the California RPS. The only exception is upon a change in law, wherein seller is contractually obligated to use commercially reasonable efforts to comply with the change in law (paraphrased for simplicity, for actual STC 6 verbiage, see D.08-04-009, Appendix A, p. 6).

⁹⁹ D.10-06-004, p. 21, OP 2.

1 the project begins commercial delivery; (2) monitoring changes in law or regulations that may affect
2 RPS eligibility; (3) monthly monitoring of the CEC website to verify that facilities are RPS-certified via
3 each facility's unique RPS ID (cross-checked to the CEC certification); and (4) verifying the RPS ID
4 during WREGIS registration and routine maintenance. Additionally, SCE performs site visits, capacity
5 demonstrations, and capacity verifications during the construction and commercial operation of each of
6 the phases of the project to ensure that the project follows the contract.

7 RPS projects with contracts executed during the Record Period are in varying
8 stages of providing a copy of the individual project's CEC pre-certification.

9 Currently, SCE's entire portfolio of RPS-eligible contracts consists of proven
10 applications of landfill gas, biomass, digester gas, geothermal, small hydro, conduit hydro, solar thermal,
11 solar PV, and wind technologies as generating facilities.

12 SCE's contract compliance includes regular monitoring of the CEC website to
13 verify that facilities are RPS-certified. This review is embedded in the process for WREGIS registration
14 and maintenance. There was one (1) project found during 2018 to have issues with its CEC
15 Certification, which still remains unresolved as of the end of the Record Period.

16 (1) Terra-Gen Dixie Valley, LLC (ID 3011/3106)

17 When this project transitioned from a PURPA contract to an RPS contract,
18 SCE discovered the capacity in the CEC Certification was outdated and the update was not submitted
19 with the CEC in a timely manner. Per the RPS Guidebook rules, SCE expects the project to be
20 ineligible for RPS counting for a period before the capacity update. However, the CEC processed the
21 capacity update without changing the RPS eligibility in the CEC Certification. For the purpose of total
22 transparency and to ensure correct determination of RPS eligibility, SCE sent a notification letter in late
23 2018 to the CEC explaining the issue and to also confirm the RPS eligibility. SCE has followed up with
24 the CEC numerous times; however, as of the close of this Reporting Period, SCE is still awaiting a final
25 response from the CEC.

Capacity verifications are discussed in detail in a prior section of this chapter. No physical site visits to any RPS sites were conducted during the reporting period due to SCE's travel restriction policy in response to COVID-19.

d) Western Renewable Energy Generation Information System (WREGIS)

Pursuant to SB 1078 and Public Utilities Code §399.25, an electronic accounting and tracking system was developed to verify retail sellers' compliance with the RPS. This system, WREGIS, became operational in June 2007. SCE participates in WREGIS pursuant to Public Utilities Code §399.25 and is subject to the compliance requirements of the CEC and the Commission.

During the Record Period, SCE was account holder for 321 facilities registered in the WREGIS system. Those facilities were comprised of 383 individually-registered generating units representing all eligible renewable PURPA and utility-owned projects, and most RPS contracts. All other RPS projects register their facilities as their own account holder and then transfer their RPS credits to SCE for compliance purposes.

SCE's costs associated with registering and tracking renewable energy deliveries in WREGIS includes account fees, volumetric fees, and service fees for renewable power. SCE paid \$236,699.25 in WREGIS fees during the Record Period.

e) RPS Insurance Verification

RPS projects are required to obtain and maintain comprehensive general liability insurance during the terms of their power purchase contracts. SCE uses a third-party insurance management solutions company, InsureTrack, to monitor these requirements. During the Record Period, 267 RPS projects were actively monitored by InsureTrack. InsureTrack, in conjunction with SCE, ensures that these projects have:

- Obtained the required insurance upon contract execution;
- Maintained insurance policies and insurance carriers that meet the contract's requirements; and,
- Maintained adequate insurance coverage throughout the terms of their contracts.

1 f) Wind Operating Programs

2 Please refer to Chapter II, Section 3.G.f. for details regarding both RPS and
3 PURPA wind operating programs.

4 g) Renewable Energy Credit (REC) Retirement

5 During the Record Period, SCE retired 34.2 million RECs corresponding to
6 generation from vintage years 2018, 2019, and 2020. This is at least five times more than the number of
7 RECs retired in 2020, because most of the RECs were held from retiring during 2020 to accommodate
8 for the possibility of REC sales.

9 RECs tracked in WREGIS must be retired before they can be counted toward
10 meeting RPS targets. The RPS Eligibility Guidebook requires that WREGIS certificates, or RECs, be
11 retired within 36 months from the initial month and year (vintage month and year) of generation of the
12 associated electricity to be eligible for the RPS program. RECs may be retired across compliance
13 periods if the retirement is within 36 months of the vintage month and year.

14 To ensure that the proper number of RECs are retired, SCE must compare, for
15 every month and by project, the number of WREGIS certificates that are eligible for retirement with the
16 amount of RPS eligible generation that was procured. Any discrepancy must be investigated, explained,
17 and reconciled. Discrepancies usually arise from initial meter data errors that have resulted in prior
18 period adjustments in WREGIS. These are adjustments in which 1) additional WREGIS certificates are
19 created in a subsequent month (but labeled with the original vintage month) to account for a deficiency
20 in the original vintage month when the additional certificates should have been created, or 2) creation of
21 certificates is withheld in a subsequent vintage month to account for a surplus of certificates created in a
22 prior vintage month. When a discrepancy is found, SCE must submit a prior period adjustment to the
23 WREGIS website and verify in the subsequent month that the proper number of certificates were created
24 or withheld, as applicable, in WREGIS. For withheld certificates, SCE must manually track outside
25 WREGIS the correct vintage month and year of the adjustment to ensure the adjusted RECs are retired
26 within the 36-month window, since the vintage information of the adjusted RECs recorded in WREGIS
27 does not reflect the true vintage month and year. When retiring WREGIS certificates, SCE must also

1 identify RECs whose RPS eligibility has not been established and work with the generating project to
2 resolve outstanding issues before retirement. If resolution is not possible before the reporting deadline,
3 SCE excludes the RECs in question from retirement for the compliance period.

4 The actual retirement of RECs takes place on the WREGIS website. Several
5 factors related to the WREGIS website make REC retirement a cumbersome, manual process. RECs are
6 retired in batches, which are groups of RECs consisting of all the generation from a generating unit
7 during a given month. In a typical record period, SCE's portfolio includes more than 400 registered
8 generating units, which equates to more than 4800 batches of RECs to be retired. Since REC retirement
9 is final, every batch selected must be double checked to ensure correct association with the generator
10 and vintage month. In addition, each selected batch is checked for the correct number of total
11 RECs. This is especially difficult for batches with prior period adjustments, as multiple batches may
12 need to be added to form one complete month, or a batch may need to be split to different months. After
13 the REC batches are selected, the correct retirement subaccount, retirement type, state, RPS compliance
14 period, and retirement reason must be specified to complete the process. The WREGIS website allows a
15 maximum of 300 batches to be selected per retirement action, but typically only around 100 batches are
16 selected per retirement action. This is done to reduce the chance of batch selection error and to allow
17 adequate time to double check selection quantity before the website times out. Therefore, the process
18 must be repeated about 50 times if all REC batches from a typical record period were to be retired.

19 In summary, the REC retirement process is highly complex and involves a
20 substantial amount of manual effort and rigorous processes to avoid errors and ensure accuracy. It is
21 SCE's former practice to hold all RECs from a compliance period in the active subaccount and retire
22 those RECs in late spring/early summer following the end of the compliance period. In the Record
23 Period, SCE started a new practice of retiring all RECs on an annual basis from the previous year. This
24 practice was implemented for the purpose of workload balance between each year of the compliance
25 period and reducing risk of RECs expiring prior to retirement. An exception to this new practice is that
26 RECs with outstanding quantity or eligibility issues will be held off from retirement and retired as issues
27 are resolved.

During the Record Period, there were no RECs that expired (went beyond the 36-month window).

h) Curtailment of Renewable Resources

Many of SCE's RPS contracts contain a variety of curtailment provisions. Curtailment of resources may be a result of CAISO grid reliability events, outages by the transmission providers, or for economic reasons. Curtailments may include directing the resource to reduce output to any level less than its current schedule and may be of any duration greater than one 5-minute interval. Generally, if the curtailment is a result of CAISO grid reliability or an outage called by the transmission provider, whether planned or unplanned, the resource is obligated to comply accordingly, and the curtailed energy is not paid under SCE's contracts. Economic curtailments, however, are contemplated in most of the contracts and generally allow some form of reimbursement to the project. RPS contract provisions vary and may include simple "take or pay" methodologies, provisions including a portion of "no cost" curtailments prior to a "take or pay" method or more complex provisions such as Day Ahead Market Clearing Price (DA-MCP).

During the Record Period, SCE implemented a systematic approach to monitoring and identifying the types of curtailments and calculating payment of curtailed amounts to support contract settlements in Endur. Approximately 521,000 curtailed intervals were analyzed and appropriately settled.

4. BESS

Compliance programs have been developed to ensure that BESS projects adhere to the terms of their contracts, and to integrate these projects effectively with the electric system grid. This section will discuss the BESS compliance.

a) BESS Performance Verifications

SCE's verification testing activities for BESS projects are designed to ensure that the constructed facility complies with the PPA defined performance attributes. The attributes evaluated may include, not limited to, contracted energy, contracted capacity, discharging capacity, charging

capacity, roundtrip efficiency and ramping capabilities. The tests may be performed before the initial commercial operation, and periodically during the term of the project, as applicable.

Table II-38 lists the projects that underwent initial commercial operation tests in accordance with the respective PPA during the Record Period.

Table II-38
BESS Performance Verifications

	ID	Project
1	12001	AES ES Alamitos, LLC
2	12034	SP Tranquillity Energy Storage, LLC
3	12035	SP Garland Solar Storage, LLC
4	12036	Edwards Sanborn Storage I, LLC
5	12037	Gateway Energy Storage, LLC
6	12038	McCoy Energy Storage, LLC
7	12039	Blythe Energy Storage II, LLC
8	12040	Blythe Energy Storage III, LLC

b) BESS Insurance Verification

BESS projects are required to obtain and maintain comprehensive general liability insurance during the terms of their power purchase contracts. SCE uses a third-party insurance management solutions company, InsureTrack, to monitor these requirements. During the Record Period, 25 BESS projects were actively monitored by InsureTrack. InsureTrack, in conjunction with SCE, ensures that these projects have:

- Obtained the required insurance upon contract execution;
- Maintained insurance policies and insurance carriers that meet the contract's requirements; and,
- Maintained adequate insurance coverage throughout the terms of their contracts.

H. Contract Payment Process

SCE applies a set of four policies to ensure that all PURPA, CHP, RPS, tolling, RA, BESS, DRAM, transmission, and gas contracts are paid accurately and on time. All payment documentation is

placed in the identified network drives and updates to contract terms are placed into their respective settlement system (*i.e.*, Endur,¹⁰⁰ and/or the appropriate trading/transactional databases). These policies are: (1) pay projects according to the terms and conditions of their contracts, as interpreted by relevant Commission decisions, orders, pertinent industry practices, and internal SCE controls, including those controls necessary to comply with the Sarbanes-Oxley legislation; (2) make payments in a timely manner according to the terms and conditions of the contracts; (3) subject to timely notification of errors in conformity with contractual terms, correct calculation errors for a time period up to that permitted under the contract and applicable statute of limitations; and, (4) promptly investigate the facts relating to payment variances and coordinate with Energy Procurement and Management's Energy Contracts Management group, as applicable. If adjustments are warranted, carry them out in a timely manner.

Depending upon the type of PPA/product (EEI, WSPP, ISDA, NAESB, ERR), there are numerous contracts that require the parties to exchange invoices each month. In the instances where counterparty invoicing is required and SCE disputes the correctness of the invoice or a portion thereof, SCE will pay only the undisputed portion of the invoice and communicate, in writing (via e-mail), the basis for the variance. Payment of the disputed portion of the invoice shall not be required until the parties resolve the invoice variance.

The sections below discuss the procedures, guidelines, and processes regarding the monitoring, validation, and calculation of Conventional, PURPA, CHP, RPS, BESS and DRAM contract settlements.

1. Conventional

The sections below discuss the administrative procedures, guidelines, and processes regarding the monitoring, validation, and calculation of RA, BESS, DRAM, gas, transmission, tolling and power contract settlement provisions.

a) RA

SCE compensates contracted generators using the unit availability quantity (in MW) filed in the CAISO/CPUC Supply-Plan Template, which occurs at T-45 days prior to the showing month. These RA availability quantities are used for calculation of a monthly RA capacity payment.

¹⁰⁰ This includes User Defined Applications (UDAs) and systems developed for emissions trading.

Each payment is based on contractual parameters as specified in the contract terms and conditions. Adjustments or reductions to payments are made based on events of unavailability. Any non-availability charges or availability credits are captured in the CAISO Resource Adequacy Availability Incentive Mechanism (RAAIM)¹⁰¹ process and are passed-through on the monthly invoice to the applicable counterparty.

b) BESS

SCE is currently paying under three contract structures for stand-alone battery energy storage system and battery energy storage system co-located with a renewable generator. Those contract structures include “RA only,” “RA with energy put option,” and toll. For RA only contracts, SCE only purchases the RA from the project. For RA contracts with energy put option, SCE purchases RA, and in years where the seller exercises its energy put option and for toll contracts, SCE purchases RA and all energy and ancillary services from the project.

For RA only and during RA periods in the RA with energy put option contracts, SCE compensates the seller monthly based on contractual parameters and timing. The monthly RA capacity payment is calculated based on the product of the delivered capacity and the contract price and follows the CAISO/CPUC Supply Plan restrictions stated in the RA section above. Adjustments or reductions to payments are made based on events of unavailability. In addition, for some RA with energy put option contracts, the seller compensates SCE for a monthly energy retention capacity payment. This is calculated as the product of the contract capacity and the contract price for the energy retention.

During put periods in the RA with energy put option contracts and toll contracts, the settlement is treated similar to conventional tolling projects. SCE compensates the seller monthly based on contractual parameters and timing. The payment consists of a monthly energy capacity payment, which may be reduced due to unavailability, if the efficiency of the project falls below contractual parameters, or if it is not fully available for RA compliance. In addition, there is an energy

¹⁰¹ While the RAAIM market mechanism implementation was initially delayed in April 2017, in early 2018, the CAISO successfully implemented the program with retroactive payments covering the entire Record Period.

adjustment payment, which compares the actual efficiency of the battery energy storage system to the guaranteed efficiency factors outlined in the contract. There is also a variable O&M payment based on discharged energy and an annual variable asset replacement payment to compensate the seller for wear-and-tear on the batteries above a defined level of operation in the contract.

c) DRAM

SCE compensates either the Aggregator or Demand Response Provider (seller) for various products, including system capacity, local capacity and flexible capacity. The product monthly quantity and contract price for the type of products are indicated in a seller-provided table for the applicable showing month. SCE makes a monthly payment to the seller after the applicable showing month. The delivered capacity payment is equal to the product of the contract price and the demonstrated capacity for the applicable showing month.

d) Gas Transactions

SCE purchases physical and financial gas from market suppliers to deliver gas to generating facilities either under contract with or owned by SCE. These transactions are completed using various agreements including the NAESB, gas annex to the EEI, or gas annex to the ISDA. Payment provisions are covered under the NAESB and/or gas annex to a master agreement. Payment is based on a volume (MMBtu) and price (either fixed or identified by reference to a published index) per each individual transaction. Payments are typically made on the twenty-fifth day (25th) of the month following the month of delivery.

e) Transmission

SCE purchases transmission from market suppliers. These transactions are covered under the TREA or tariff and are paid based on the contractual obligations under the contract. Payment is based on volume (MW) multiplied by price (either fixed or identified by reference to a published index). Payments are typically made within twenty (20) days of receipt of invoice.

f) Power Purchase Tolling Agreements

Generators that have a tolling agreement with SCE are compensated using a combination of energy and capacity payment types varying from monthly capacity, reduced monthly

capacity, variable O&M, and start-up charges. Each payment is based on contractual parameters. The generator is also paid a heat-rate adjustment payment, which calculates the difference between actual gas usage and contractual heat rates, as defined in the respective agreement. Adjustments or reductions to payments are made based on events of unavailability. SCE settles after-the-fact on a calendar-month basis, with payments for the prior month being settled on the latter of the twentieth (20th) day of each month or ten (10) days after receipt of invoice.

g) Power Transactions

In addition to power purchase tolling agreements, SCE purchases power from market suppliers. SCE power transactions under the EEI, WSPP, or power annex to the ISDA are paid based on the contractual obligations under the contract. Payment is based on volume (MWh) multiplied by the identified index and is typically made on the twentieth day (20th) of each month following the month of delivery.

2. PURPA and CHP

The sections below discuss the administrative procedures, guidelines, and processes regarding the monitoring, validation, and calculation for PURPA and CHP contract settlement provisions.

a) Energy Rates for PURPA and CHP Contracts

Monthly energy rates are calculated based on the following components: contract specific Time of Delivery (TOD) heat rates, gas index, gas transportation rate, contract specific annual Variable O&M Charges (VOM), and Hourly Location Adjustment Factors (LA), as described below.

On August 1, 2009, the Commission implemented Resolution E-4246, which finalized a new market index formula (MIF) that changed how SRAC energy pricing is calculated and established new as-available capacity rates. Resolution E-4246 affects all PURPA contracts, both renewable and cogeneration that are paid SRAC pricing for energy and as-available capacity.

The new SRAC, effective January 1, 2012, includes an adder called the Hourly Location Adjustment Factor (LA).¹⁰² The LA was implemented to replace the Generation Meter

¹⁰² D.10-12-035; CHP Program Settlement Agreement Term Sheet, Section 10, pp. 45-48.

Multiplier (GMM); after CAISO’s MRTU “go-live” in April 2009, CAISO discontinued publishing the GMMs because it had converted to a nodal market. The market utilizes locational marginal pricing (LMP) at various pricing nodes (PNodes) throughout the CAISO. The LA is equal to LMP(QF) minus LMP (Trading Hub), where LMP(QF) equals the hourly day-ahead LMP at the point of interconnection with the CAISO grid associated with the QF generating facility, and LMP (Trading Hub) is the hourly LMP of the trading hub where the generating facility is located (*e.g.*, SP15). The LA calculation applies to various PURPA and CHP agreements as follows:

- Legacy Amendments
 - Option A: Subject to LA
 - Option B: Non-renewable projects are subject to LA, renewable projects are not
- CHP RFO PPA: Subject to LA
- QF SOC: Subject to LA
- AB 1613 Agreements: Not subject to LA

As addressed in SCE’s 2012 ERRR Review filing (A.13-04-001)¹⁰³, SCE executed numerous Legacy Amendments per the QF Settlement. These Pro Forma Legacy amendments were offered to all QFs that had existing contracts (Legacy PPAs or Legacy Agreements) with SCE as of the Settlement Effective Date; these projects are often referred to as Legacy QFs. The Legacy Amendments provided five options, called A, B, C1, C2, and C3 (as of 12/31/2015, the QF Legacy Amendments Energy Pricing Options for C1, C2 and C3 expired). The details of these options are explained further in Table II-39 below.

¹⁰³ See A.13-04-001, SCE-02, Chapter IX, pp. 7-13.

Table II-39
QF Legacy Amendment Energy Pricing Options

Legacy Amendment Option	A	B
Eligible Contracts	Legacy	Legacy
Incremental Energy Heat Rate (IER)	2012 = 8,225	2012 = 8,600 IER
	2013 = 8,125	2013 = 8,500 IER
	2014 = 8,125	2014 = 8,500 IER
	2015 = 2011 & 2012 Actual Heat Rate	2015+ = Market
	2016+ = Market	
GHG Risk	Buyer 100% 2013 - 2015 2016+ GHG cost embedded in the gas price, and therefore paid to Seller through the calculated SRAC energy pricing	Seller
Location Adjustment Factor	YES	No, if renewable QF

b) Capacity for PURPA and CHP Contracts

PURPA and CHP contracts receive a capacity payment based on production.

There are three types of capacity payments eligible to PURPA and CHP projects. Those include Firm, As-Available, and Excess As-Available. The pricing for these products is generally based on forecasts at the time of execution or SRAC.

c) Performance Bonus – Capacity

Many firm capacity PURPA contracts contain provisions that enable the projects to earn capacity bonus payments to encourage on-peak production during summer months. Projects are eligible to receive winter bonus payments if they meet specified summer on-peak contract performance requirements. SCE ensures that only the firm capacity PURPA contracts that have met monthly and seasonal contractual requirements receive a bonus payment.

1 d) Out of Service Territory Projects

2 Several of SCE's PURPA and CHP projects are located outside of SCE's service
3 territory (e.g., the IID and PG&E service territories), where energy is typically delivered by the local
4 utility to SCE over that utility's interties. SCE receives the quantity of energy represented by and pays
5 the PURPA projects based upon hour-by-hour energy delivery schedules from the delivering utility.¹⁰⁴

6 e) Line Loss Factor

7 During the Record Period, PURPA and CHP projects that received Commission-
8 approved short run avoided cost (SRAC) prices for their energy deliveries (and did not execute a Legacy
9 Amendment providing for a line loss factor of 1.00) continued to have the line loss factor methodology
10 specified in D.01-01-007 applied to their energy payment calculations. The line loss factors for a
11 particular PURPA or CHP contract include the project's distribution loss factor (DLF) and transmission
12 loss factor (TLF), and, in some cases, a transformer loss factor (unrelated to D.01-01-007). Since the
13 April 1, 2009 "go live" of MRTU, the CAISO discontinued posting generation meter multipliers
14 (GMM)/tie meter multipliers (TMM) that are a component of the TLF calculation. Starting in May
15 2009, SCE replicated the April through December 2008 GMM/TMM data to use in the calculations for
16 the same monthly settlement periods in 2009 and going forward.

17 f) Time of Delivery (TOD) Periods

18 During the Record Period, SCE managed active PURPA/CHP contracts that were
19 paid using TOD Factors in the payment calculations. The TOD Factors for the delivery period are
20 multiplied by the product of metered energy for that delivery period and the energy price.

21 3. RPS

22 The sections below discuss the administrative procedures, guidelines, and processes
23 regarding the monitoring, validation, and calculation for RPS contract settlement provisions.

¹⁰⁴ Other projects that are out-of-state are either dynamically scheduled to the CAISO or are directly connected to SCE's transmission/distribution system via generator intertie. Those projects, from a payment standpoint, are considered within SCE's service area.

1 a) Out of Service Area Projects

2 Some of SCE's RPS projects are located outside of SCE's service area (*e.g.*, the
3 IID, PG&E, and out of state territories), where energy is typically delivered by the local utility to SCE
4 over that utility's interties. SCE receives the quantity of energy represented by, and pays the RPS
5 projects based upon, hour-by-hour energy delivery schedules from the delivering utility, or metered
6 amounts per the contract settlement provisions.

7 b) Renewable Energy Credit (REC) Sales

8 SCE REC Sales are transacted under the EEI and Confirmation. SCE receives
9 payment from the counterparty based on price multiplied by quantity.

10 c) Energy Payment Calculations

11 Many RPS contracts are paid for the energy delivered by the generator based on
12 time of delivery and the contracted energy price.

13 (1) Time of Delivery (TOD) Periods

14 During the Record Period, SCE managed active RPS contracts which were
15 paid using TOD Factors in the energy payment calculations. The TOD Factors for the delivery period
16 are multiplied by the product of metered energy for that delivery period and the energy price.

17 4. Other Impacts to Payments

18 a) CAISO Charges

19 Certain contracts provide for CAISO charges, and in some cases CAISO
20 revenues, to be the seller's responsibility. Some of those contracts include specific payment provisions
21 during the start-up period through commercial operation, regarding schedule deviations, and in cases of
22 a seller-initiated test. As the Schedule Coordinator for most of SCE's contract portfolio, CAISO charges
23 and revenues are allocated and available to SCE. Upon receipt of the charges and/or revenues, SCE
24 credits or debits the next payment to the generator depending on the activities that took place during the
25 delivery month.

1 b) Scheduled Delivery Deviation Adjustments (SDD)

2 Certain contracts provide for SCE to calculate SDD adjustments in cases where
3 SCE is the Scheduling Coordinator. For PURPA/CHP, the hourly SDD Adjustments are based on the
4 difference between real-time LMP prices and contract energy prices. Certain tolling contracts use SDD
5 as an uninstructed energy deviation charge. Additionally, a charge based on CAISO's grid management
6 for uninstructed deviations is assessed and charged to the project for any scheduling deviation outside of
7 the performance tolerance band identified within each contract. For Record Period charge results, see
8 Section G.2.i above.

9 c) Scheduling Coordinator Fees

10 The QF SOC, CHP RFO, and the AB 1613 contracts provide for SCE to apply a
11 monthly Scheduling Coordinator (SC) Fee for SCE's SC services if the generator elects to use SCE as
12 their SC. The monthly fee is based on the generator's net contract capacity and the respective fee
13 amount provided in the contract. The fee is a constant value that appears on each of the generator's
14 monthly payment statements.

15 d) Mean Absolute Error (MAE)

16 The firm capacity QF SOC and CHP RFO contracts contain provisions for SCE to
17 calculate the MAE based on a comparison of the generator's metered output and their day-ahead
18 forecast, quantified and compared to a threshold. If the MAE is greater than 15 percent, or if the
19 average forecast error for all hours of the month is greater than three MW or 3 percent of the Seller's
20 Day-Ahead Forecast (depending on the contract), then an "MAE Failure" will be deemed to have
21 occurred. In the event of a MAE Failure, the generator will be assessed a penalty. If the failure
22 continues for several months, the generator may be either temporarily or permanently derated. For
23 Record Period charge results, see Section G.2.i above.

24 e) Energy Delivery Performance Administration

25 Certain RPS contracts include provisions that require the sellers to meet certain
26 minimum energy delivery obligations. The energy delivery obligation calculation may be performed on
27 either an annual or multi-year basis depending on contract terms. A comparison of the actual energy

1 deliveries or the average annual energy delivery over multiple years to the contracted minimum amount
2 determines if the energy delivery obligation has been met. Performance requirements for the delivery
3 obligation differ by resource type. If in any term year a failure to meet the minimum delivery obligation
4 occurs, then the seller is subject to a penalty using the amount of shortfall multiplied by a contractual
5 rate. For Record Period charge results, see Section D.h above.

6 f) Economic Curtailments

7 Economic curtailments are contemplated in most of SCE's RPS contracts and
8 generally allow some form of reimbursement to the project. Contract provisions vary and may include
9 simple "take or pay" methodologies, provisions including a portion of "no cost" curtailments in MWh
10 prior to a "take or pay" method, or more complex provisions such as Day Ahead Market Clearing Price
11 (DA-MCP). Based on case-by-case contract language, SCE processes payments to compensate the
12 Seller the month following an economic curtailment.

13 g) CAISO System Emergency

14 Certain short-term agreements were entered into in response to the CAISO
15 System Emergency that resulted from the heat waves occurring in the months of June through October
16 2021. Per the agreements, compensation to the sellers allowed for supplemental payment for fuel where
17 not otherwise addressed in the PPA, for generation in excess of a settlement interval cap, for generation
18 above contract capacity, or for certain CAISO revenue to be passed through to the generator, during the
19 defined heat wave period. For additional information regarding the CAISO System Emergency and the
20 Record Period payments, see Section E.2 above.