Appendix 22A
SWP and CVP Energy Generation and Consumption by Facility

This appendix provides comprehensive breakdowns of the estimated energy generation and consumption for State Water Project (SWP) and Central Valley Project (CVP) facilities for existing conditions and all project alternatives (Tables 22A-1 and 22A-2), as summarized in Chapter 22, *Energy*.

22A.1 State Water Project

Table 22A-1 shows comprehensive breakdowns of the estimated energy generation and consumption for SWP facilities for existing conditions and all project alternatives.

22A.2 Central Valley Project

Table 22A-2 shows comprehensive breakdowns of the estimated energy generation and consumption for CVP facilities for existing conditions and all project alternatives.

Table 22A-1. State Water Project Energy Generation and Consumption by Facility

	Existing Conditions	Alt 1	Alt 2a	Alt 2b	Alt 2c	Alt 3	Alt 4a	Alt 4b	Alt 4c	Alt 5
SWP GENERATION FACILITIES										
North of the Delta SWP Generation Facility										
Oroville Reservoir Power Facility										
Capacity (MW)—Long-Term	669	670	669	671	670	670	669	671	670	670
Generation (GWh)—Long-Term	1,929	1,929	1,928	1,929	1,928	1,929	1,928	1,929	1,928	1,929
Thermalito Power Facility										
Capacity (MW)—Long-Term	27	27	27	27	27	27	27	27	27	27
Generation (GWh)—Long-Term	228	228	228	228	228	228	228	228	228	228
Total of North of the Delta SWP Generation Facilities										
Capacity (MW)—Long-Term	696	697	697	699	698	697	697	699	698	698
Generation (GWh)—Long-Term	2,157	2,157	2,157	2,158	2,157	2,157	2,157	2,158	2,157	2,158
South of the Delta SWP Generation Facility										
SWP San Luis Power Facility										
Capacity (MW)—Long-Term	121	135	136	133	134	135	136	133	134	135
Generation (GWh)—Long-Term	103	120	120	113	117	120	120	113	117	111
Alamo Power Facility										
Capacity (MW)—Long-Term	11	12	12	12	12	12	12	12	12	12
Generation (GWh)—Long-Term	86	97	97	95	96	97	97	95	96	97
Mojave Power Facility										
Capacity (MW)—Long-Term	9	11	11	11	11	11	11	11	11	11
Generation (GWh)—Long-Term	65	74	74	72	73	74	74	72	73	74
Devil's Canyon Power Facility										
Capacity (MW)—Long-Term	96	111	110	107	109	111	110	107	109	111
Generation (GWh)—Long-Term	781	897	895	868	887	897	895	868	887	899
Warner Power Facility										
Capacity (MW)—Long-Term	34	38	38	37	38	38	38	37	38	38
Generation (GWh)—Long-Term	276	316	314	307	312	316	314	307	312	316

	Existing Conditions	Alt 1	Alt 2a	Alt 2b	Alt 2c	Alt 3	Alt 4a	Alt 4b	Alt 4c	Alt 5
Castaic Power Facility										
Capacity (MW)—Long-Term	52	60	59	58	59	60	59	58	59	60
Generation (GWh)—Long-Term	457	523	520	509	517	523	520	509	517	523
Total of South of the Delta SWP Generation Facilities										
Capacity (MW)—Long-Term	323	367	367	358	363	367	367	358	363	367
Generation (GWh)—Long-Term	1,768	2,026	2,019	1,964	2,003	2,026	2,019	1,964	2,003	2,019
Total of SWP Generation Facilities										
Capacity (MW)—Long-Term	1,020	1,064	1,064	1,056	1,061	1,064	1,064	1,056	1,061	1,065
Generation (GWh)—Long-Term	3,925	4,183	4,176	4,122	4,160	4,183	4,176	4,122	4,160	4,177
SWP PUMPING FACILITIES										
South of the Delta SWP Pumping Facility										
SWP Banks Pumping Facility										
Energy Use (GWh)—Long-Term	724	887	884	848	873	887	884	848	873	662
SWP Isolated Facility										
Energy Use (GWh)—Long-Term	–	7	2	13	10	11	9	10	10	244
SWP San Luis Pumping Facility										
Energy Use (GWh)—Long-Term	144	172	172	163	169	172	172	163	169	199
SWP Dos Amigos Pumping Facility										
Energy Use (GWh)—Long-Term	313	385	384	367	379	385	384	367	379	527
Buena Vista Pumping Facility										
Energy Use (GWh)—Long-Term	347	395	394	385	391	395	394	385	391	396
Teerink Pumping Facility										
Energy Use (GWh)—Long-Term	422	481	479	468	476	481	479	468	476	481
Chrisman Pumping Facility										
Energy Use (GWh)—Long-Term	883	1,007	1,004	980	997	1,007	1,004	980	997	1,008
Edmonston Pumping Facility										
Energy Use (GWh)—Long-Term	3,093	3,529	3,516	3,433	3,494	3,529	3,516	3,433	3,494	3,532
Pearblossom Pumping Facility										
Energy Use (GWh)—Long-Term	544	622	621	604	616	622	621	604	616	623

	Existing Conditions	Alt 1	Alt 2a	Alt 2b	Alt 2c	Alt 3	Alt 4a	Alt 4b	Alt 4c	Alt 5
Oso Pumping Facility										
Energy Use (GWh)—Long-Term	141	161	160	156	159	161	160	156	159	161
South Bay Pumping Facility										
Energy Use (GWh)—Long-Term	105	123	123	120	122	123	123	120	122	124
Del Valle Pumping Facility										
Energy Use (GWh)—Long-Term	1	1	1	1	1	1	1	1	1	1
Las Perillas Pumping Facility										
Energy Use (GWh)—Long-Term	8	9	9	9	9	9	9	9	9	9
Badger Hill Pumping Facility										
Energy Use (GWh)—Long-Term	21	21	21	21	21	21	21	21	21	21
Total of South of Delta SWP Pumping Facilities										
Energy Use (GWh)—Long-Term	6,744	7,800	7,769	7,568	7,717	7,803	7,776	7,565	7,717	7,989
Total of SWP Pumping Facilities										
Energy Use (GWh)—Long-Term	6,744	7,800	7,769	7,568	7,717	7,803	7,776	7,565	7,717	7,989
Total of SWP Facilities										
SWP Generation Facilities										
Capacity (MW)—Long-Term	1,020	1,064	1,064	1,056	1,061	1,064	1,064	1,056	1,061	1,065
Generation (GWh)—Long-Term	3,925	4,183	4,176	4,122	4,160	4,183	4,176	4,122	4,160	4,177
SWP Pumping Facilities										
Energy Use (GWh)—Long-Term	6,744	7,800	7,769	7,568	7,717	7,803	7,776	7,565	7,717	7,989
All SWP Facilities										
Net Generation (GWh) —Long-Term	-2,819	-3,616	-3,593	-3,446	-3,557	-3,619	-3,599	-3,443	-3,557	-3,812

Alt = Alternative; GWh = gigawatt-hour; MW = megawatt; SWP = State Water Project.

Table 22A-2. Central Valley Project Energy Generation and Consumption by Facility

	Existing Conditions	Alt 1	Alt 2a	Alt 2b	Alt 2c	Alt 3	Alt 4a	Alt 4b	Alt 4c	Alt 5
CVP GENERATION FACILITIES										
North of the Delta CVP Generation Facilities										
Trinity Reservoir Power Facility										
Capacity at Load Center (MW)—Long-Term	114	114	114	114	114	114	114	114	114	114
Energy Generation Total of All Facilities at Load Center (GWh)—Long-Term	397	398	398	398	398	398	398	398	398	398
Lewiston Power Facility										
Capacity at Load Center (MW)—Long-Term	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Energy Generation Total of All Facilities at Load Center (GWh)—Long-Term	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Carr Power Facility										
Capacity at Load Center (MW)—Long-Term	145	145	145	145	145	145	145	145	145	145
Energy Generation Total of All Facilities at Load Center (GWh)—Long-Term	255	254	255	254	254	254	255	254	254	254
Spring Creek Power Facility										
Capacity at Load Center (MW)—Long-Term	178	178	178	178	178	178	178	178	178	178
Energy Generation Total of All Facilities at Load Center (GWh)—Long-Term	282	281	282	281	281	281	282	281	281	281
Shasta Power Facility										
Capacity at Load Center (MW)—Long-Term	591	592	592	593	593	592	592	593	593	592
Energy Generation Total of All Facilities at Load Center (GWh)—Long-Term	2,063	2,063	2,063	2,064	2,064	2,063	2,063	2,064	2,064	2,063

	Existing Conditions	Alt 1	Alt 2a	Alt 2b	Alt 2c	Alt 3	Alt 4a	Alt 4b	Alt 4c	Alt 5
Keswick Power Facility										
Capacity at Load Center (MW)—Long-Term	47	47	47	47	47	47	47	47	47	47
Energy Generation Total of All Facilities at Load Center (GWh)—Long-Term	411	411	411	411	411	411	411	411	411	411
Folsom Power Facility										
Capacity at Load Center (MW)—Long-Term	173	173	173	173	173	173	173	173	173	173
Energy Generation Total of All Facilities at Load Center (GWh)—Long-Term	581	582	582	582	582	582	582	582	582	582
Nimbus Power Facility										
Capacity at Load Center (MW)—Long-Term	8	8	8	8	8	8	8	8	8	8
Energy Generation Total of All Facilities at Load Center (GWh)—Long-Term	67	67	67	67	67	67	67	67	67	67
New Melones Power Facility										
Capacity at Load Center (MW)—Long-Term	333	333	333	333	333	333	333	333	333	333
Energy Generation Total of All Facilities at Load Center (GWh)—Long-Term	468	468	468	468	468	468	468	468	468	468
Total of North of the Delta CVP Generation Facilities										
Capacity at Load Center (MW)—Long-Term	1,588	1,590	1,591	1,591	1,591	1,590	1,591	1,591	1,591	1,590
Energy Generation Total of All Facilities at Load Center (GWh)—Long-Term	4,524	4,523	4,526	4,525	4,525	4,523	4,526	4,525	4,525	4,523

	Existing Conditions	Alt 1	Alt 2a	Alt 2b	Alt 2c	Alt 3	Alt 4a	Alt 4b	Alt 4c	Alt 5
South of the Delta CVP Generation Facilities										
CVP San Luis Power Facility										
Capacity at Load Center (MW)—Long-Term	108	120	121	118	119	120	121	118	119	120
Energy Generation Total of All Facilities at Load Center (GWh)—Long-Term	117	131	138	129	131	131	138	129	131	131
O'Neill Power Facility										
Capacity at Load Center (MW)—Long-Term	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Energy Generation Total of All Facilities at Load Center (GWh)—Long-Term	3	3	4	3	3	3	4	3	3	3
Total of South of the Delta CVP Generation Facilities										
Capacity at Load Center (MW)—Long-Term	108	121	121	119	120	121	121	119	120	120
Energy Generation Total of All Facilities at Load Center (GWh)—Long-Term	121	135	141	132	134	135	141	132	134	135
Total of CVP Generation Facilities										
Capacity at Load Center (MW)—Long-Term	1,697	1,710	1,712	1,710	1,711	1,710	1,712	1,710	1,711	1,710
Energy Generation Total of All Facilities at Load Center (GWh)—Long-Term	4,645	4,658	4,667	4,657	4,660	4,658	4,667	4,657	4,660	4,658

	Existing Conditions	Alt 1	Alt 2a	Alt 2b	Alt 2c	Alt 3	Alt 4a	Alt 4b	Alt 4c	Alt 5
CVP PUMPING FACILITIES										
North of the Delta CVP Pumping Facilities										
Red Bluff Pumping Facility										
Energy Use Total of All Facilities at Load Center (GWh)—Long-Term	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
Corning Pumping Facility										
Energy Use Total of All Facilities at Load Center (GWh)—Long-Term	4	4	4	4	4	4	4	4	4	4
Tehama Other Facility										
Energy Use Total of All Facilities at Load Center (GWh)—Long-Term	11	11	11	11	11	11	11	11	11	11
Folsom Pumping Facility										
Energy Use Total of All Facilities at Load Center (GWh)—Long-Term	6	6	6	6	6	6	6	6	6	6
Contra Costa Pumping Facility										
Energy Use Total of All Facilities at Load Center (GWh)—Long-Term	24	24	24	24	24	24	24	24	24	24
Total of North of the Delta CVP Pumping Facilities										
Energy Use Total of All Facilities at Load Center (GWh)—Long-Term	47	47	47	47	47	47	47	47	47	47
South of the Delta CVP Pumping Facilities										
Jones Pumping Facility										
Energy Use Total of All Facilities at Load Center (GWh)—Long-Term	595	606	616	600	605	606	616	600	605	605
CVP Isolated Facility										
Energy Use Total of All Facilities at Load Center (GWh)—Long-Term	–	–	–	–	–	–	1	–	–	–
CVP Banks Pumping Facility										
Energy Use Total of All Facilities at Load Center (GWh)—Long-Term	20	22	23	23	22	22	23	23	22	23

	Existing Conditions	Alt 1	Alt 2a	Alt 2b	Alt 2c	Alt 3	Alt 4a	Alt 4b	Alt 4c	Alt 5
O'Neill Pumping Facility										
Energy Use Total of All Facilities at Load Center (GWh)—Long-Term	72	74	76	73	74	74	76	73	74	74
CVP San Luis Pumping Facility										
Energy Use Total of All Facilities at Load Center (GWh)—Long-Term	212	226	236	222	225	226	236	222	225	226
San Felipe Pumping Facility										
Energy Use Total of All Facilities at Load Center (GWh)—Long-Term	40	37	38	37	37	37	38	37	37	37
CVP Dos Amigos Pumping Facility										
Energy Use Total of All Facilities at Load Center (GWh)—Long-Term	146	152	157	149	151	152	157	149	151	152
Delta-Mendota Canal Intertie Pumping Facility										
Energy Use Total of All Facilities at Load Center (GWh)—Long-Term	2	2	2	2	2	2	2	2	2	2
San Luis Other Pumping Facility										
Energy Use Total of All Facilities at Load Center (GWh)—Long-Term	103	107	110	105	107	107	110	105	107	107
Delta-Mendota Canal Other Pumping Facility										
Energy Use Total of All Facilities at Load Center (GWh)—Long-Term	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Tehama-Colusa Relift Pumping Plant										
Energy Use Total of All Facilities at Load Center (GWh)—Long-Term	97	97	97	97	97	97	97	97	97	97
Total of South of the Delta CVP Pumping Facilities										
Energy Use Total of All Facilities at Load Center (GWh)—Long-Term	1,287	1,323	1,355	1,308	1,319	1,323	1,356	1,308	1,319	1,323
Total of CVP Pumping Facilities										
Energy Use Total of All Facilities at Load Center (GWh)—Long-Term	1,333	1,369	1,401	1,355	1,366	1,369	1,402	1,355	1,366	1,370

	Existing Conditions	Alt 1	Alt 2a	Alt 2b	Alt 2c	Alt 3	Alt 4a	Alt 4b	Alt 4c	Alt 5
Total of CVP Facilities										
CVP Generation Facilities										
Capacity at Load Center (MW)—Long-Term	1,697	1,710	1,712	1,710	1,711	1,710	1,712	1,710	1,711	1,710
Energy Generation Total of All Facilities at Load Center (GWh)—Long-Term	4,645	4,658	4,667	4,657	4,660	4,658	4,667	4,657	4,660	4,658
CVP Pumping Facilities										
Energy Use Total of All Facilities at Load Center (GWh)—Long-Term	1,333	1,369	1,401	1,355	1,366	1,369	1,402	1,355	1,366	1,370
All CVP Facilities										
Net Generation Total of All Facilities (GWh)—Long-Term	364	341	311	355	345	341	310	355	345	341

Notes: Results are estimated using LTGEN utilizing data from the CalSim 3I model; long-term is the average quantity for the calendar years 1922–2015; all values are at Load Center.

Alt = Alternative; CVP = Central Valley Project; GWh = gigawatt-hour; MW = megawatt; SWP = State Water Project.