

Table 6. Monthly Power

in millions of kilowatt-hours

Item	Month						
	JAN	FEB	MAR	APR	MAY	JUN	JUL
ENERGY USED BY SWP PUMPING AND POWER PLANTS							
Hyatt-Thermalito Pumpback and Station Service	46.68	19.77	38.67	34.28	2.79	5.52	0.06
North Bay Interim Pumping Plant	0.00	0.00	0.00	0.00	0.01	0.00	0.00
Cordelia Pumping Plant	0.79	0.65	0.62	0.72	1.08	1.34	1.67
Barker Slough Pumping Plant	0.32	0.25	0.24	0.29	0.49	0.57	0.79
South Bay Pumping Plant	7.67	9.95	15.24	15.43	16.16	15.82	15.96
Del Valle Pumping Plant	0.03	0.13	0.29	0.13	0.09	0.01	0.01
Banks Pumping Plant	104.17	61.74	109.02	111.60	55.28	36.28	52.35
Gianelli Pumping-Generating Plant (SWP Share)	64.67	24.29	61.99	40.08	0.15	0.01	0.08
Dos Amigos Pumping Plant (SWP Share)	16.75	17.13	21.16	31.66	32.52	49.87	52.73
Buena Vista Pumping Plant	19.16	10.64	23.34	41.18	34.93	34.35	36.46
Wheeler Ridge Pumping Plant	21.05	9.07	22.71	44.20	36.22	31.82	33.21
Chrisman Pumping Plant	47.95	19.42	49.62	98.91	80.04	68.95	71.71
Edmonston Pumping Plant	168.41	66.96	172.74	346.49	276.70	237.12	246.94
Alamo Powerplant (Station Service)	0.02	0.03	0.01	0.00	0.00	0.01	0.00
Pearblossom Pumping Plant	15.40	14.81	33.61	44.64	51.25	46.00	46.33
Devil Canyon Powerplant (Station Service)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Oso Pumping Plant	13.87	2.27	6.91	22.63	11.22	7.74	8.57
Warne Powerplant (Station Service)	0.04	0.11	0.07	0.00	0.00	0.03	0.06
Las Perillas Pumping Plant	0.17	0.33	0.58	0.76	1.16	1.64	1.87
Badger Hill Pumping Plant	0.41	0.85	1.52	2.06	3.07	4.41	5.01
Subtotal	527.56	258.40	558.34	835.06	603.16	541.49	573.81
Scheduled High Voltage Transmission Line Losses	14.18	8.56	3.88	18.19	32.15	22.37	5.60
Total	541.74	266.96	562.22	853.25	635.31	563.86	579.41
SWP ENERGY SOURCES							
Hyatt-Thermalito Powerplant	64.46	96.39	71.34	62.78	185.71	209.65	358.24
Gianelli Pumping-Generating Plant (SWP Share)	0.00	6.58	0.00	0.09	41.12	62.50	38.27
Alamo Powerplant	1.68	1.21	2.12	2.76	2.94	2.27	2.92
Devil Canyon Powerplant	25.87	32.34	60.07	61.38	84.34	78.97	82.15
Warne Powerplant	28.90	3.49	15.15	46.43	25.16	16.38	17.31
Castaic Powerplant	43.36	4.97	23.03	75.21	36.56	24.24	23.60
Bottle Rock Powerplant	12.38	10.97	11.54	10.77	11.24	9.93	9.06
Reid Gardner Unit No. 4	134.29	5.05	162.98	140.86	129.91	140.59	168.46
Pine Flat Powerplant	-0.15	0.78	8.23	9.46	21.63	57.66	11.56
TERA Power Corporation	0.03	0.06	0.14	0.21	0.54	0.52	0.45
MWDSC Hydroelectric Plants	6.58	9.55	13.28	20.62	22.01	19.03	17.45
Power Exchange Delivered to SCE	-105.84	-106.66	-133.60	-142.88	-219.73	-222.48	-269.37
Power Exchange Received from SCE	400.13	256.93	312.12	329.48	213.09	210.45	270.18
Power Exchange Bonneville Power Administration	0.00	0.00	4.38	0.00	0.00	-2.70	-1.68
Power Exchange Salt River Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Emergency Service SCE	0.00	0.00	0.00	0.00	0.00	0.00	-1.50
Energy Exchange PG&E	0.00	0.00	17.94	0.69	0.00	-14.05	-4.58
SCE-SBVMWD Exchange	-0.20	-0.17	-0.20	-0.14	-0.15	-0.22	-0.20
USBR Scheduled Excess	0.00	0.08	0.01	0.23	0.00	0.00	0.00
Power System Deviations Account Transactions	-4.49	-1.01	1.01	0.37	2.38	-1.31	-2.33
Purchases							
Arizona Public Service Company	0.00	3.82	5.23	0.00	0.00	0.00	0.00
Bonneville Power Administration	0.00	0.00	0.00	23.59	63.36	20.62	0.00
British Columbia Hydro Power Authority	0.00	0.00	0.00	0.00	0.00	0.95	0.00
Eugene Water and Electric Board	0.00	0.00	0.00	0.26	0.54	0.00	0.00
Idaho Power Company	0.00	0.00	9.88	96.44	7.20	0.00	0.00
Los Angeles Dept. of Water and Power	0.00	0.00	0.00	0.00	0.00	0.30	0.00
Montana Power Company	12.53	0.85	20.72	0.65	0.00	1.20	0.00
Northern California Power Agency	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pacific Gas and Electric	0.00	0.00	10.36	109.79	3.90	0.00	0.00
Pacific Power and Light	0.20	0.00	0.00	3.84	0.00	0.50	0.00
Portland General Electric	0.00	0.00	1.38	9.56	48.90	33.96	0.00
Puget Sound Power and Light Company	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Salt River Project	2.58	22.71	0.00	22.53	21.38	11.40	0.00
Southern California Edison	0.00	0.08	0.01	0.00	0.00	1.25	0.00
Washington Water Power Company	3.89	0.63	1.30	11.85	17.15	2.66	1.71
Subtotal	626.20	348.65	618.42	896.83	719.18	664.27	721.70
Less Sales	84.46	81.69	56.20	43.58	83.87	100.41	142.29
Total	541.74	266.96	562.22	853.25	635.31	563.86	579.41

Operation in 1989

in millions of kilowatt-hours

Month						Item
AUG	SEPT	OCT	NOV	DEC	TOTAL	
ENERGY USED BY SWP PUMPING AND POWER PLANTS						
13.52	29.78	23.95	5.94	0.29	221.25	Hyatt-Thermalito Pumpback and Station Service
0.00	0.00	0.00	0.01	0.00	0.02	North Bay Interim Pumping Plant
1.59	1.13	0.47	0.45	0.47	10.98	Cordelia Pumping Plant
0.73	0.53	0.25	0.26	0.24	4.96	Barker Slough Pumping Plant
16.08	9.56	9.58	7.88	10.48	149.81	South Bay Pumping Plant
0.01	0.01	0.01	0.01	0.01	0.74	Del Valle Pumping Plant
89.13	108.42	100.86	75.74	112.73	1017.32	Banks Pumping Plant
3.82	16.39	29.27	21.70	57.00	319.45	Gianelli Pumping-Generating Plant (SWP Share)
41.57	32.84	29.15	28.12	22.50	376.00	Dos Amigos Pumping Plant (SWP Share)
31.30	39.22	39.95	38.72	25.96	375.21	Buena Vista Pumping Plant
29.07	43.47	44.77	43.73	29.03	388.35	Wheeler Ridge Pumping Plant
64.11	98.09	101.25	100.15	65.66	865.86	Chrisman Pumping Plant
220.98	347.16	357.37	354.98	230.22	3026.07	Edmonston Pumping Plant
0.00	0.00	0.00	0.00	0.06	0.13	Alamo Powerplant (Station Service)
47.14	49.99	52.01	50.43	0.52	452.13	Pearblossom Pumping Plant
0.00	0.00	0.00	0.00	0.14	0.14	Devil Canyon Powerplant (Station Service)
5.21	20.02	20.63	22.48	27.55	169.10	Oso Pumping Plant
0.09	0.00	0.01	0.00	0.00	0.41	Warne Powerplant (Station Service)
1.34	0.68	0.55	0.13	0.31	9.52	Las Perillas Pumping Plant
3.62	1.78	1.46	0.30	0.77	25.26	Badger Hill Pumping Plant
569.31	799.07	811.54	751.03	583.94	7412.71	Subtotal
7.57	3.77	4.57	26.66	15.96	163.46	Scheduled High Voltage Transmission Line Losses
576.88	802.84	816.11	777.69	599.90	7576.17	Total
SWP ENERGY SOURCES						
284.11	146.06	108.41	109.78	217.25	1914.18	Hyatt-Thermalito Powerplant
7.60	0.00	0.00	0.00	0.03	156.19	Gianelli Pumping-Generating Plant (SWP Share)
2.98	2.91	2.92	2.73	0.00	27.44	Alamo Powerplant
84.68	79.28	85.43	83.10	6.33	763.94	Devil Canyon Powerplant
12.10	41.88	42.00	47.23	55.62	351.65	Warne Powerplant
17.92	68.15	70.68	74.68	92.77	555.17	Castaic Powerplant
8.46	7.83	7.93	3.18	7.91	111.20	Bottle Rock Powerplant
162.78	154.79	161.84	166.99	158.07	1686.61	Reid Gardner Unit No. 4
-0.19	-0.20	-0.21	-0.22	-0.27	108.08	Pine Flat Powerplant
0.41	0.27	0.14	-0.01	-0.03	2.73	TERA Power Corporation
16.67	16.83	14.19	15.84	12.43	184.48	MWDSC Hydroelectric Plants
-252.69	-176.47	-175.05	-175.25	-134.55	-2114.57	Power Exchange Delivered to SCE
275.06	416.76	423.66	429.46	400.81	3938.13	Power Exchange Received from SCE
0.00	0.00	0.00	0.00	0.00	0.00	Power Exchange Bonneville Power Administration
0.00	0.00	0.00	0.00	0.00	0.00	Power Exchange Salt River Project
1.50	0.00	0.00	0.00	0.00	0.00	Emergency Service SCE
0.00	0.00	0.00	0.00	0.00	0.00	Energy Exchange PG&E
-0.23	-0.21	-0.21	0.00	0.00	-1.93	SCE-SBVMWD Exchange
0.04	0.02	0.00	0.00	0.00	0.38	USBR Scheduled Excess
-2.92	-1.98	-0.50	3.17	3.98	-3.63	Power System Deviations Account Transactions
						Purchases
0.00	0.00	0.51	0.00	0.00	9.56	Arizona Public Service Company
0.00	0.00	0.00	0.00	0.00	107.57	Bonneville Power Administration
0.00	4.70	0.00	1.85	0.30	7.80	British Columbia Hydro Power Authority
0.00	0.00	0.00	0.00	0.00	0.80	Eugene Water and Electric Board
1.30	55.92	38.13	1.45	0.00	210.32	Idaho Power Company
0.00	0.00	0.00	0.00	0.00	0.30	Los Angeles Dept. of Water and Power
10.68	1.30	32.07	0.00	0.08	80.08	Montana Power Company
0.00	0.00	6.00	0.24	0.00	0.24	Northern California Power Agency
12.09	7.42	3.16	0.00	0.00	146.72	Pacific Gas and Electric
5.05	8.78	33.23	0.00	0.00	51.60	Pacific Power and Light
0.00	8.78	0.00	0.00	0.00	102.58	Portland General Electric
0.00	1.80	5.68	44.92	0.30	52.70	Puget Sound Power and Light Company
6.30	6.09	18.06	7.60	0.00	118.65	Salt River Project
7.80	0.00	0.05	0.05	0.00	9.24	Southern California Edison
8.16	29.58	7.28	12.06	0.86	97.13	Washington Water Power Company
669.66	880.29	879.40	828.85	821.89	8675.34	Subtotal
92.78	77.45	63.29	51.16	221.99	1099.17	Less Sales
576.88	802.84	816.11	777.69	599.90	7576.17	Total

Table 6A. Reconciliation of Energy Use in 1989 for SWP

in millions of kilowatt-hours

Item	Month						
	JAN	FEB	MAR	APR	MAY	JUN	JUL
Banks Pumping Plant							
Energy Metered at Pumping Plant	108.27	66.23	110.49	111.59	55.28	36.28	83.17
Less Energy Scheduled by USBR for CVP Pumping	-4.10	-4.49	-1.47	0.00	0.00	0.00	-30.82
Plus Excess Daily Energy Scheduled by USBR	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Energy Used for SWP Pumping	104.17	61.74	109.02	111.60	55.28	36.28	52.35
Dos Amigos Pumping Plant							
Energy Metered at Pumping Plant	31.68	40.65	28.76	48.16	50.57	83.50	88.68
Less Energy Scheduled by USBR for CVP Pumping	-14.90	-23.52	-7.59	-16.51	-18.05	-33.63	-35.95
Less Energy Scheduled by USBR for Station Service	-0.03	0.00	0.00	0.00	0.00	0.00	0.00
Plus Excess Daily Energy Scheduled by USBR	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Energy Used for SWP Pumping	16.75	17.13	21.16	31.66	32.52	49.87	52.73
Gianelli Pumping-Generating Plant (Pumping)							
Energy Metered at Pumping Plant	100.87	35.71	96.21	42.60	0.33	0.07	0.12
Less Energy Scheduled by USBR for CVP Pumping	-36.11	-11.22	-34.11	-2.39	0.00	0.00	0.00
Less Energy Scheduled by USBR for Station Service	-0.09	-0.21	-0.11	-0.13	-0.18	-0.06	-0.05
Plus Excess Daily Energy Scheduled by USBR	0.00	0.02	0.00	0.00	0.00	0.00	0.00
Energy Used for SWP Pumping	64.67	24.29	61.99	40.08	0.15	0.01	0.08
Las Perillas Pumping Plant							
Energy Metered at Pumping Plant	0.17	0.33	0.58	0.76	1.16	1.64	1.87
Less Energy Scheduled by USBR for CVP Pumping	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Energy Used for SWP Pumping	0.17	0.33	0.58	0.76	1.16	1.64	1.87
Gianelli Pumping-Generating Plant (Generation)							
Energy Metered at Plant	0.00	16.66	0.55	15.78	53.16	115.02	55.92
Less Energy Scheduled by USBR for CVP Pumping	0.00	-10.14	-0.56	-15.92	-12.04	-52.52	-17.65
Plus Excess Daily Energy Scheduled by USBR	0.00	0.06	0.01	0.23	0.00	0.00	0.00
SWP Share of Energy Generated	0.00	6.58	0.00	0.09	41.12	62.50	38.27

amount of energy used for pumping at each plant, the energy furnished by USBR, and the derivation of the net SWP energy use presented in Table 6. (The quantities shown as "excess daily energy scheduled by USBR" represent the accumulations of small differences between hourly amounts of energy scheduled for pumping SWP water and those actually used.) Similarly, Table 6A shows the derivation of the SWP share of energy generated at the Gianelli Pumping-Generating Plant.

Energy Sources

Table 6 also shows the monthly sources of SWP energy during 1989. Energy generation at the Hyatt-Thermalito power complex in 1989 was 1.91 billion kilowatt-hours (kWh), about 23 percent more than 1988's output. As a result of lower-than-normal rainfall in the Feather River watershed during calendar year 1989, the output of the Hyatt-Thermalito complex is substantially less than the estimated average annual output of 2.2 billion kWh.

and CVP Pumping at SWP Plants and Joint-Use Facilities

in millions of kilowatt-hours

Month						Item
AUG	SEP	OCT	NOV	DEC	TOTAL	
Banks Pumping Plant						
115.81	108.42	111.25	107.28	114.07	1128.15	Energy Metered at Pumping Plant
-26.68	0.00	-10.39	-31.54	-1.34	-110.83	Less Energy Scheduled by USBR for CVP Pumping
0.00	0.00	0.00	0.00	0.00	0.00	Plus Excess Daily Energy Scheduled by USBR
89.13	108.42	100.86	75.74	112.73	1017.32	Energy Used for SWP Pumping
Dos Amigos Pumping Plant						
64.87	37.19	33.38	34.47	26.65	568.55	Energy Metered at Pumping Plant
-23.31	-4.35	-4.23	-6.34	-4.15	-192.53	Less Energy Scheduled by USBR for CVP Pumping
0.00	0.00	0.00	0.00	0.00	-0.03	Less Energy Scheduled by USBR for Station Service
0.00	0.00	0.00	0.00	0.00	0.00	Plus Excess Daily Energy Scheduled by USBR
41.57	32.84	29.15	28.12	22.50	376.00	Energy Used for SWP Pumping
Gianelli Pumping-Generating Plant (Pumping)						
5.51	34.98	54.73	72.95	111.65	555.73	Energy Metered at Pumping Plant
-1.50	-18.40	-25.36	-51.04	-54.44	-234.56	Less Energy Scheduled by USBR for CVP Pumping
-0.20	-0.21	-0.11	-0.21	-0.21	-1.76	Less Energy Scheduled by USBR for Station Service
0.00	0.02	0.00	0.00	0.00	0.05	Plus Excess Daily Energy Scheduled by USBR
3.82	16.39	29.27	21.70	57.00	319.45	Energy Used for SWP Pumping
Las Perillas Pumping Plant						
1.34	0.68	0.55	0.13	0.31	9.52	Energy Metered at Pumping Plant
0.00	0.00	0.00	0.00	0.00	0.00	Less Energy Scheduled by USBR for CVP Pumping
1.34	0.68	0.55	0.13	0.31	9.52	Energy Used for SWP Pumping
Gianelli Pumping-Generating Plant (Generation)						
8.88	0.00	0.00	0.00	0.03	266.00	Energy Metered at Plant
-1.32	0.00	0.00	0.00	0.00	-110.14	Less Energy Scheduled by USBR for CVP Pumping
0.04	0.00	0.00	0.00	0.00	0.33	Plus Excess Daily Energy Scheduled by USBR
7.60	0.00	0.00	0.00	0.03	156.19	SWP Share of Energy Generated

Energy generation at the SWP aqueduct recovery plants (Gianelli, Alamo, Devil Canyon, Warne, and Castaic) totaled about 1.85 billion kWh, about 19 percent higher than last year's amount. The combined output of the recovery plants and the Hyatt-Thermalito facilities was sufficient to meet about 50 percent of SWP energy requirements in 1989.

Other SWP hydroelectric power resources are obtained under contract with the Kings River Conservation District and The Metropolitan Water District of Southern California. The KRCD contract provides DWR with the total output of the

165-megawatt (MW) Pine Flat Powerplant. The plant furnished 0.11 billion kWh to the SWP in 1989. Under the MWDSC contract, DWR receives energy from five small hydroelectric plants on the MWDSC system (30 MW total capacity). As explained in Chapter VI, DWR has exchange agreements with Southern California Edison Company and the Los Angeles Department of Water and Power for transmission of energy from the MWDSC plants to the SWP.

Under the 1979 power contract between DWR and Southern California Edison (in effect since April 1983) and the 1981 Capacity Exchange

Table 7. SWP Power and Transmission Service Purchases in 1989

Supplier	Type of Service Purchased	Energy kWh	Energy Cost dollars	Transmission Cost dollars	Total Cost dollars
SWP Transmission and Energy Purchases					
British Columbia Hydro Power Authority	Nonfirm energy	5,650,000	184,034		184,034
British Columbia Power Export Corporation	Nonfirm energy	2,150,000	74,562		74,562
Montana Power Company	Nonfirm energy	80,065,000	2,066,751		2,066,751
Washington Water Power Company	Nonfirm energy	97,108,000	2,492,560		2,492,560
Pacific Power and Light Company	Nonfirm energy	51,590,000	1,478,573		1,478,573
Portland General Electric Company	Nonfirm energy	102,570,000	1,600,548		1,600,548
Bonneville Power Administration	Firm energy	28,715,000	445,855		445,855
	Nonfirm energy	78,847,000	1,394,300		1,394,300
Idaho Power Company	Nonfirm energy	210,306,000	5,119,694		5,119,694
Eugene Water and Electric Board	Nonfirm energy	800,000	13,540		13,540
Puget Sound Power and Light Company	Nonfirm energy	52,695,000	1,600,855		1,600,855
Pacific Gas and Electric Company, Southern California Edison Company, and San Diego Gas and Electric Company	EHV transmission			1,500,000	1,500,000
Northern California Power Agency	Nonfirm energy	235,000	6,580		6,580
TERA Power Corporation	Wind energy	2,708,894	237,028		237,028
Kings River Conservation District	Hydroelectric energy	111,200,412	855,059		855,059
Pacific Gas & Electric Company	Nonfirm energy and transmission	144,266,000	3,437,243	5,674,363	9,111,606
	Firm energy	2,442,000	78,414		78,414
Southern California Edison Company	Nonfirm energy and transmission	9,234,000	244,264	1,608,103	244,264
Los Angeles Department of Water and Power	Nonfirm energy and transmission	300,000	3,927	85,297	89,224
MWD of Southern California	Hydroelectric energy	176,131,200	7,045,248		7,045,248
Nevada Power Company	Transmission			998,100	998,100
Salt River Agricultural Improvement and Power District	Nonfirm energy	118,640,000	2,505,293		2,505,293
Arizona Public Service Company	Nonfirm energy	9,555,000	280,612		280,612
Subtotal		1,285,208,506	31,164,940	9,865,863	41,030,803
Other SWP Power Service Purchases					
Bonneville Power Administration	Late payment penalty in April 1989				1,587
Western States Power Pool	Consulting fees to Arizona Public Service Company				1,875
MCR Geothermal Corporation	Bottle Rock geothermal steam				
Coleman Partnership & Fluid Energy Corporation	Bottle Rock steam field royalty payments				192,157
Calpine Corporation	Bottle Rock steam field operation and maintenance				747,252
Kings River Conservation District	Pine Flat operation & maintenance				2,441,719
	Pine Flat debt service				5,375,333
Pacific Gas & Electric Company	Charges for capacity purchase in August 1989				240,000
	Bottle Rock transmission and operation and maintenance charges				17,133
Southern California Edison Company	Federal Energy Regulatory Commission fees				603
Los Angeles Department of Water and Power	Hydro Powerplant scheduling				1,150
Arizona Public Service Company	Peaking energy turbine start-up in March 1989				227
Subtotal					9,019,036
Total					50,049,839

Table 8. SWP Power Sales in 1989

Purchaser	Amount of Energy Sold kilowatt-hours	Revenue from Energy Sales dollars	Revenue from Capacity Sales dollars	Total SWP Power Sales dollars
Bonneville Power Administration	18,725,000	465,787		465,787
Northern California Power Agency	48,515,000	1,273,398	450,000	1,723,398
Turlock Irrigation District	186,196,000	4,782,443	2,326,750	7,109,193
Modesto Irrigation District	50,306,000	1,190,401		1,190,401
Pacific Gas and Electric Company	124,738,000	3,161,862		3,161,862
Southern California Edison Company (a) (b)	1,100,000	37,000	20,940	57,940
Los Angeles Department of Water and Power			777,800	777,800
The Metropolitan Water District of Southern California	14,190,000	283,800		283,800
City of Anaheim	31,254,000	828,354	1,139,400	1,967,754
City of Riverside	33,377,000	892,756	759,600	1,652,356
City of Vernon (c)	376,042,000	9,899,652	4,805,697	14,705,349
City of Azusa	22,582,000	598,423	424,800	1,023,223
City of Banning	5,841,000	154,787	189,900	344,687
City of Colton	26,193,000	694,115	480,840	1,174,955
Nevada Power Company	156,864,000	4,736,203	1,482,514	6,218,717
Salt River Agricultural Improvement and Power District	3,250,000	110,500		110,500
Total	1,089,173,000	29,109,481	12,858,241	41,967,722

a) Emergency service provided to SCE of \$20,940 in July 1989 is shown under "Revenue from Capacity Sales."

b) In addition to this amount, 1,925,000 kWh of energy delivered to SCE under the DWR-SCE Generation Replacement Agreement has been valued at \$18,891. Pursuant to the 1982 DWR-San Bernardino Valley Municipal Water District Energy Purchase Agreement, DWR delivered this energy to SCE to replace generation lost because of water SBVMWD diverted from Santa Ana and Mill Creek.

c) Revenue from capacity sold to Vernon includes \$5,697 for transmission and dispatching services.

On July 1, 1988, DWR contracted with Calpine Corporation to operate and maintain Bottle Rock Powerplant's geothermal steam field. Under a contract dated July 1, 1988, DWR paid \$747,252 to Calpine Corporation for operation and maintenance of the Bottle Rock Powerplant steam field during the 1989 calendar year, and paid \$192,157 to Coleman Partnership and Fluid Energy Corporation as royalty payments for the Francisco steam field. Other SWP purchases, including the Bottle Rock Powerplant steam field costs mentioned above, totaled \$9.02 million.

Power Sales

Existing SWP resources, short-term power purchase and sales contracts, and long-term power and transmission contracts ensure that the SWP has enough energy and capacity to meet future needs. DWR has also entered into contracts to sell any excess capacity and energy, within the limits of the SWP's contractual transmission capabilities, at Malin, Tesla, Vincent, Sylmar, and Eldorado substations.

DWR sells this excess capacity and energy on a daily basis at current market rates. In determining the most advantageous time to sell the power, DWR considers projected SWP operations and changes in the power market as well as energy losses, transmission costs, and dispatching costs. DWR's computerized accounting system monitors power purchases and sales.

Table 8 summarizes DWR's power-related sales in 1989. Total energy sold to 16 utilities was 1.10 billion kWh, for a revenue of \$29.11 million. DWR also received a total of \$12.86 million in revenues for peaking-capacity payments from Nevada Power Company, peaking-capacity-foregone payments from Los Angeles Department of Water and Power, interruptible transmission payments from Southern California Edison and the City of Vernon, and capacity payments from Northern California Power Agency, Turlock Irrigation District and the cities of Azusa, Anaheim, Riverside, Banning, Colton, and Vernon.