DOCKETED

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RENEWABLE PORTFOLIO STANDARD DEVELOPMENT

Hydro Definition Considerations

July 13, 2004

Overview

- LADWP Hydroelectric Power Plant Assets
- LADWP Hydro Plant Characteristics
- Hydro Eligibility Definition Analysis
- LADWP Hydro Renewable Eligibility Definition Options
- LADWP Recommendations

LADWP Hydro Generation Assets

NAME OF PLANT	UNIT NO.	DATE FIRST CARRIED SYSTEM LOAD	GENERATION NAMEPLATE (kVA)	GENERATION NAMEPLATE (kW)	NET UNIT CAPABILITY (kW)	MAXIMUM PLANT CAPABILITY (kW)	NET DEPENDABLE PLANT CAPABILITY (kW)	NET ANNUAL PLANT PRODUCTION (FY 02-03 MWh)
	1A	12/10/83	25,000	25,000	26,000			47,559
San Francisquito	3	4/16/17	11,719	9,375	11,000			1,391
Power Plant 1	4	5/21/23	12,500	10,000	12,500			171
	5A	4/9/87	25,000	25,000	26,000			70,302
San Francisquito	1	7/6/20	17,500	14,000	14,500		[A]	0
Power Plant 2	2	8/7/20	17,500	14,000	14,500	85,700	48,000	801
	3	9/26/32	17,500	14,000	18,000			64,102
San Fernando	1	10/22/22	3,500	2,800	3,200			11,521
Power Plant	2	10/22/22	3,500	2,800	3,200			16,612
Foothill Power Plant	1	10/6/71	11,000	10,000	10,000			16,219
Franklin Power Plant	1	6/3/21	2,500	2,000	2,000			1,564
Sawtelle Power Plant	1	6/5/86	711	640	600			0
Haiwee Power Plant	1	7/18/27	3,500	2,800	3,200			5,793
	2	7/18/27	3,500	2,800	3,200			2,916
Cottonwood	1	11/13/08	937	750	1,400		[B]	0
Power Plant	2	10/13/09	937	750	1,400	12,600	6,000	21
Division Creek P. P.	1	3/22/09	750	600	650			2,353
Big Pine Power Plant	1	7/29/25	4,000	3,200	3.05			7,227
Pleasant Valley P. P.	1	2/5/58	4,000	3,200	2,700			3,008
Upper Gorge P. P.	1	6/15/53	37,500	37,500	36,000		[C]	53,949
Middle Gorge P. P.	1	5/11/52	37,500	37,500	38,000	112,000	112,000	58,344
Control Gorge P. P.	1	4/1/52	37,500	37,500	38,000			57,335
Hoover Power Plant (Capacity and energy purchase from WAPA through Sep. 2017)						491,000	491,000	641,790
TOTAL HYDRO (Based on average hydro conditions)						**701,300**	**657,000**	**1,062,978**

LADWP Hydro Generation Assets Summary

Plant Name	Number of Units	Max Unit Size MW	Max Plant Size MW	Total MW	Energy 02-03 MWh	% of RPS
30 MW or Less Aqueduct Plants (multiple locations)	15	18	18	79	132,137	0.6%
Power Plant 1 (one location)	4	26	52	76	119,423	0.5%
Gorge Plants (three Different Locations)	3	38	38	112	169,628	0.7%
Hoover[1] (one location)	17	32.5	491	491	641,790	2.8%
Total				758	1,062,978	4.6%

Notes:

(1) LADWP's have long-term (until 9/30/17) of 25% capacity and 15% energy.
Unit size 130, and plant size is 2064 MW

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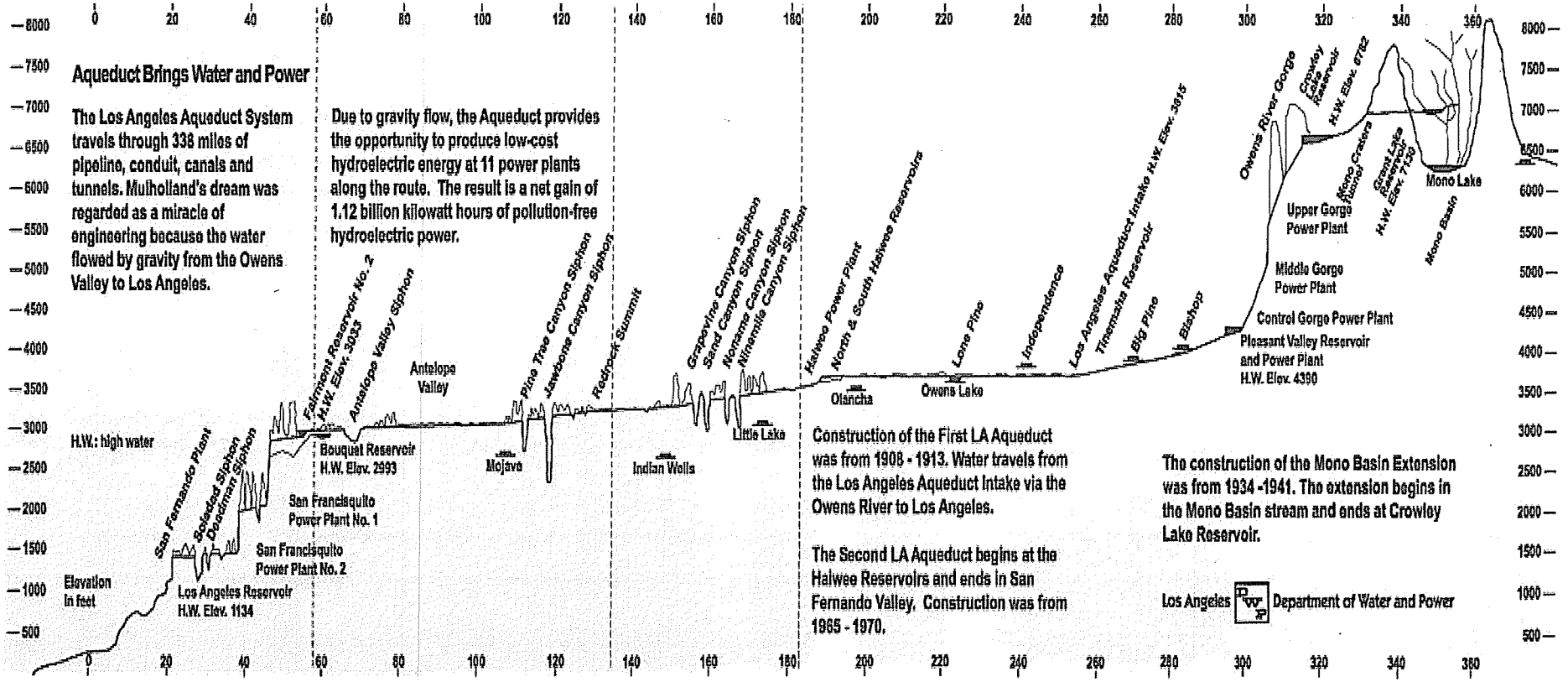
Aqueduct System Profile Diagram



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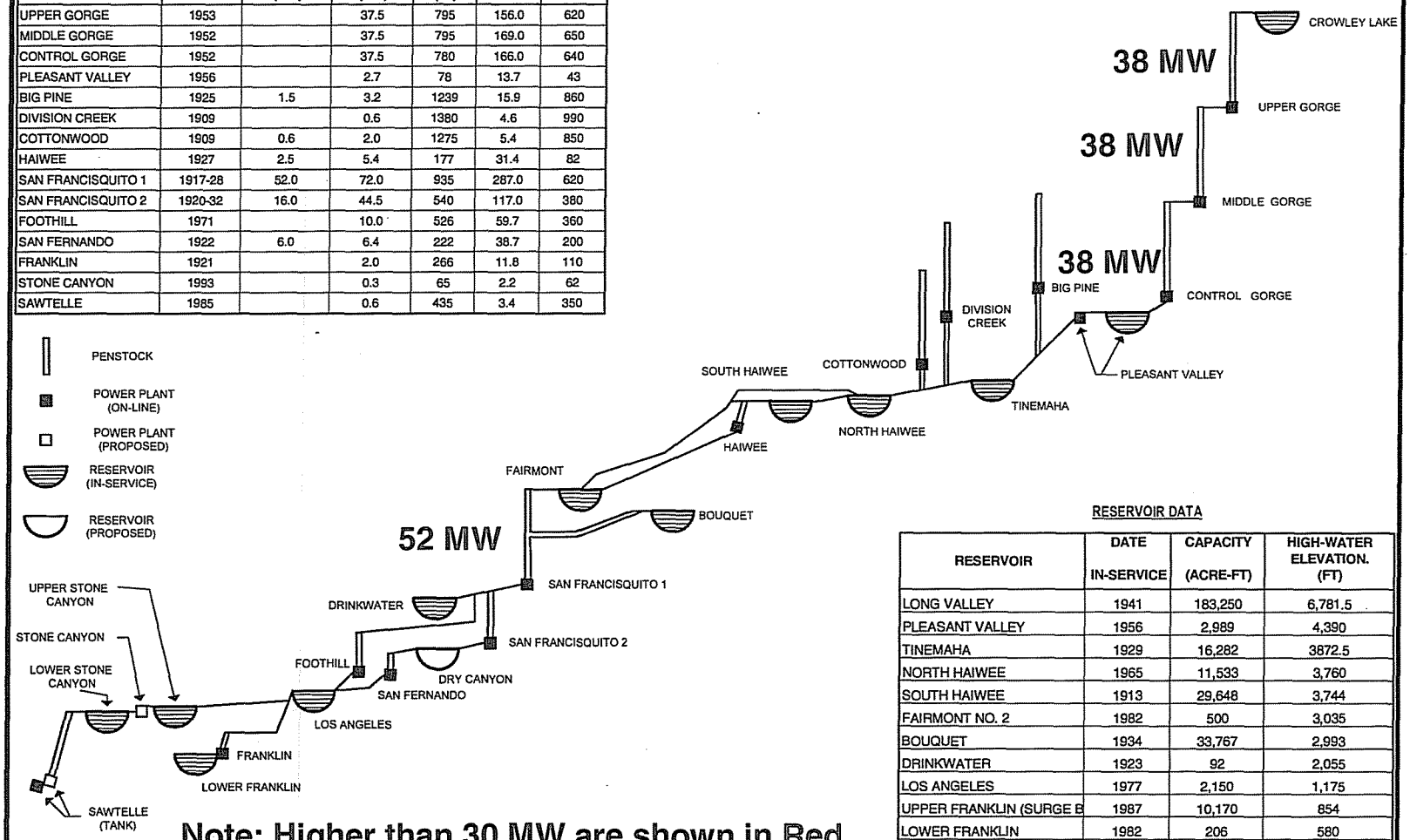
Aqueduct System Reservoirs and Power Plants

POWER PLANT DATA

POWER PLANT	IN-SERVICE DATE	PLANT CAPABILITY (MW)	PLANT CAPACITY (MW)	STATIC HEAD (FT)	AVERAGE GENERATION	
					GWH/YR	KWH/A.F.
UPPER GORGE	1953		37.5	795	156.0	620
MIDDLE GORGE	1952		37.5	795	169.0	650
CONTROL GORGE	1952		37.5	780	166.0	640
PLEASANT VALLEY	1956		2.7	78	13.7	43
BIG PINE	1925	1.5	3.2	1239	15.9	860
DIVISION CREEK	1909		0.6	1380	4.6	990
COTTONWOOD	1909	0.6	2.0	1275	5.4	850
HAIWEE	1927	2.5	5.4	177	31.4	82
SAN FRANCISQUITO 1	1917-28	52.0	72.0	935	287.0	620
SAN FRANCISQUITO 2	1920-32	16.0	44.5	540	117.0	380
FOOTHILL	1971		10.0	526	59.7	360
SAN FERNANDO	1922	6.0	6.4	222	38.7	200
FRANKLIN	1921		2.0	266	11.8	110
STONE CANYON	1993		0.3	65	2.2	62
SAWTELLE	1985		0.6	435	3.4	350



Note: Higher than 30 MW are shown in Red all others are less than 18 MW

RESERVOIR DATA

RESERVOIR	DATE IN-SERVICE	CAPACITY (ACRE-FT)	HIGH-WATER ELEVATION. (FT)
LONG VALLEY	1941	183,250	6,781.5
PLEASANT VALLEY	1956	2,989	4,390
TINEMAHA	1929	16,282	3872.5
NORTH HAIWEE	1965	11,533	3,760
SOUTH HAIWEE	1913	29,648	3,744
FAIRMONT NO. 2	1982	500	3,035
BOUQUET	1934	33,767	2,993
DRINKWATER	1923	92	2,055
LOS ANGELES	1977	2,150	1,175
UPPER FRANKLIN (SURGE B	1987	10,170	854
LOWER FRANKLIN	1982	206	580
UPPER STONE CANYON	1954	422	930
LOWER STONE CANYON	1921	10,372	865
SAWTELLE (TANK)	1986	3.1	430

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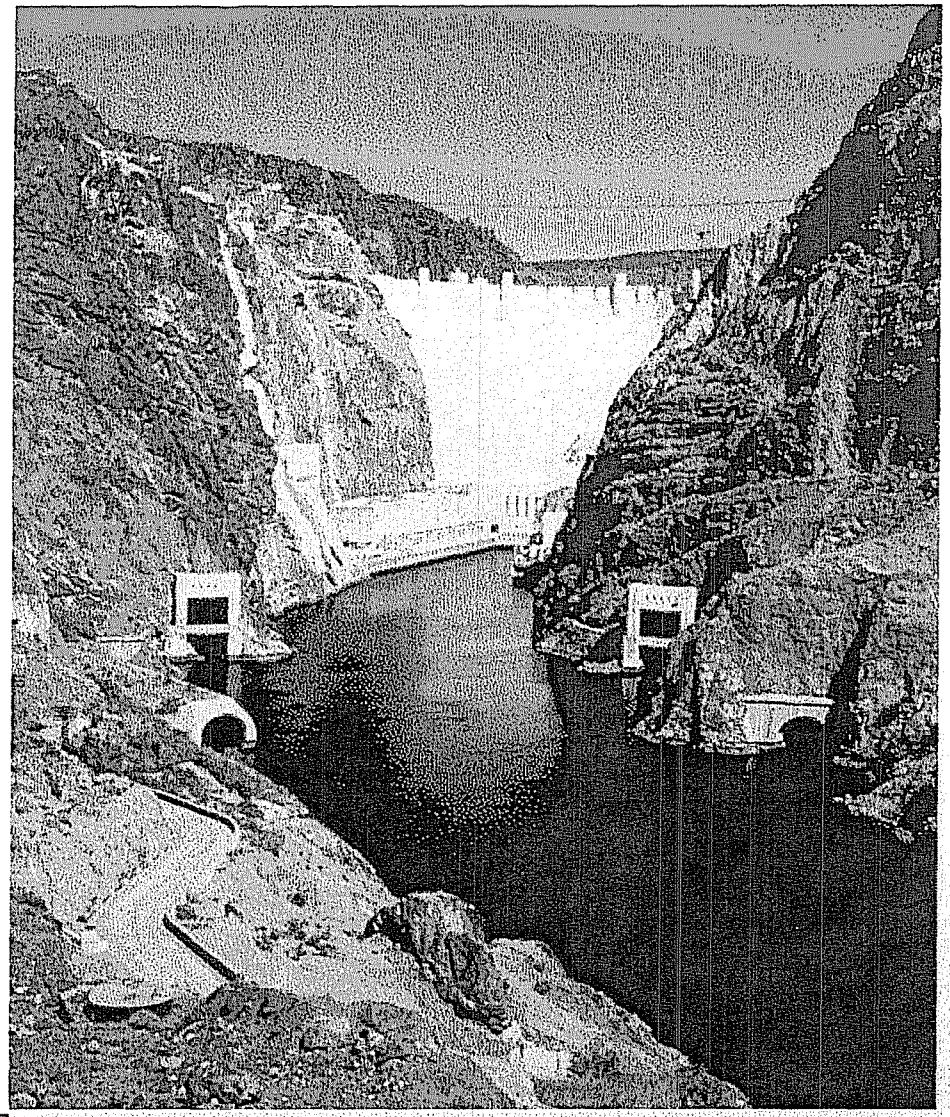
Hoover Power Plant



- Located in Arizona-Nevada boarder
- Constructed in 1935
- Hoover Dam's authorized purposes are: "flood control; improvement of navigation and regulation of the Colorado River; storage and delivery of Colorado River waters for reclamation of public lands and other beneficial uses exclusively within the United States; and hydroelectric power production."

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Eligible Renewable Resource Definition Analysis (1)

- SB 1078/SB 1038 hydro definition is 30 MW or less
- Almost all of the California municipalities that have RPS policy define all of their hydros (including Hoover power) as eligible renewable.
- There is no consistent hydro eligibility definition for hydro among the states that have eligibility definitions:
  - 10 out of 21 states have no size limit
  - 4 states have limit (<30, <60, <100, and low head)
  - 4 states do not recognize hydro as renewables
  - 3 states use criteria other than size
- California IOUs combined Small Hydro contribution to RPS is 1.9%

States Definitions of Renewable Energy

	Wind	Solar	Geothermal	Biomass	MSW	Ocean-based	Hydro	Fuel Cells[1]
California[2]	X	X	X	X[3]	X[4]	X[5]	X[6]	X[7]
Connecticut (Class I)	X	X		X[8]				X
Connecticut (Class II)[9]				X[10]	X		X	
Connecticut (SBC)	X	X		X[11]		X		X
Delaware[12]	X	X	X	X[13]			X	
Illinois	X	X		X[14]			X[15]	
Maine[16]	X	X	X	X	X	X	X	X
Maryland	X	X	X	X	X	X	X	
Massachusetts	X	X		X[17]	X[18]	X	X	X[19]
Montana[20]	X	X	X	X			X	
Nevada	X	X	X	X[21]				
New Jersey (Class I)	X	X	X	X[8]		X		X
New Jersey (Class II)[23]					X		X[24]	
New Mexico	X	X	X	X[25]			X	X[19]
New York[26]	X	X	X	X			X	X
Ohio[27]	X	X		X			X	X
Oregon	X	X		X[28]	X		X[29]	
Pennsylvania	X	X	X	X[30]	X		X[31]	
Rhode Island	X	X		X[32]			X[33]	X[34]
Texas	X	X	X	X		X	X	
Wisconsin	X	X	X	X		X	X[35]	X[19]

Notes on Hydro:

(6) <30 MW

(15) No new dam

(24) Minimum impact

(29) Outside protected area

(31) Low head

(33) <100 MW, no new dam

(35) <60 MW

Source:

U.S Department of Energy
www.eere.energy.gov/
March 13, 2003

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LA001582

Power Content Label

ENERGY RESOURCES	LADWP Power* (actual)	LADWP Green Power* (actual)	2002 CA Power Mix** (for comparison)
Eligible Renewable	**3%**	**100%**	**9%**
-Biomass & waste	1%	54%	2.9%
-Geothermal	1%	0%	3.7%
-Small hydroelectric	1%	23%	1.9%
-Solar	0%	<1%	0%
-Wind	0%	23%	0.5%
Coal	**50%**	**0%**	**15.4%**
Large Hydroelectric	**10%**	**0%**	**22.5%**
Natural Gas	**24%**	**0%**	**42.2%**
Nuclear	**13%**	**0%**	**10.9%**
Other	**0%**	**0%**	**0%**
TOTAL	**100%**	**100%**	**100%**

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Eligible Renewable Resource Definition Analysis (2)

- CLA RPS report proposes consideration of all hydro generation as eligible renewables
- Excluding any of the Aqueduct plants (50 to 80 year old plants) from RPS eligibility will undermine future modernization of the plants
- Excluding Hoover will require providing about 2.8% of new renewables at a cost of up to $20 million per year
- Excluding the Owens Gorge and Power Plant 1 will require providing about 1.2% of new renewables at a cost of up to $9 million per year

Hydro Renewable Eligibility Definition Options

1. All LADWP hydro
   (include all Aqueduct, and Hoover)
2. All LADWP owned Hydro
   (include all Aqueduct, exclude Hoover)
3. All LADWP Aqueduct Hydro except Gorge Plants
   (exclude Owens Gorge, and Hoover)
4. LADWP 30 MW or less Hydro
   (exclude Power Plant 1, Owens Gorge, and Hoover)

LADWP Hydro Definition Option RPS Levels (2002-03 data)

Plant Name	Max Plant Size MW	% of RPS Contribution	Highest Level Included in Option No.	Total % RPS
30 MW or Less Aqueduct Plants (multiple locations)	18	0.6%	4	0.6%
Power Plant 1 (one location)	52	0.5%	3	1.1%
Gorge Plants (three different locations)	38	0.7%	2	1.8%
Hoover (one location)	491	2.8%	1	4.6%

LADWP Recommendations

- Include all LADWP owned hydro generation plants as eligible renewable resources (i.e. Option 2: All Aqueduct power plants including Owens Gorge and PP1 plants).
- Include any future modernization, upgrade and/or expansion of the Aqueduct power generation system to increase the efficient utilization of the Aqueduct water.
- Acquisition of new hydro power will be limited to generation size of 30 MW or less.