

2002 NET SYSTEM POWER CALCULATION

2002 CALIFORNIA POWER MIX

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CALIFORNIA ENERGY COMMISSION

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Introduction

In 1997, the legislature directed the California Energy Commission to calculate and report net system power, annually (Senate Bill 1305, Sher, Chapter 796, statute of 1997)¹. Net system power represents the mix of fuel types in the pool of generic (undifferentiated) power available for sale in California.

Net system power plays a role in California's retail disclosure program, which requires every retail electricity supplier (retailer) to disclose the sources of power that it offers to customers. The power a retailer offers for sale to customers is deemed to be net system power unless the retailer makes verifiable claims that it has made specific purchases from wholesale generators of identified fuel types. These specific purchases then allow the retailer to claim that the power it offers for sale to retail customers is different from net system power.

The Energy Commission established a standard reporting format by regulation, the Power Content Label, on which retailers must disclose the required information. The Power Content Label, which the retailer includes with a customer's electricity bill, allows the consumer to compare the proportions of the retailer's specific product with those of the net system power mix (which is identified as the "CA Power Mix" on the label).

2002 Net System Power

Table 1 is the Energy Commission's estimate of net system power for 2002.

Table 1
2002 California Net Power Mix

Fuel Type	Net System Power
Coal	15%
Large Hydroelectric	23%
Natural Gas	42%
Nuclear	11%
Eligible Renewables	9%
Other	0%
Total:	100%

¹ Public Utilities Code (PUC) section 398.5 (f).

What Are Specific Purchases?

Specific purchases refer to wholesale power purchases that the retailer can trace the generation back to specific generators, and thereby claim that the electricity offered for sale to retail customers is a particular fuel type. Retailers who do not wish to claim specific purchases may deem all of their power as net system power.

What is Net System Power?

Net system power is “the mix of electricity fuel source types established by the California Energy Resources Conservation and Development Commission representing the sources of electricity consumed in California that are not disclosed as 'specific purchases' by retail service providers.”²

On the Power Content Label, net system power is called "California Power Mix." Net system power is the percentage of annual generation produced for consumption in California during the previous calendar year in each of the statute's fuel type categories. Imports of out-of-state generation are included in net system power by fuel type, but both self-generation and specific purchases are excluded from net system power by fuel type.

2002 Gross System Power

Although not defined in the legislation, the sum of all in-state generation and imports by fuel type could be called "gross system power." The gross system power mix changes from year to year as generation resources are added to or removed from the generation mix. Gross system power can also change significantly from year to year because, for example, hydropower is abundant during wet years and scarce during dry years. Swings in hydropower lead to swings in gas-fired generation in the opposite direction. **Table 2** presents the Energy Commission's estimate of the gross system power in gigawatt hours and percentages for 2002.

The data for **Table 2** come from a mix of sources. Power plant owners in California are required to report their generation output to the Energy Commission by February 15 of each year. However, a small number of owners missed this year's due date; as a consequence, the Energy Commission used data from other sources or from the previous year to fill in the gaps. Other data come from California's control area operators, who are required to report summary information to the Energy Commission about imports and exports.

² PUC section 398.2 (c).

Table 2
2002 Gross System Power (GSP) in GWh

Fuel Type	In-State	NW Imports	SW Imports	GSP	GSP %
Coal	27,618	5,283	21,582	54,483	20.0
Large Hydro	26,937	19,304	1,959	48,200	17.7
Natural Gas	90,898	1,717	6,865	99,480	36.5
Nuclear	34,353	882	5,267	40,502	14.9
Renewables	29,879			29,879	11.0
Biomass	7,140			7,140	2.6
Geothermal	13,946			13,946	5.1
Small Hydro	4,382			4,382	1.6
Solar	864			864	0.3
Wind	3,546			3,546	1.3
Other	0			0	0.0
Total	209,685	27,186	35,673	272,544	100

After grouping net imports into two source regions, Pacific Northwest and Desert Southwest, the Energy Commission estimates the average power mix of the two regions based on the generation output and fuel types³ of the power plants in the Western Electricity Coordination Council. The net imports are allocated into fuel types using the estimated average power mixes and are added to the corresponding fuel types of in-state generation to obtain the gross system power.

Calculation of Net System Power

Table 3 shows that net system power is simply gross system power minus the claims of specific purchases and self-generation. The net system power, along with specific purchases, is also shown in **Figure 1**.

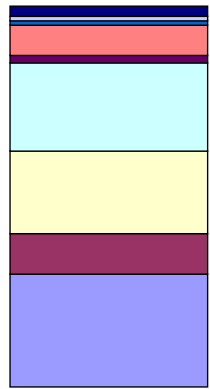
³ Data source: the Energy Information Administration databases for form EIA-906, November 2001 to October 2002.

Table 3
2002 Net System Power (NSP) in GWh

Fuel Type	GSP	Claims	Self-gen.	NSP	NSP %
Coal	54,483	(28,375)	(331)	25,777	15.4
Large Hydro	48,200	(10,465)		37,735	22.5
Natural Gas	99,480	(20,608)	(8,244)	70,627	42.2
Nuclear	40,502	(22,254)		18,248	10.9
Renewables	29,879	(14,472)	(310)	15,097	9.0
Biomass	7,140	(1,954)	(310)	4,876	2.9
Geothermal	13,946	(7,692)		6,254	3.7
Small Hydro	4,382	(1,157)		3,225	1.9
Solar	864	(864)		0	0.0
Wind	3,546	(2,790)		756	0.5
Other	0			0	0.0
Total	272,544	(96,159)	(8,885)	167,500	100

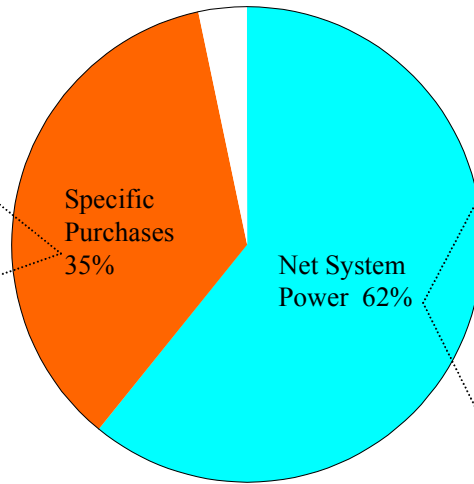
Figure 1 Details of 2002 Gross System Power

Specific Purchases, GWh

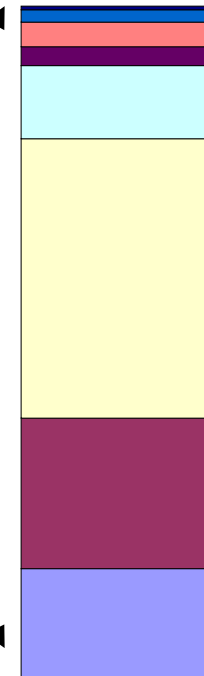


Wind	2,805
Solar	864
Small Hydro	1,157
Geothermal	7,692
Biomass	1,954
Nuclear	22,254
Natural Gas	20,608
Large Hydro	10,465
Coal	28,375

Self-generation 3%



Net System Power, GWh



Wind	741
Solar	0
Small Hydro	3,225
Geothermal	6,254
Biomass	4,876
Nuclear	18,248
Natural Gas	70,627
Large Hydro	37,735
Coal	25,777

Summary

Retailers must disclose the sources of power that they purchase on behalf of their customers to their customers. Unless retailers make specific claims to the contrary that they can verify, they use net system power for purposes of disclosure.

The Energy Commission is required to compute and report net system power annually. The Commission relies on information from generators and system operators to develop its report. This year's report represents the results of the most recent effort.