CALIFORNIA
ENERGY
COMMISSION

2004 NET SYSTEM POWER CALCULATION

COMMISSION REPORT

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Arnold Schwarzenegger, *Governor*

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Introduction

In 1997, the Legislature directed the California Energy Commission (Energy Commission) to calculate and report annually on net system power [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.

By regulation, the Energy Commission established a standard reporting format, 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. However, due to changes in the electricity market, including the suspension of direct access, and the increased reporting of specific purchases, the reporting of net system power as currently designed in statute, may not be useful and can be misleading to consumers. The Energy Commission recommends retail providers continue to expand the reporting of specific purchases to their customers, minimizing the often misleading use of net system power as a default power mix.

[1] Public Utilities Code section 398.5 (f).

2004 Net System Power

Table 1 is the Energy Commission's estimate of net system power for 2004.

Table 1
2004 California Net Power Mix

Fuel Type	Net System Power
Coal	29%
Large Hydroelectric	20%
Natural Gas	45%
Nuclear	2%
Eligible Renewables	4%
Other	0%
Total:	**100%**

What Are Specific Purchases?

Specific purchases refer to wholesale power purchases that the retailer can trace 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 Energy 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 refers to 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.

[2] Public Utilities Code section 398.2 (c).

2004 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. The gross system power mix can also change significantly from year to year. For example, hydropower is abundant during wet years and scarce during dry years. These swings in hydropower typically lead to changes in gas-fired generation in the opposite direction and correspondingly change the Gross System Power mix. Table 2 presents the Energy Commission's estimate of gross system power in gigawatt hours and percentages for 2004.

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 comes from California's control area operators, who are required to report summary information to the Energy Commission about imports and exports.

Table 2
2004 Gross System Power (GSP) in Gigawatt Hours

Fuel Type	In-State	NW	SW	GSP	GSP %
Coal	28,589	5,154	20,760	**54,503**	**19.8%**
Large Hydro	29,667	9,560	1,445	**40,672**	**14.8%**
Natural Gas	104,858	1,926	8,400	**115,184**	**41.9%**
Nuclear	30,241	786	4,467	**35,494**	**12.9%**
Renewables	29,238			**29,238**	**10.6%**
Biomass	5,997			**5,997**	**2.2%**
Geothermal	13,571			**13,571**	**4.9%**
Small Hydro	4,669			**4,669**	**1.7%**
Solar	743			**743**	**0.3%**
Wind	4,258			**4,258**	**1.5%**
Total	222,593	17,426	35,072	**275,091**	**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 types[3] 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.

Table 3
2004 Net System Power (NSP) in Gigawatt Hours

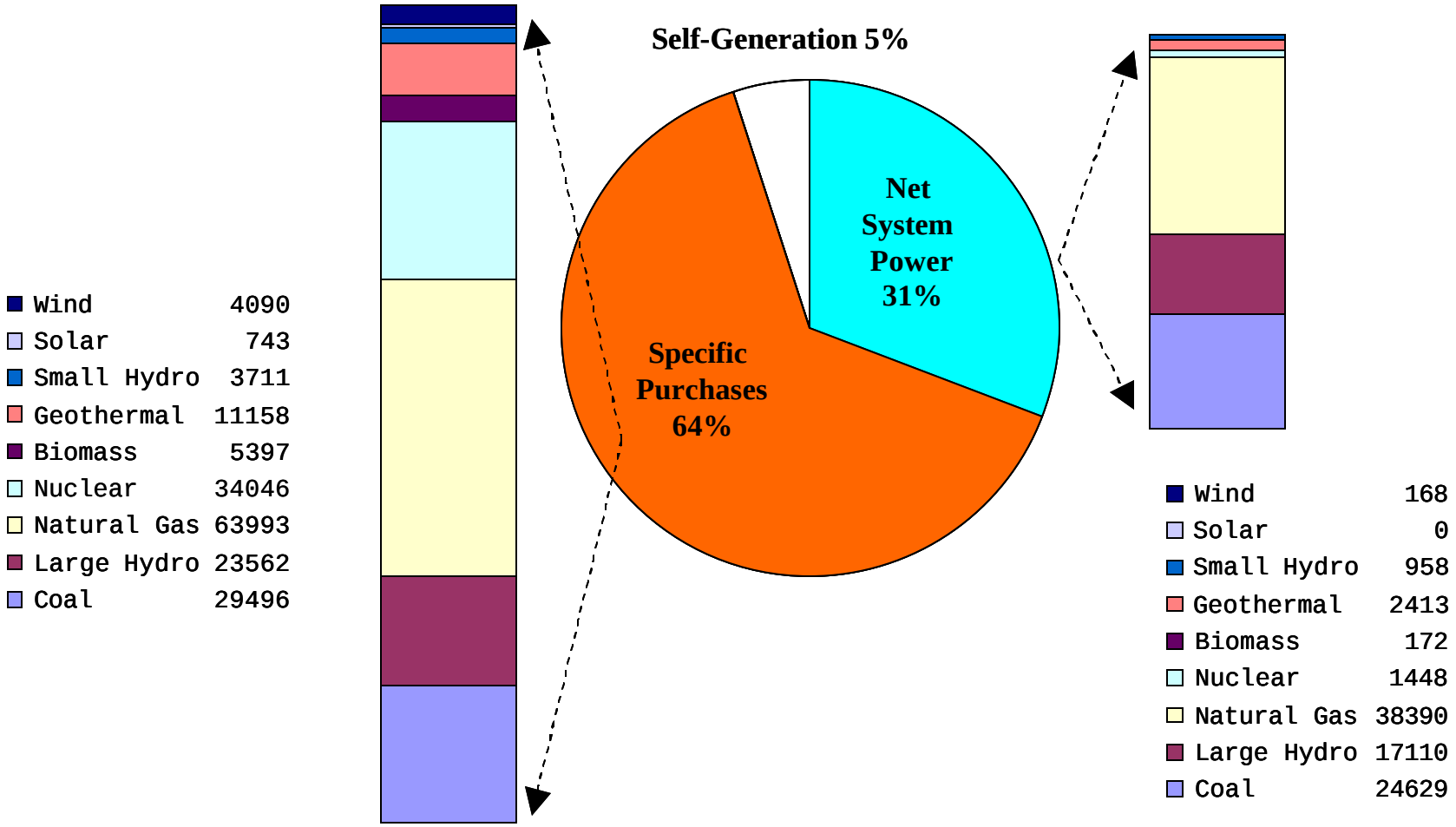
Fuel Type	GSP	Claims	Self-gen	NSP	NSP %
Coal	54,503	(29,496)	(378)	**24,629**	**28.9%**
Large Hydro	40,672	(23,562)		**17,110**	**20.1%**
Natural Gas	115,184	(63,993)	(12,801)	**38,390**	**45.0%**
Nuclear	35,494	(34,046)		**1,448**	**1.7%**
Renewables	29,238	(25,099)	(428)	**3,711**	**4.3%**
Biomass	5,997	(5,397)	(428)	**172**	**0.2%**
Geothermal	13,571	(11,158)		**2,413**	**2.8%**
Small Hydro	4,669	(3,711)		**958**	**1.1%**
Solar	743	(743)		**0**	**0.0%**
Wind	4,258	(4,090)		**168**	**0.2%**
Total	275,091	(176,196)	(13,607)	**85,288**	**100%**

[3] Data sources: the Energy Information Administration databases for form EIA-906, January through November 2004.

Figure 1
Details of 2004 Gross System Power

Specific Purchases
176,196 GWh

Net System Power
85,288 GWh



Summary

Retailers must disclose the sources of power that they purchase on behalf of their customers to their customers. Unless retailers make specific claims 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 Energy 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. The Energy Commission recommends retail providers provide consumers with information on specific purchases to the best of their ability, minimizing the use of net system power as the default power mix.