

CALIFORNIA  
ENERGY  
COMMISSION

# 2008 NET SYSTEM POWER REPORT

## COMMISSION REPORT

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## Abstract

This report provides the California Energy Commission's annual calculation of net system power as required by state law. Net system power represents the mix of generation resources *not* included in the utility disclosure filings but that are used to serve California load. California utilities use this estimate to assign a mix of generation resources to the portion of their electricity that is not assigned to a specific source of generation in their disclosure filings. Thus, the *Net System Power Report* is then combined within each utility's electric generation mix as reported in their disclosure filings to report a complete profile of electric generation to consumers via the Power Content Label included within each utility's billing statements.

**Keywords:** Net System Power Report, electric generation, electricity, coal, natural gas, nuclear, renewables, wind, solar, geothermal, hydro, biomass, total system power, specified claims, power source disclosure, Power Content Label, imports

## Introduction

The California Energy Commission's (Energy Commission) *2008 Net System Power Report* provides the annual calculation of net system power as required by state law (Public Utilities Code, § 398.1 - 398.5). California electric utilities, also referred to as energy service providers, must disclose the generation sources for the power serving their customer loads. Net system power represents the remaining mix of generation resources *not* included in the utility disclosure filings but that are used to serve California load. The report provides a description of how the net system power estimates are derived, the differences between net and total system power and why the net system measurement does not adequately reflect California resource mix. The state's total electricity supply mix is reflected in the Total System Power.

## Definition and Calculation Method

California electric utilities meet their customer electricity demand from power plants they own, electricity supply contracts with other generators or marketers, and/or from short-term market purchases. Generators and marketers also purchase electricity from the western market to meet contract obligations or if spot prices are less expensive than their own generation costs. The generation is either located within California or imported from other regions in the West, including Mexico and Canada. The net electricity imports (total imports minus exports) are separated into two geographical regions: the Northwest (NW) and the Southwest (SW).<sup>1</sup>

**Specific purchases** are defined by law as "electricity transactions which are traceable to specific generation sources by an auditable contract trail or equivalent, such as a tradable commodity system, that provides commercial verification that the electricity source claimed has been *sold once and only once* to a retail consumer [emphasis added]."<sup>2</sup> Another term for these specific purchases is "claims."

**Total system power** is the sum of all in-state generation and net electricity imports by fuel type. All generators that are 1 megawatt (MW) or larger in California report actual generation and fuel use to the Energy Commission under the Quarterly Fuels and Energy Reporting requirements. The California control areas or balancing authorities report metered power flows on the main transmission lines that are used to represent electricity imports.

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<sup>1</sup> The Northwest includes Alberta, British Columbia, Idaho, Montana, Oregon, South Dakota, Washington, and Wyoming. The Southwest includes Arizona, Baja California, Colorado, New Mexico, Nevada, Texas, and Utah.

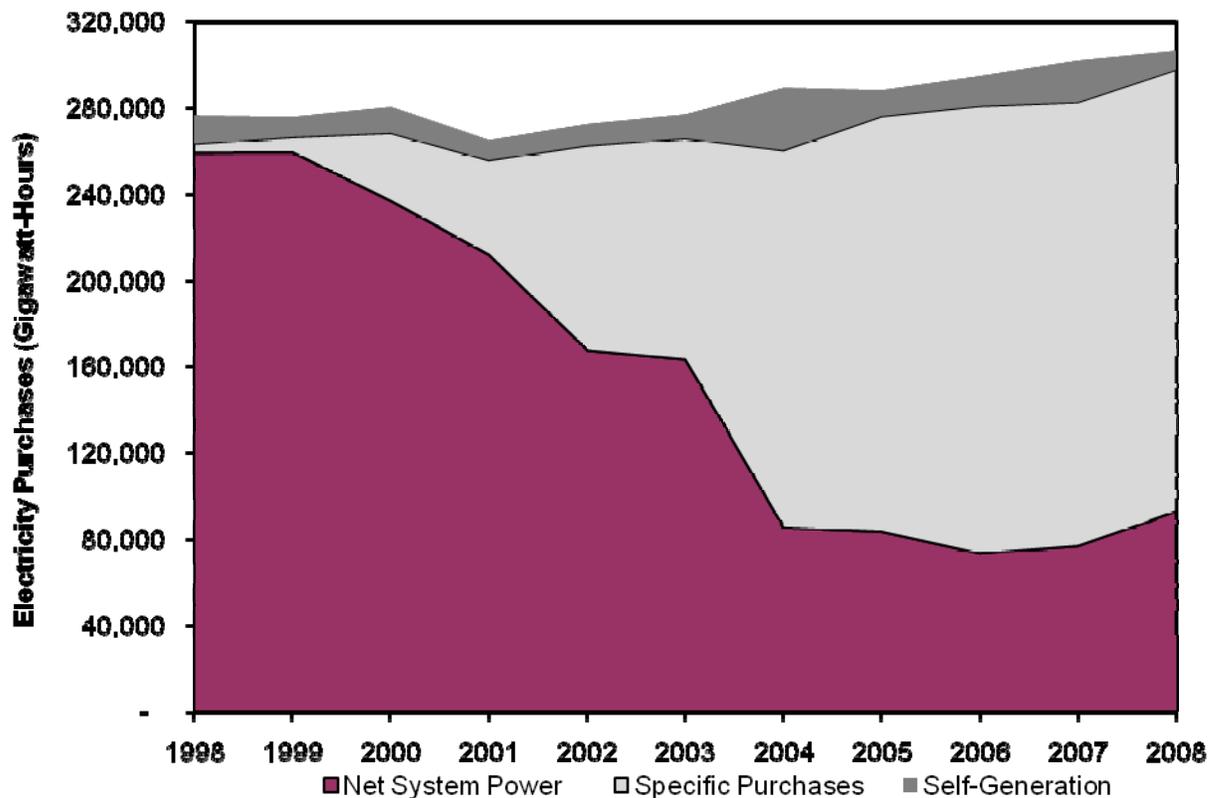
<sup>2</sup> Chapter 796, Statutes of 1997, Article 14, PUC, Section 398.2 (b). See [http://www.leginfo.ca.gov/pub/97-98/bill/sen/sb\\_1301-1350/sb\\_1305\\_bill\\_19971009\\_chaptered.pdf](http://www.leginfo.ca.gov/pub/97-98/bill/sen/sb_1301-1350/sb_1305_bill_19971009_chaptered.pdf)

**Net system power** represents electricity used by California customers that no retailer has specifically claimed as to the source of the generation. It is calculated by taking California’s total system power mix and then subtracting from this total the following amounts:

- Electricity procured by electricity retailers that they reported to the Energy Commission under the Power Source Disclosure Program as “specific purchases.”
- Electricity generated in California for use on-site rather than for retail sales.

**Figure 1** shows that as specific-purchase reporting by California’s investor-owned and publicly owned utilities has increased over time, the amount of electricity defined as net system power has declined. In 1998, net system power represented 94 percent of retail electricity sales, but by 2008 accounted for only 30 percent of the total sales.

**Figure 1: Net System Power Decreases as Reporting of Specific Purchases Increase**



Source: Energy Commission Quarterly Fuels and Energy Report Database

The statute and associated regulations defining the format and content of the power content label were implemented when net system power was expected to remain a high

proportion of total electricity sales. Under those conditions, the power content label was envisioned as a means for reporting and comparing the “green” products offered by energy service providers with the net system power procured by the state’s investor-owned utilities. As a result, net system power is referred to in the power content label as the “California Power Mix,” a designation that misleads consumers into believing that these values represent California’s power mix as a whole. Starting with the *2002 Net System Power Report*, the Energy Commission began including a total system power calculation to clarify the difference between net system power and California’s whole electricity generation portfolio.

Retailers are required to participate in the Power Source Disclosure program; however, they can choose to disclose their specific purchases or use the “California Power Mix” percentages as a proxy for their own power mix. By using the “California Power Mix,” a retailer avoids the annual requirement to report specific purchases. If a retailer claims that its mix of power is different from the “California Power Mix,” however, then it is required to report specific purchases on its label and submit annual reports to the Energy Commission.

By disclosing specific purchases, the retailer demonstrates to its customers how its power mix differs from the “California Power Mix.” The Energy Commission also publishes a *Reconciliation of Retailer Claims* report, which compares the sources of electricity that retailers have disclosed to their consumers with the actual energy generated for consumption by California consumers. The reconciliation report also provides an appendix summarizing statewide participation in the Power Source Disclosure Program and lists the renewable power content for all retailers making specific claims that year.

## Net System Power Findings

Table 1 is the Energy Commission's estimate of net system power for 2008.

**Table 1: 2008 California Net System Power Mix**

Fuel Type	
Coal	33.7%
Large Hydroelectric	18.2%
Natural Gas	41.9%
Nuclear	4.6%
Eligible Renewables	1.6%
Total:	100.0%

Source: Energy Commission calculation

The following section explains why the California Net System Power Mix, as shown in **Table 1**, is not representative of California's actual power mix.

## **2008 Total System Power Findings and Method**

**Table 2** provides the Energy Commission's estimate of Total System Power and the generation mix that met California's 2008 electricity demand. This data is from a variety of information sources, including California power plant owners and control area operators. The in-state numerical values in the total system power table are a reasonably accurate snapshot of the entire California 2008 electricity generation power mix. The electricity import values, however, are not precise because there is no data tracking system available to identify the source of the generation associated with wholesale market transactions and interstate power flows. This will need to be addressed to monitor compliance with Assembly Bill 32 (Nunez, Chapter 488, Statutes of 2006) greenhouse gas emission reductions. Furthermore, the electricity generated from small-scale (less than 1 MW) facilities is not included in the total system power calculation because the locations and volumes of electricity generated by many of these facilities are not reported to the Energy Commission.

As comparisons are made to previous *Net System Power Reports*, it should be pointed out that an accounting error in 2007 incorrectly overstated the "Small Hydro" component of the 2007 *Net System Power Report* under the Northwest imports category. While total imports calculated for 2007 do not change for either the Northwest or the Southwest categories, the 2007 report overstates the contribution of Small Hydro to the Renewables category in the Northwest. Specifically, total hydro accounted for approximately 61 percent of the Northwest imports. However, the split between Large Hydro and Small Hydro should have been reflected as 56.9 percent and 4.1 percent, respectively. Revised tables for both 2007 Total System Power and 2007 Net System Power are included in Appendix B. This accounting error highlights some of the difficulties in determining an appropriate breakdown among various generation types for imported electricity.

**Table 2: 2008 Total System Power (Gigawatt Hours)**

Fuel Type	In-State <sup>1</sup>	NW <sup>2</sup>	SW <sup>2</sup>	TSP	TSP %
Coal*	3,977	8,581	43,271	55,829	18.2%
Large Hydro	21,040	9,334	3,359	33,733	11.0%
Natural Gas	122,216	2,939	15,060	140,215	45.7%
Nuclear	32,482	747	11,039	44,268	14.5%
Renewables	28,804	2,344	1,384	32,532	10.6%
Biomass	5,720	654	3	6,377	2.1%
Geothermal	12,907	0	755	13,662	4.5%
Small Hydro	3,729	674	13	4,416	1.4%
Solar	724	0	22	746	0.2%
Wind	5,724	1,016	591	7,331	2.4%
Total	208,519	23,945	74,113	306,577	100.0%

Source: Energy Information Agency (EIA), Energy Commission Quarterly Fuels and Energy Report Database (QFER), and SB 1305 Reporting Requirements

\*Note: In earlier years the in-state coal number included coal fired power plants owned by California utilities.

1 In-state generation: Reported generation from units 1 MW and larger.

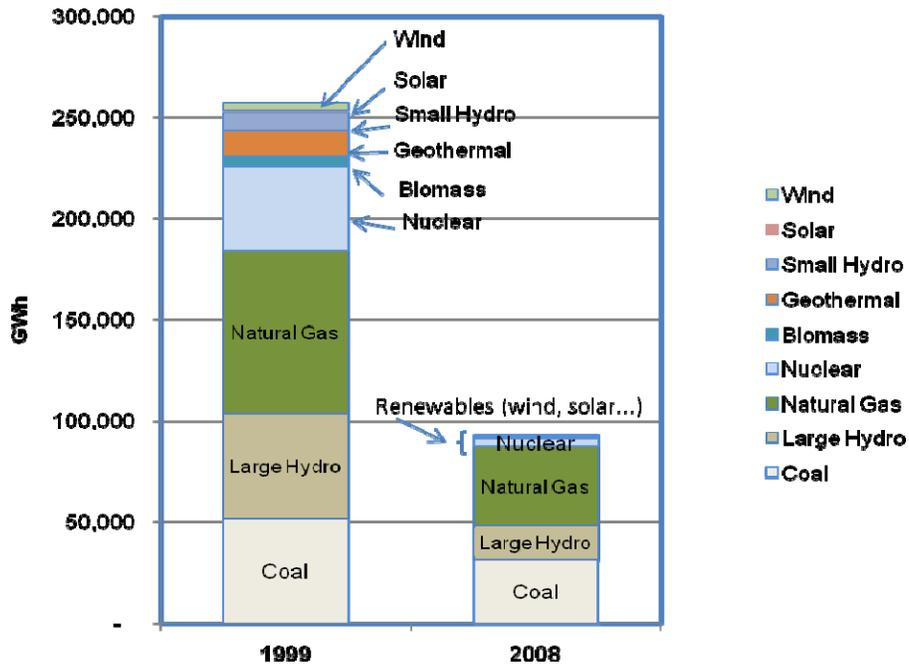
2 Net electricity imports are based on metered power flows between California and out-of-state balancing authorities. The resource mix is based on utility power source disclosure claims, contract information and calculated estimates on the remaining balance of net imports.

## Net System Power and Sources of California Electric Generation

As California energy service providers have specified a larger and larger share of the sources of their power, net system power has changed in two ways. It has become a smaller share of total generation and is characterized by a higher percentage of “unclaimed” coal and natural gas generation.

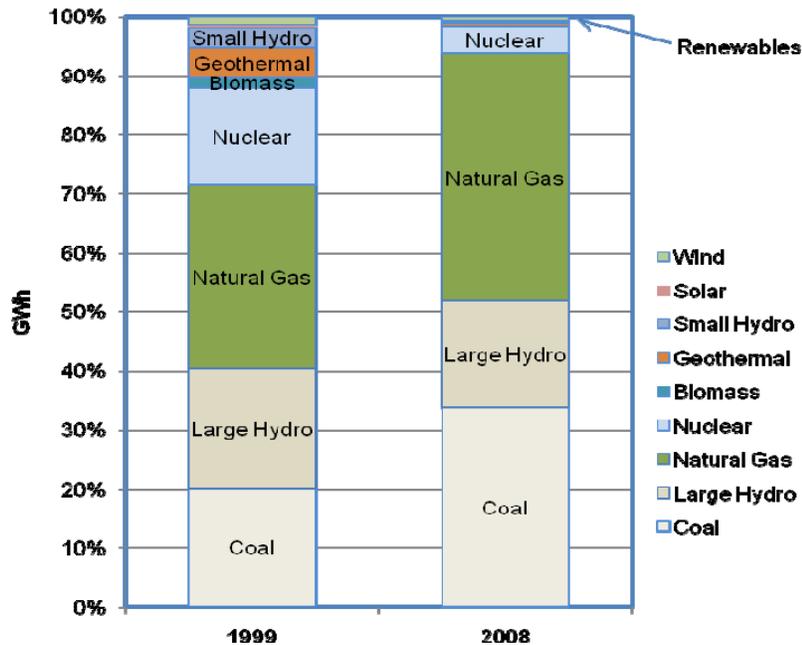
**Figure 2** illustrates the decrease in net system power between 1999 and 2008. Although the volume of the net system power is lower in 2008, **Figure 3** shows an increase in the total share of net system power from fossil fuels (coal and natural gas). Unspecified imports now represent a larger portion of the net system power in 2008 compared to 1999. These two developments result in greater divergence between net system power and total system power. The method used to estimate the resource mix of unspecified imports has a direct influence on the net system power calculations.

**Figure 2: Net System Power Becomes Smaller 1999-2008**



Source: Energy Commission QFER Database (smallest values not labeled due to space limitations)

**Figure 3: Natural Gas and Coal Shares of Net System Power Mix Become Larger 1999-2008**



Source: Energy Commission QFER Database (smallest values of wind, solar, and other renewables not labeled due to space limitations)

**Table 3** provides a comparison of the total system power mix percentages to the net system power estimates. The mandated Power Content Label represents net system power as the “California Power Mix” and gives customers the impression that the estimate represents actual statewide values. The net system power calculation gives the impression that coal generation represents 34 percent of the statewide mix instead of the 18 percent shown in the total system power mix and that renewable generation is only 2 percent of the state’s resource mix instead of the actual 11 percent.

Currently, Power Content Label is a disservice to the public because the information listed does not allow consumers to monitor progress toward California’s Renewables Portfolio Standard (RPS) goals. In addition, the definition of renewable resources for the RPS includes restrictions on municipal solid waste, biomass, and small hydropower and is not reflected in the Power Content Labels. As a result, parties reviewing Power Content Labels may believe that the labels accurately represent progress in meeting the RPS goal, when, in fact, it does not. The information reported to the Energy Commission regarding the quantity and mix of renewable energy for RPS compliance differs from that disclosed to electricity consumers under the Power Source Disclosure Program.

**Table 3: 2008 Comparison of Net System Power and Total System Power**

Fuel Type	NSP	TSP
Coal	33.7%	18.2%
Large Hydro	18.2%	11.0%
Natural Gas	41.9%	45.7%
Nuclear	4.6%	14.5%
Renewables	1.6%	10.6%

Source: Energy Commission Quarterly Fuels and Energy Report Database

## Power Source Disclosure

Retail providers who make specific purchases claims to their customers are required by law to report the following: The name of the generating facilities and/or power pools where power was procured, total kilowatt hours (kWh) procured by generating facilities, total kWh purchased, total kWh resold or consumed on-site, and the total net specific purchases. Additionally, retail providers are required to provide a kWh total of purchases that cannot be tied to a power pool or generating facility. Program regulations require that these annual reports be verified by an internal auditor or for a publicly owned utility that claims one product, the governing board must attest to this report. This report is due to the Energy Commission by March 1 each year.

For 2008, the Energy Commission has received specific purchases information from these retail providers:

3 Phases	Modesto Irrigation District
City of Anaheim	Pacific Gas and Electric
Azusa Light and Water	Pasadena
Bear Valley Electric	Redding Electric Utility
Cerritos	Sacramento Municipal Utility District
Coral Energy	San Diego Gas & Electric
Glendale	Silicon Valley Power
Imperial Irrigation District	Southern California Edison
Lompoc	Surprise Valley Electrification
Los Angeles Department of Water & Power	Corporation
Merced Irrigation District	Turlock Irrigation District

These retail providers did not submit annual reports on time and their 2007 specific purchases totals were used as placeholders where available:

Alameda Power and Telecom	City of Palo Alto
Biggs Municipal Utilities	City of Riverside
Burbank Water and Power	City of Shasta
City of Colton	City of Ukiah
City of Healdsburg	Sempra Energy
City of Lodi	Valley Electric Association
City of Needles	

## **Estimating the Resource Mix of Out-of-State Power Imports**

Currently there is no public, western-wide system that identifies deliveries of contracted generation sources and short-term market purchases to specific locations in California. As a result, the Energy Commission makes estimates and uses general assumptions to allocate the quantities of imported electricity to specific fuel types. This section explains the methodology used for allocating imports.

Senate Bill 1305 (Sher, Chapter 796, Statutes of 1997) requires electricity generators that report meter data to a control area operator to provide generation, fuel type and fuel consumption data on a quarterly basis. California control area operators are required to report to the Energy Commission the annual amounts of electricity crossing California's borders as imports and exports. For the *2008 Net System Power Report*, imports are reduced by electricity exports to reflect a net import requirement for California. While not perfect, the method is at least transparent.

Utility claims have been expanded to include specific line items in both the Northwest and Southwest categories. The remaining unclaimed imports are represented by the annual average power mix in each specific region. These average mixes were determined from generator output data reported annually to the U.S. Energy Information Administration by state and fuel type. **Appendix A** contains additional details on these calculations.

This averaging approach tends to overstate the amount of electricity imports from other out-of-state baseload generators. Using the average mix method ignores the likelihood that the output from low-cost baseload power plants that are owned by out-of-state utilities remains in each utility's service area to serve its own customers. Under the average power mix method used in this report, the out-of-state utility is assumed to export a portion of its share of baseload generation to serve California consumers. If all western utilities implemented a power source disclosure program similar to California's, it would be straightforward to identify the marginal generation plants serving spot market transactions.

Alternative accounting methods can result in variations in the estimated mixes of generation resources serving electricity imports and their calculated carbon content. For example, the Climate Change Registry applies regional average resource mixes for all imports, while marginal generation studies suggest that natural gas and hydroelectric power are the primary resources serving the western unspecified electricity market. The California Air Resources Board is using a default carbon-equivalent value of 1,100 pounds per megawatt hour for unspecified electricity sources. This default emission factor is intended to be only an interim measure, however, and is not demonstrated to be any more accurate than the approach used in this report.

A new analytical approach for imports is necessary to more accurately characterize how different types of generation facilities are likely to participate in the regional electricity markets. Since imports represent a significant portion of the electricity supply serving California demand, a *realistic* accounting of associated emissions will be important to design and implement in the greenhouse gas reduction program required under the *Global Warming Solutions Act of 2006 (AB 32)*. A flawed resource mix estimate may cause unintended market consequences that increase costs and provide no effect on total greenhouse gas emissions.

Calculation of Net System Power **Table 4** shows that net system power is total system power minus the claims of specific purchases and self-generation. Only the percentages for major fuel types are used on the power content label.

The Self-Generation category for 2008 corrects some past reporting inconsistencies that occurred in the *2007 Net System Power Report*. Some generators incorrectly reported power under the "Self-Generation" category instead of "sales for resale" on the CEC-1304 reporting form. The errors were based on genuine mistakes or by the assumption that a utility-owned generating unit was considered to be "Self-Generation" for

reporting purposes. The 2008 *Net System Power Report* addresses this issue, as shown in **Table 4**. The revised Self-Generation figure for 2007 is 9,062 GWh. The revision for 2007 represents a reduction of approximately 50 percent, or 10,511 GWh, from what was originally calculated. The revision of the Self-Generation category primarily affects the natural gas category by correcting an under-allocation of the natural gas category as determined in the 2007 Net System Power mix. A revised calculation for the 2007 *Net System Power Report* is shown in **Appendix B**.

**Table 4: 2008 Net System Power (GWh)**

Fuel Type	TSP	Claims	Self-Gen	NSP	NSP %
Coal	55,829	(24,295)	(351)	31,183	33.7%
Large Hydro	33,733	(16,916)		16,817	18.2%
Natural Gas	140,215	(93,334)	(8,027)	38,854	41.9%
Nuclear	44,268	(39,979)		4,289	4.6%
Renewables	32,532	(30,447)	(601)	1,484	1.6%
Biomass	6,377	(5,820)	(601)	-44	0.0%
Geothermal	13,662	(13,093)		569	0.6%
Small Hydro	4,416	(4,133)		283	0.3%
Solar	746	(739)		7	0.0%
Wind	7,331	(6,662)		669	0.7%
Total	306,577	(204,971)	(8,979)	92,627	100.0%

Source: EIA, Energy Commission QFER, and SB 1305 Reporting Requirements

## Summary

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

The Energy Commission is required to compute and report net system power and total system power annually. The Energy Commission relies on information from generators, control area operators, and electricity retailers, as well as staff expertise on the operation of the western interconnection to develop this report. The report represents the results of data collected for electricity generation and specific purchases in 2008.

## Findings

- To provide consumers with the most accurate and transparent information regarding the sources of electricity being deployed to serve them, retail providers

should give their customers information on the utility's own electricity generation supply portfolio, thereby minimizing the use of net system power as the default power mix for California.

- The net system power fuel mix does not establish a representative greenhouse gas profile of electricity imports. The Power Content Label should not be used to estimate a utility's greenhouse gas emissions associated with its generation and power purchases.
- Consumers interested in monitoring the state's progress towards achieving the Renewables Portfolio Standard should not use the Total System Power table.

## APPENDIX A – Calculating the Fuel Mix of Electricity Imports

The fuel mix of imported power was estimated similarly to the California power mix. It includes two parts: Specific imports based on the claims of California load-serving entities and regional non-specified imports by fuel type.

Determining specific imports is a relatively straightforward process. It is simply the claims of imports based on contractual relationships between the energy service providers and out-of-state generators reported as part of the power source disclosure reporting process. Other sources of contract information are also applied. The non-specified imports were calculated as the total imports less the imported specified claims. The non-specified imports mixes were then estimated using the percentage mix of generation in each region, excluding the specific claims (purchases or ownership shares).

The overall generation by resource type was calculated for the Northwest and Southwest regions based on United States Energy Information Administration (EIA) monthly generation for 2008 (EIA Forms 906 and 920). Generation for British Columbia Hydro, Integen’s La Rosita power plant, and Termoelectrica de Mexicali’s power plant are added to the EIA Western Electricity Coordinating Council (WECC) values. These facilities are part of the WECC, but are not reported by the EIA. Claims of specific purchases based on contracts with California energy service providers were subtracted from reported WECC generation by region and resource type. The percentage resource mix of the remaining generation in each region is then applied to the unspecified California imports.

**Table A-1** reconciles total claims made by California utilities with fuel-specific imports from the Northwest and the Southwest. The resulting claims are considered to be what utilities have purchased from California-based electric generators.

**Table A-1: 2008 Utilities Claims by Region (GWh)**

Fuel Type	Total Claims	California Claims	NW Claims	SW Claims
Coal	24,295	2,235	829	21,231
Large Hydro	16,916	14,696	-	2,220
Natural Gas	93,334	92,752	280	302
Nuclear	39,979	32,570	-	7,409
Renewables	30,447	27,979	1,728	740
Biomass	5,820	5,284	536	-
Geothermal	13,093	12,353	-	740
Small Hydro	4,133	3,445	688	-
Solar	739	739	-	-
Wind	6,662	6,158	504	-
Total	204,971	170,232	2,837	31,902

Source: EIA, Energy Commission QFER, and SB 1305 Reporting Requirements

**Table A-2** separates California's utility claims for fuel-specific electric generation imported from the Northwest. The remaining non-specified claims are then allocated based on the power mix for the Northwest as reported by the EIA.

**Table A-2: 2008 Northwest Power Imports Reconciliation (GWh)**

Fuel Type	Total NW Imports	California Utility Claims for NW Power Imports	Estimated Non-Specified NW Power Imports
Coal	8,581	829	7,752
Large Hydro	9,334	-	9,334
Natural Gas	2,939	280	2,659
Nuclear	747	-	747
Renewables	2,344	1,728	616
Biomass	654	536	118
Geothermal	-	-	-
Small Hydro	674	688	-14
Solar	-	-	-
Wind	1,016	504	512
Total	23,945	2,837	21,108

Source: EIA, Energy Commission QFER, and SB 1305 Reporting Requirements

**Table A-3** separates California’s utility claims for fuel-specific electric generation from total Southwest imports. The remaining non-specified claims are then allocated based on the power mix for the Southwest as reported by the EIA.

**Table A-3: 2008 Southwest Power Imports Reconciliation (GWh)**

Fuel Type	Total SW Imports	California Utility Claims for SW Power Imports	Estimated Non- Specified SW Power Imports
Coal	43,270	21,231	22,039
Large Hydro	3,359	2,220	1,139
Natural Gas	15,060	302	14,758
Nuclear	11,039	7,409	3,630
Renewables	1,385	740	645
Biomass	4	-	4
Geothermal	755	740	15
Small Hydro	13	-	13
Solar	22	-	22
Wind	591	-	591
Total	74,113	31,902	42,211

Source: EIA, Energy Commission QFER, and SB 1305 Reporting Requirements

**Table A-4** summarizes the total electric generation for the Northwest and Southwest regions based on information from the EIA.

**Table A-4: Electric Generation Profiles for Northwest and Southwest (GWh)**

Fuel Type	Northwest Production	Percent	Southwest Production	Percent
Coal	96,411	36.6%	150,429	53.9%
Large Hydro	115,082	43.7%	8,894	3.2%
Natural Gas	33,066	12.6%	86,813	31.1%
Nuclear	9,210	3.5%	28,691	10.3%
Renewables	9,333	3.5%	4,520	1.6%
Biomass	1,992	0.8%	22	0.0%
Geothermal	-	0.0%	829	0.3%
Small Hydro	519	0.2%	75	0.0%
Solar	-	0.0%	128	0.0%
Wind	6,822	2.6%	3,466	1.2%
Other*	121	0.0%	166	0.0%
Total	263,223	100.0%	279,513	100.0%

Source: EIA

\*Note: This category has been rounded to zero for the purposes of this report.

Table A-5 allocates the non-specified imports into California based on an unclaimed Northwest generation profile.

**Table A-5: Northwest Electric Generation Reconciliation (GWh)**

Fuel Type	Total Northwest Generation (A)	Claims by California Utilities on Northwest Generation (B)	Unclaimed Northwest Generation	Percent (C)	Non-specified Imports into California from Northwest (D)=((A) - (B)) * (C)	Total Imports into California from Northwest (B)+(D)
Coal	96,411	829	95,582	36.7%	7,752	8,581
Large Hydro	115,082	-	115,082	44.2%	9,334	9,334
Natural Gas	33,066	280	32,786	12.6%	2,659	2,939
Nuclear	9,210	-	9,210	3.5%	747	747
Renewables	9,333	1,728	7,605	2.9%	616	2,344
Biomass	1,992	536	1,456	0.6%	118	654
Geothermal	-	-	-	0.0%	-	-
Small Hydro	519	688	-169	-0.1%	-14	674
Solar	-	-	-	0.0%	-	-
Wind	6,822	504	6,318	2.4%	512	1,016
<b>Total</b>	<b>263,101</b>	<b>2,837</b>	<b>260,264</b>	<b>100.0%</b>	<b>21,108</b>	<b>23,945*</b>

Source: EIA, Energy Commission QFER, and SB 1305 Reporting Requirements

\*Note: Net Imports into California from Northwest = 23,945 GWh per SB 1305 Control Area Reporting

Table A-6 allocates the non-specified imports into California based on an unclaimed Southwest generation profile.

**Table A-6: Southwest Electric Generation Reconciliation (GWh)**

Fuel Type	Total Southwest Generation (A)	Claims by California Utilities on Southwest Generation (B)	Unclaimed Southwest Generation	Percent (C)	Non-specified Imports into California from Southwest (D)=((A) - (B)) * (C)	Total Imports into California from Southwest (B)+(D)
Coal	150,429	21,231	129,198	52.2%	22,039	43,270
Large Hydro	8,894	2,220	6,674	2.7%	1,139	3,359
Natural Gas	86,813	302	86,511	35.0%	14,758	15,060
Nuclear	28,691	7,409	21,282	8.6%	3,630	11,039
Renewables	4,520	740	3,780	1.5%	645	1,385
Biomass	22	-	22	0.0%	4	4
Geothermal	829	740	89	0.0%	15	755
Small Hydro	75	-	75	0.0%	13	13
Solar	128	-	128	0.1%	22	22
Wind	3,466	-	3,466	1.4%	591	591
<b>Total</b>	<b>279,348</b>	<b>31,902</b>	<b>247,446</b>	<b>100.0%</b>	<b>42,211</b>	<b>74,113*</b>

Source: EIA, Energy Commission QFER, and SB 1305 Reporting Requirements

\*Note: Net Imports into California from Southwest = 74,113 GWh per SB 1305 Control Area Reporting

**Table A-7** reconciles California utility claims, non-specified California power generation, and non-specified imports to determine the net system power (“California Power Mix”).

**Table A-7: 2008 Net System Power Reconciliation (GWh)**

<b>Fuel Type</b>	<b>Total California Generation Excluding Self Generation (A)</b>	<b>California Utility Claims for California Generation (B)</b>	<b>California Non-Specified Generation (C) = (A) - (B)</b>	<b>Estimated Non-Specified SW Power Imports (D)</b>	<b>Estimated Non-Specified NW Power Imports (E)</b>	<b>NSP (C) + (D) + (E)</b>	<b>Percent</b>
Coal	3,626	2,235	1,391	22,039	7,752	31,182	33.7%
Large Hydro	21,040	14,696	6,344	1,139	9,334	16,817	18.1%
Natural Gas	114,189	92,752	21,437	14,758	2,659	38,854	41.9%
Nuclear	32,482	32,570	-88	3,630	747	4,289	4.6%
Renewables	28,203	27,979	224	645	616	1,485	1.6%
Biomass	5,119	5,284	-165	4	118	-43	0.0%
Geothermal	12,907	12,353	554	15	-	569	0.6%
Small Hydro	3,729	3,445	284	13	-14	283	0.3%
Solar	724	739	-15	22	-	7	0.0%
Wind	5,724	6,158	-434	591	512	669	0.7%
<b>Total</b>	<b>199,540</b>	<b>170,232</b>	<b>29,308</b>	<b>42,211</b>	<b>21,108</b>	<b>92,627</b>	<b>100.0%</b>

Source: EIA, Energy Commission QFER, and SB 1305 Reporting Requirements

## APPENDIX B – Revision of the 2007 Net System Power Report

The following two tables revise the 2007 Net System Power Report adopted by the Energy Commission at the April 16, 2008, Business Meeting. Two accounting errors were significant enough to warrant recalculations of the fuel-type allocations within both Total System Power and Net System Power estimates.

The first error was made in determining the split of total hydroelectric generation between the Large Hydro and Small Hydro categories under the Pacific Northwest (NW) imports column. The original report included an overestimated amount of NW generation from Small Hydro facilities, which instead should be included in the Large Hydro category. The correct NW 2007 Large Hydro generation is 12,494 GWh, instead of 9,263 GWh. The corrected NW 2007 Small Hydro generation is 1,469 GWh, instead of 4,700 GWh. The total for all fuel-types for the NW remains unchanged at 24,669 GWh. The correction reduces the amount of Small Hydro generation from imports, which changes the overall 2007 renewable generation estimates in the Total System Power and Net System Power mixes.

The second error affects the Self-Generation category. The original report listed 19,573 GWh when the correct figure should have been 9,062 GWh, a 54 percent reduction. This reduction impacts the determination of the revised 2007 Net System Power Report by increasing the share of natural gas in the Net System Power mix.

**Table B-1** details the calculation of 2007 Total System Power using the revised split between Large and Small Hydro for the NW category.

**Table B-1: Revised 2007 Total System Power (GWh)**

Fuel Type	In-State	NW	SW	TSP	TSP %
Coal*	4,190	6,546	39,275	50,011	16.6%
Large Hydro	23,283	12,494	2,686	38,463	12.7%
Natural Gas	118,228	1,837	16,363	136,428	45.1%
Nuclear	35,692	629	8,535	44,856	14.8%
Renewables	28,463	3,163	688	32,314	10.8%
Biomass	5,398	837	1	6,236	2.1%
Geothermal	12,999	0	440	13,439	4.5%
Small Hydro	3,675	1,469	18	5,162	1.7%
Solar	668	0	7	675	0.2%
Wind	5,723	857	222	6,802	2.3%
Total	209,856	24,669	67,547	302,072	100.0%

Source: EIA, Energy Commission QFER, and SB 1305 Reporting Requirements

**Table B-2** calculates the revised 2007 Net System Power proportions based on the corrected Self-Generation data and the re-allocation of Large and Small Hydro categories carried over from **Table B-1**.

**Table B-2: Revised 2007 Net System Power (GWh)**

Fuel Type	TSP	Claims	Self-Gen	NSP	NSP %
Coal	50,011	(24,446)	(373)	25,192	28.9%
Large Hydro	38,463	(16,833)		21,630	24.8%
Natural Gas	136,428	(94,985)	(8,142)	33,301	38.2%
Nuclear	44,856	(42,447)		2,409	2.8%
Renewables	32,314	(27,063)	(547)	4,704	5.3%
Biomass	6,236	(5,077)	(547)	612	0.7%
Geothermal	13,439	(11,682)		1,757	2.0%
Small Hydro	5,162	(4,001)		1,161	1.3%
Solar	675	(670)		5	0.0%
Wind	6,802	(5,633)		1,169	1.3%
Total	302,072	(205,774)	(9,062)	87,236	100.0%

Source: EIA, Energy Commission QFER, and SB 1305 Reporting Requirements

**Table B-3** shows the original 2007 Total System Power table as adopted by the Energy Commission at the April 16, 2008 Business Meeting.

**Table B-3: Original 2007 Total System Power (GWh)**

Fuel Type	In-State	NW	SW	TSP	TSP %
Coal*	4,190	6,546	39,275	50,012	16.6%
Large Hydro	23,283	9,263	2,686	35,232	11.7%
Natural Gas	118,228	1,838	16,363	136,063 <sup>1</sup>	45.2%
Nuclear	35,692	629	8,535	44,856	14.8%
Renewables	28,463	3,163	688	35,545	11.8%
Biomass	5,398	837	1	6,236	2.1%
Geothermal	12,999	0	440	13,439	4.5%
Small Hydro	3,675	4,700	18	8,393	2.8%
Solar	668	0	7	675	0.2%
Wind	5,723	857	222	6,802	2.3%
Total	209,856	24,669	67,547	302,072	100.0%

Source: EIA, Energy Commission QFER, and SB 1305 Reporting Requirements

<sup>1</sup> An original typo – the correct number, by adding across, is 136,429. Percentage is correct as listed.

See: <http://www.energy.ca.gov/2008publications/CEC-200-2008-002/CEC-200-2008-002.PDF>

Table B-4 shows the original 2007 Net System Power table as adopted by the Energy Commission at the April 16, 2008 Business Meeting.

**Table B-4: Original 2007 Net System Power (GWh)**

<b>Fuel Type</b>	<b>TSP</b>	<b>Claims</b>	<b>Self-Gen</b>	<b>NSP</b>	<b>NSP %</b>
Coal	50,011	(24,446)	(1,149)	24,416	31.9%
Large Hydro	35,232	(16,833)		18,399	24.0%
Natural Gas	136,428	(94,985)	(17,329)	24,114	31.4%
Nuclear	44,857	(42,447)		2,410	3.1%
Renewables	35,544	(27,063)	(1,095)	7,383	9.6%
Biomass	6,236	(5,077)	(1,092)	66	0.1%
Geothermal	13,439	(11,682)		1,757	2.3%
Small Hydro	8,393	(4,001)	(3)	4,389	5.7%
Solar	675	(670)		5	0.0%
Wind	6,802	(5,633)		1,169	1.5%
<b>Total</b>	<b>302,072</b>	<b>(205,774)</b>	<b>(19,573)</b>	<b>76,725</b>	<b>100.0%</b>

Source: EIA, Energy Commission QFER, and SB 1305 Reporting Requirements  
<http://www.energy.ca.gov/2008publications/CEC-200-2008-002/CEC-200-2008-002.PDF>