CALIFORNIA
ENERGY
COMMISSION

2007 NET SYSTEM POWER REPORT

STAFF REPORT

April 2008
CEC-200-2008-002

Arnold Schwarzenegger, *Governor*

CALIFORNIA ENERGY COMMISSION

Daryl Metz
Michael Nyberg
Principal Author

Jason Orta
Major Contributor

Daryl Metz
Project Manager

Al Alvarado
Manager
ELECTRICTIY ANALYSIS OFFICE

Sylvia Bender
Deputy Director
ELECTRICITY SUPPLY ANALYSIS DIVISION

Melissa Jones
Executive Director

DISCLAIMER

This report was prepared by a California Energy Commission staff person. It does not necessarily represent the views of the Energy Commission, its employees, or the State of California. The Energy Commission, the State of California, its employees, contractors and subcontractors make no warrant, express or implied, and assume no legal liability for the information in this report; nor does any party represent that the uses of this information will not infringe upon privately owned rights. This report has not been approved or disapproved by the California Energy Commission nor has the California Energy Commission passed upon the accuracy or adequacy of the information in this report.

Table of Contents

Abstract ii
Introduction 1
Definition and Calculation Methodology 1
Net System Power Findings 3
2007 Total System Power Findings and Methodology 4
Net System Power and Sources of California Electric Generation 5
Power Source Disclosure 8
Estimating the Resource Mix of Out-of-State Power Imports 9
Summary 11
Findings 12
Appendix A 13

List of Figures

Figure 1: Net System Power Decreases as Reporting of Specific Purchases Increase 3
Figure 2: Net System Power Becomes Smaller 1999-2007 5
Figure 3: Natural Gas and Coal Shares of Net System Power Mix Become Larger 1999-2007 7

List of Tables

Table 1: 2007 California Net System Power Mix 3
Table 2: 2007 Total System Power in Gigawatt Hours 4
Table 3: 2007 Comparison of Net System Power and Total System Power 7
Table 4: 2007 Net System Power (NSP) in Gigawatt Hours 10
Table A-1: 2007 Utilities Claims by Region (Gigawatt Hours) 14
Table A-2: 2007 Northwest Power Imports Reconciliation (Gigawatt Hours) 14
Table A-3: 2007 Southwest Power Imports Reconciliation (Gigawatt Hours) 15
Table A-4: Electric Generation Profiles for Northwest and Southwest (Gigawatt Hours) 15
Table A-5: Northwest Electric Generation Reconciliation (Gigawatt Hours) 16
Table A-6: Southwest Electric Generation Reconciliation (Gigawatt Hours) 17
Table A-7: 2007 Net System Power Reconciliation (Gigawatt Hours) 18

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 which are used to serve California load. California energy service providers use this estimate to assign a mix of resources to the portion of their resource they do not assign a specific source in their disclosure filings. This net system power mix together with their disclosure filings, are used to report the sources of generation for each energy service provider.

Introduction

The 2007 Net System Power Report provides the California Energy Commission's 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, are required under this law to 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, and 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 electricity supply mix as a whole is reflected in the Total System Power.

Consumers receive information about the fuel mix comprising net system power in a Power Content Label every quarter. The original intent of the label was to provide customers information on the generation sources used by their energy service provider compared to an average of other providers' supply sources. The net system power mix once represented a large portion of the total electricity supply and is now only the small residual amount that providers do not disclose. Since investor-owned utilities had an obligation to acquire all of their electricity from the Power Exchange, the net system power was a reasonable characterization of the overall resource mix. Deregulation originally allowed customers the option to choose among different energy service providers that offered alternative electricity sources. The Power Exchange no longer exists and the option to choose energy service providers was suspended after the 2000-2001 energy crisis.

Currently energy service providers disclose most of the generation sources serving their customer load, reporting the remaining net system power is not useful to consumers because it does not adequately reflect California's resource mix. Customers do not understand this information and usually misinterpret the significance of the net system power estimate, often assuming that the values represent the statewide power mix, not just the residual amounts of unclaimed supplies. The net system power estimates cannot be used to monitor the progress of the California Renewable Portfolio Standard goals or establish a representative greenhouse gas profile of electricity imports. The report describes this and other issues regarding the accounting methodologies which diminish the accuracy of the resource mix calculations. Since the Net System Power Report and Power Content Label are statutory requirements, any changes require legislative action.

Definition and Calculation Methodology

Energy service providers meet their customer electricity demand from power plants they own, electricity supply contracts from other generators or marketers, and/or from short-term market purchases. 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).[1]

---

[1] 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.

California's power supply is identified by the types of fuel and renewable energy technologies used to generate electricity. Fuel types include coal, natural gas, nuclear, and other fuels, such as distillate fuel oil. Renewable energy technologies include biomass, methane gas and waste, geothermal, solar, wind, and small hydroelectric. This report uses the same definition for small hydroelectric facilities, 30 megawatts or less, that is used in the state's Renewable Portfolio Standard. Electricity from large hydroelectric facilities is reported separately. Renewable energy facilities that use more than 25 percent natural gas as a supplemental fuel source are not to be counted as renewable energy sources.

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][2]." Specific purchases include electricity generated by power plants directly owned by a utility. 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. Each year, the total-system-power mix changes, in part, because hydroelectric generation can significantly vary from year to year and other resources will make up the difference. Also, the power plant fleet within the western interconnection continues to change as new facilities come on-line and as existing facilities are "mothballed" or permanently retired.

Net system power represents the electricity generated in California or imported to serve California customers that no retailer has specifically claimed. 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.

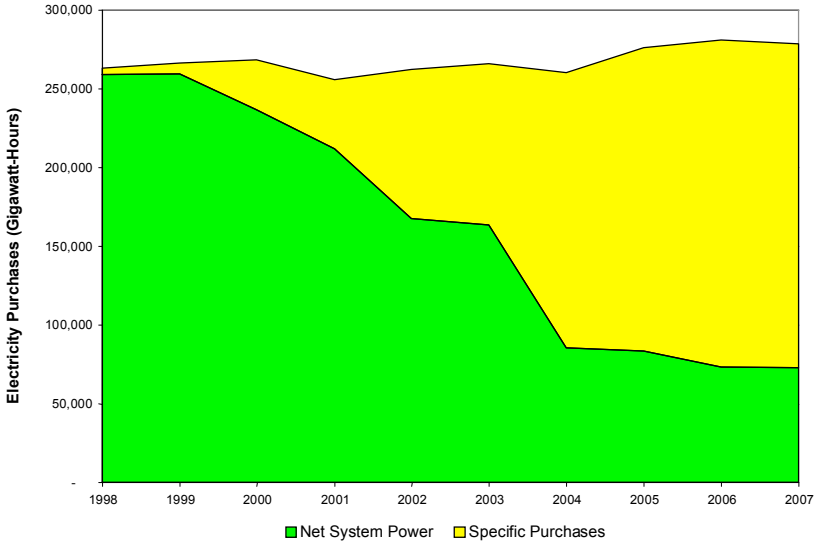
Figure 1 shows that as specific-purchase reporting by California's investor-owned and publicly owned utilities has increased over time, the amount of electricity defined as net system power has declined. In 1998, net system power represented 94 percent of retail electricity sales, but by 2007 accounted for only 25 percent of the total sales.

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.

---

[2] 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

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



Retailers are required to participate in the Power Source Disclosure program, but 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 makes a claim 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 to submit annual reports to the Energy Commission. A retailer may choose to disclose the specific purchases if they include more renewable generation or other sources that have a lower environmental footprint than the resources included in the "California Power Mix."

By disclosing specific purchases, the retailer demonstrates to its customers how its power mix differs from the "California Power Mix." Each October, the Energy Commission publishes *Reconciliation of Retailer Claims* comparing the sources of electricity that retailers have disclosed to their consumers to 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 listing the renewable power content for all retailers that made specific claims that year.

Net System Power Findings

Table 1 is the Energy Commission's estimate of net system power for 2007.

Table 1: 2007 California Net System Power Mix

Fuel Type	
Coal	32%

Large Hydroelectric	24%
Natural Gas	31%
Nuclear	3%
Eligible Renewables	10%
Total:	100%

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.

2007 Total System Power Findings and Methodology

The Energy Commission's estimate of 2007 California Total System Power shows the California power mix as a whole, in gigawatt-hours and by percentages **(Table 2)**. The data for **Table 2** 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 California's 2007 entire electricity generation power mix. The 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 in order to monitor compliance with AB 32 greenhouse gas emission reductions. Furthermore, the electricity generated from small-scale (less than 1 megawatt) 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.

The reported in-state coal generation includes an accounting change from previous Net System Power Reports. Past reports included the generation from the Intermountain Power Plant with the in-state values because it is remotely dispatched by the Los Angeles Department of Water and Power control operator, even though this facility is located in Utah. **Table 2** now includes generation from this facility as a Southwest import to more accurately reflect the geographic boundaries of where the electricity is generated.

Table 2: 2007 Total System Power in Gigawatt Hours

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	45.2%
Nuclear	35,692	629	8,535	44,856	14.8%
Renewables	28,463	6,393	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, QFER and SB 105 Reporting Requirements

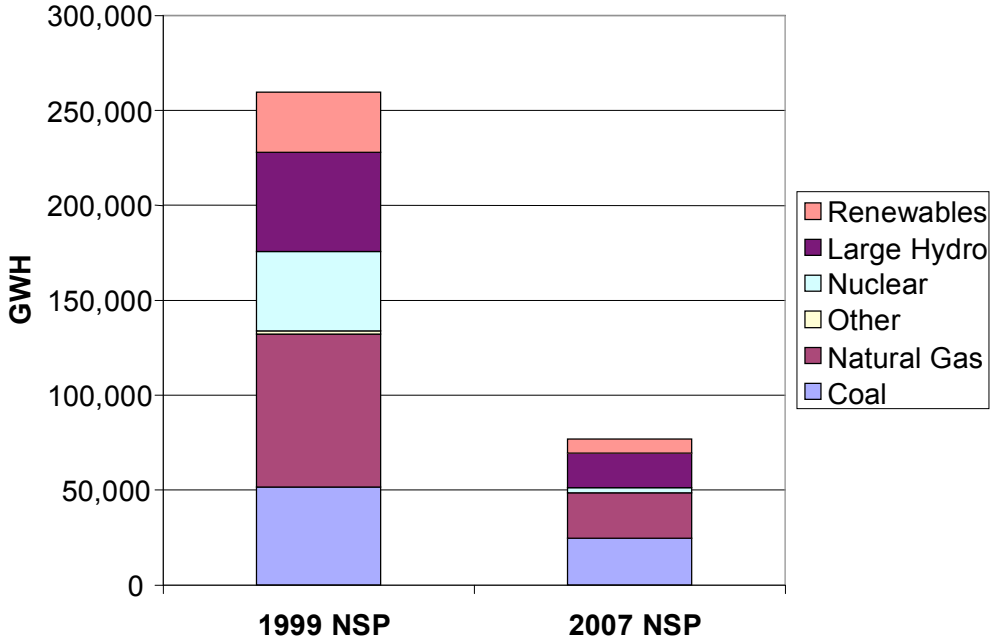
*Note: In earlier years the in-state coal number included coal fired power plants owned by California utilities.

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 2007. Although the volume of the net system power is lower in 2007, **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 2007 compared to 1999 when all other in-state generation was a large part of the mix. The methodology to estimate the resource mix of unspecified imports now has a more direct influence on the net system power calculations.

Figure 2: Net System Power Becomes Smaller 1999-2007



These two developments result in greater divergence between net system power and total system power. **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 NSP erroneously shows that coal generation represents 32 percent of the statewide mix instead of the 17 percent shown in the TSP mix and that renewable generation is incorrectly reflected as 10 percent of the state's resource mix instead of 12 percent.

Figure 3: Natural Gas and Coal Shares of Net System Power Mix Become Larger 1999-2007

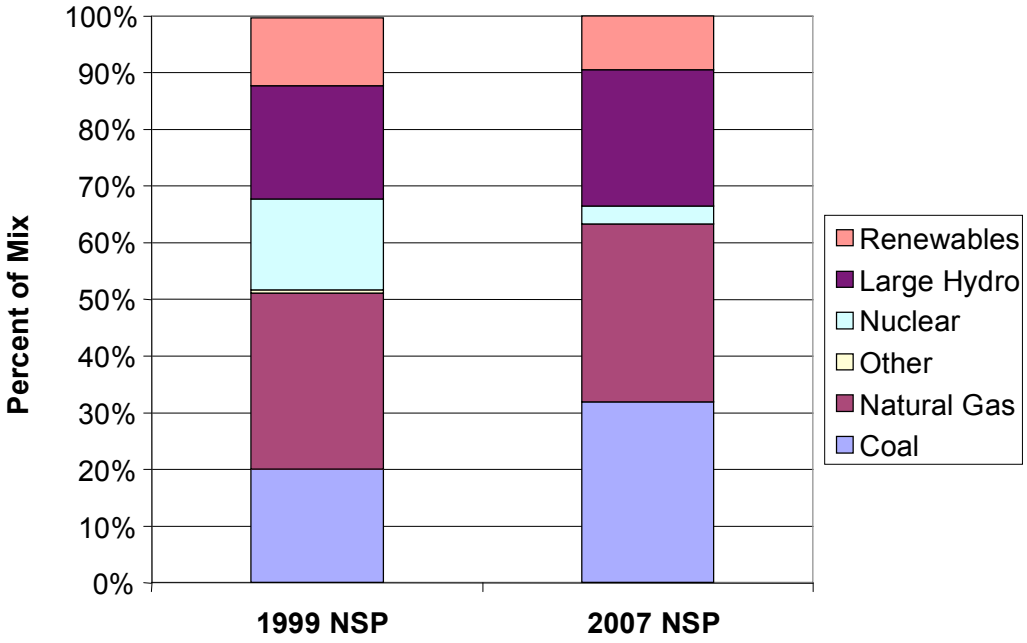


Table 3: 2007 Comparison of Net System Power and Total System Power

Fuel Type	NSP	TSP
Coal	32%	17%
Large Hydro	24%	12%
Natural Gas	31%	45%
Nuclear	3%	15%
Renewables	10%	12%

The Power Content Label in its current form provides a disservice to the public because the information listed does not allow consumers to monitor progress towards California's Renewable 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 are not reflected in the Power Content Labels. Consequently, parties reviewing Power Content Labels may believe that the labels represent accuracy in progress 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.

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 in which power was procured from, kilowatt hours procured by generating facilities, total kilowatt hours purchased, kilowatt hours resold or consumed on-site, and the resultant calculation of net specific purchases. Additionally, retail providers are required to provide a kilowatt-hour 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 in the case of 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 of each year.

For 2007, the Energy Commission has received specific purchases information from the following retail providers:

3 Phases
City of Anaheim
Azuza Light and Water
City of Lodi
City of Needles
City of Palo Alto
Redding Electric Utility
City of Shasta Lake
Coral Power
Eastside Power Authority
Golden State/Bear Valley Electric
Imperial Irrigation District
Los Angeles Department of Water and Power
Pacific Gas and Electric
Plumas-Sierra Rural Electric Cooperative
Power and Water Resources Pooling Authority
San Diego Gas and Electric
Southern California Edison
Sempra Energy
Sacramento Municipal Utility District
Surprise Valley Electrification Corporation
Turlock Irrigation District
Valley Electric Association

The following retail providers claimed specific purchases in 2007, but did not submit annual reports on time. For these retail providers, 2006 specific purchases totals were used as placeholders:

Alameda Power and Telecom
APS Energy Services
Burbank Water and Power
Biggs Municipal Utilities
City of Healdsburg
Roseville Electric
Silicon Valley Power
Merced Irrigation District
Modesto Irrigation District
Pasadena Water and Power
City of Riverside
Escondido

The following retail providers claimed have made specific purchases claims but have not submitted Annual Reports for 2006 and 2007:

City of Colton
City of Ukiah

The following retail providers use Net System Power for their Power Content Labels:

PacificCorp
Sierra Pacific Power Corporation
City of Banning
Glendale Water and Power
Gridley Electric Utility
City of Lompoc
Truckee Donner Public Utilities District
City of Vernon

The following retail providers have not provided label information to the Energy Commission:

Anza Electric Cooperative, Inc.
Mountain Utilities (Kirkwood)
Lassen Municipal Utility District
Trinity Public Utilities District
City of Pittsburg/Island Energy
Moreno Valley Utility
City of Corona, Department of Water and Power
City and County of San Francisco

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 of the report 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. Generators that do not report information to control area operators, but whose electricity is being claimed as a specific purchase, must report this data directly to the Energy Commission. Control area operators must then make the generation and fuel source information available to the Energy Commission for the dual purposes of verifying information disclosed to consumers and calculating net system power.

California control area operators are also required to report to the Energy Commission the annual amounts of electricity crossing California's borders as imports and exports. Since electricity is not a traditional commodity in the same sense as natural gas or crude oil, the ability to use similar accounting principles for totaling metered electric generation ignores that electricity is instantaneous in nature and cannot be stored. Generally, California tends to import electricity during the day to meet peak load requirements and exports electricity during off-peak times to help other states meet their load requirements. For the purposes of the *2007 Net System Power Report*, imports are reduced by these exports to reflect a net import requirement for California. While not perfect, the method is at least transparent.

To reflect contractual obligations, control area abilities, and ownership interests in generating plants, 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. Generation from British Columbia Hydro was also added to the northwest resource mix averages since electricity from their system is typically sold to California. Appendix A contains additional details on these calculations.

This calculation approach to first quantify specified imports is a modification to the resource mix estimates from previous Net System Power Reports. The past reports did not separate the specified imports, but instead applied the regional averages to all of the metered net imports. The current accounting method is more accurate since it captures actual transactions from certain generation facilities, such as the Palo Verde nuclear

station and imports from renewable technology contracts. Since the generation from the nuclear and renewable facilities represents a low percentage of the regional mix, applying averages to imports resulted in lower generation than what was reported in previous Power Source Disclosure filings. Distinguishing between specified and unspecified imports resolves this problem and is more consistent with the accounting methodology used by California Air Resource Board for calculating the California greenhouse gas emissions inventory.

The averaging approach tends to overstate the amount of electricity imports from other out-of-state baseload generators. Using the average mix methodology 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. The baseload generator is likely committed to serving the utility's own customers because it is typically the lowest cost resource. Under the average power mix method, however, the out-of-state utility is assumed to export a portion of its share of baseload generation to serve California consumers. Alternative accounting methodologies can result in a different mix of generation resources serving electricity imports.

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 a workable 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 PowerTable 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.

Table 4: 2007 Net System Power (NSP) in Gigawatt Hours

Fuel Type	TSP	Claims	Self-Gen	NSP	NSP %
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	(27,062)	(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%
Total	302,072	(205,774)	(19,573)	76,725	100.0%

Source: EIA, QFER and SB 105 Reporting Requirements

Summary

Retailers must disclose to their customers 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 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 its report. This report represents the results of data collected for electricity generation and specific purchases in 2007.

Findings

1) 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.

2) Consumers interested in monitoring the state's progress towards achieving the Renewables Portfolio Standard should use the Total System Power table.

Appendix A

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. 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 percent 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 2007 (EIA Forms 906 and 920)). Generation for British Columbia Hydro and Termoelectrica de Mexicali 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. From reported regional WECC generation by resource type, claims of specific purchases based on contracts by California energy service providers were subtracted. The net value provided an estimate of power used outside of California, plus deliveries to California that were not included in the claims of specific purchases. Based on this net generation (regional total less claims of specific purchases delivered to California) the percent of generation based on each resource type was calculated. These percentages were applied to the adjusted net deliveries (imports) to California as reported by the California balancing authorities (control areas). Adjustments were needed because a few generators are physically located outside California, but are under the control of California balancing authorities.

For each resource type, the regional imports were the total of the regional specified claims plus the non-specified imports times a factor representing the non-specified share of generation for that fuel type.

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: 2007 Utilities Claims by Region (Gigawatt Hours)

Fuel Type	Total Claims	California Claims	NW Claims	SW Claims
Coal	24,446	2,343	925	21,178
Large Hydro	16,833	15,491	-	1,342
Natural Gas	94,985	91,402	-	3,583
Nuclear	42,447	37,417	-	5,030
Renewables	27,062	24,698	1,902	463
Biomass	5,077	4,338	739	-
Geothermal	11,682	11,219	-	463
Small Hydro	4,001	3,385	616	-
Solar	670	670	-	-
Wind	5,633	5,086	547	-
Total	205,774	171,351	2,827	31,596

Table A-2 separates California's utility claims for fuel-specific electric generation from 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: 2007 Northwest Power Imports Reconciliation (Gigawatt Hours)

Fuel Type	Total NW Imports	California Utility Claims for NW Power Imports	Estimated Non-Specified NW Power Imports
Coal	6,546	925	5,621
Large Hydro	9,263	-	9,263
Natural Gas	1,837	-	1,838
Nuclear	630	-	630
Renewables	6,393	1,902	4,491
Biomass	836	739	97
Geothermal	-	-	-
Small Hydro	4,700	616	4,084
Solar	-	-	-
Wind	857	547	310
Total	24,669	2,827	21,842

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: 2007 Southwest Power Imports Reconciliation (Gigawatt Hours)

Fuel Type	Total SW Imports	California Utility Claims for SW Power Imports	Estimated Non- Specified SW Power Imports
Coal	39,275	21,178	18,097
Large Hydro	2,686	1,342	1,344
Natural Gas	16,363	3,583	12,780
Nuclear	8,535	5,030	3,505
Renewables	688	463	225
Biomass	1	-	1
Geothermal	440	463	(23)
Small Hydro	18	-	18
Solar	7	-	7
Wind	222	-	222
Total	67,547	31,596	35,951

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 (Gigawatt Hours)

Fuel Type	Northwest Production	Percent	Southwest Production	Percent
Coal	73,379	25.8%	133,500	52.4%
Large Hydro	119,383	42.0%	9,681	3.8%
Natural Gas	23,684	8.3%	82,902	32.5%
Nuclear	8,109	2.9%	26,782	10.5%
Renewables	59,787	21.0%	1,861	0.7%
Biomass	1,998	0.7%	7	0.0%
Geothermal	-	0.0%	320	0.1%
Small Hydro	53,251	18.7%	111	0.0%
Solar	-	0.0%	44	0.0%
Wind	4,537	1.6%	1,380	0.5%
Other*	99	0.0%	161	0.1%
Total	284,439	100.0%	254,887	100.0%

*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 (Gigawatt Hours)

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	73,379	925	72,454	25.7%	5,621	6,546
Large Hydro	119,383	-	119,383	42.4%	9,263	9,263
Natural Gas	23,684	-	23,684	8.4%	1,837	1,837
Nuclear	8,109	-	8,109	2.9%	630	630
Renewables	59,787	1,902	57,885	20.6%	4,491	6,393
Biomass	1,998	739	1,259	0.4%	97	836
Geothermal	-	-	-	0.0%	-	-
Small Hydro	53,251	616	52,635	18.7%	4,084	4,700
Solar	-	-	-	0.0%	-	-
Wind	4,537	547	3,990	1.4%	310	857
Total	284,340	2,827	281,513	100.0%	21,842	24,669*

*Note: Net Imports into California from Northwest = 24,669 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 (Gigawatt Hours)

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	133,500	21,178	112,322	50.3%	18,097	39,275
Large Hydro	9,681	1,342	8,339	3.7%	1,344	2,686
Natural Gas	82,902	3,583	79,318	35.5%	12,780	16,363
Nuclear	26,782	5,030	21,752	9.7%	3,505	8,535
Renewables	1,861	463	1,398	0.6%	225	688
Biomass	7	-	7	0.0%	1	1
Geothermal	320	463	(143)	-0.1%	(23)	440
Small Hydro	111	-	111	0.0%	18	18
Solar	44	-	44	0.0%	7	7
Wind	1,380	-	1,380	0.6%	222	222
Total	254,726	31,596	223,130	100.0%	35,951	67,547*

*Note: Net Imports into California from Southwest = 67,547 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 Mix ("California Power Mix").

Table A-7: 2007 Net System Power Reconciliation (Gigawatt Hours)

Fuel Type	Total California Generation Excluding Self Generation (A)	California Utility Claims for California Generation (B)	California Non-Specified Generation (C) = (A) - (B)	Estimated Non-Specified SW Power Imports (D)	Estimated Non-Specified NW Power Imports (E)	NSP (C) + (D) + (E)	Percent
Coal	3,041	2,343	698	18,097	5,621	24,416	31.9%
LargeHydro	23,283	15,491	7,792	1,344	9,263	18,399	24.0%
NaturalGas	100,899	91,402	9,497	12,780	1,837	24,114	31.4%
Nuclear	35,692	37,417	(1,725)	3,505	630	2,410	3.1%
Renewables	27,368	24,698	2,670	225	4,491	7,386	9.6%
Biomass	4,306	4,338	(32)	1	97	66	0.1%
Geothermal	12,999	11,219	1,780	(23)	-	1,757	2.3%
SmallHydro	3,672	3,385	287	18	4,084	4,389	5.7%
Solar	668	670	(2)	7	-	5	0.0%
Wind	5,723	5,086	637	222	310	1,169	1.5%
Total	190,283	171,351	18,932	35,951	21,842	76,725	100.0%