



California Electricity Demand and Supply Outlook

*Presentation to the
Committee on Regional Electric Power Cooperation*

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California Energy Commission
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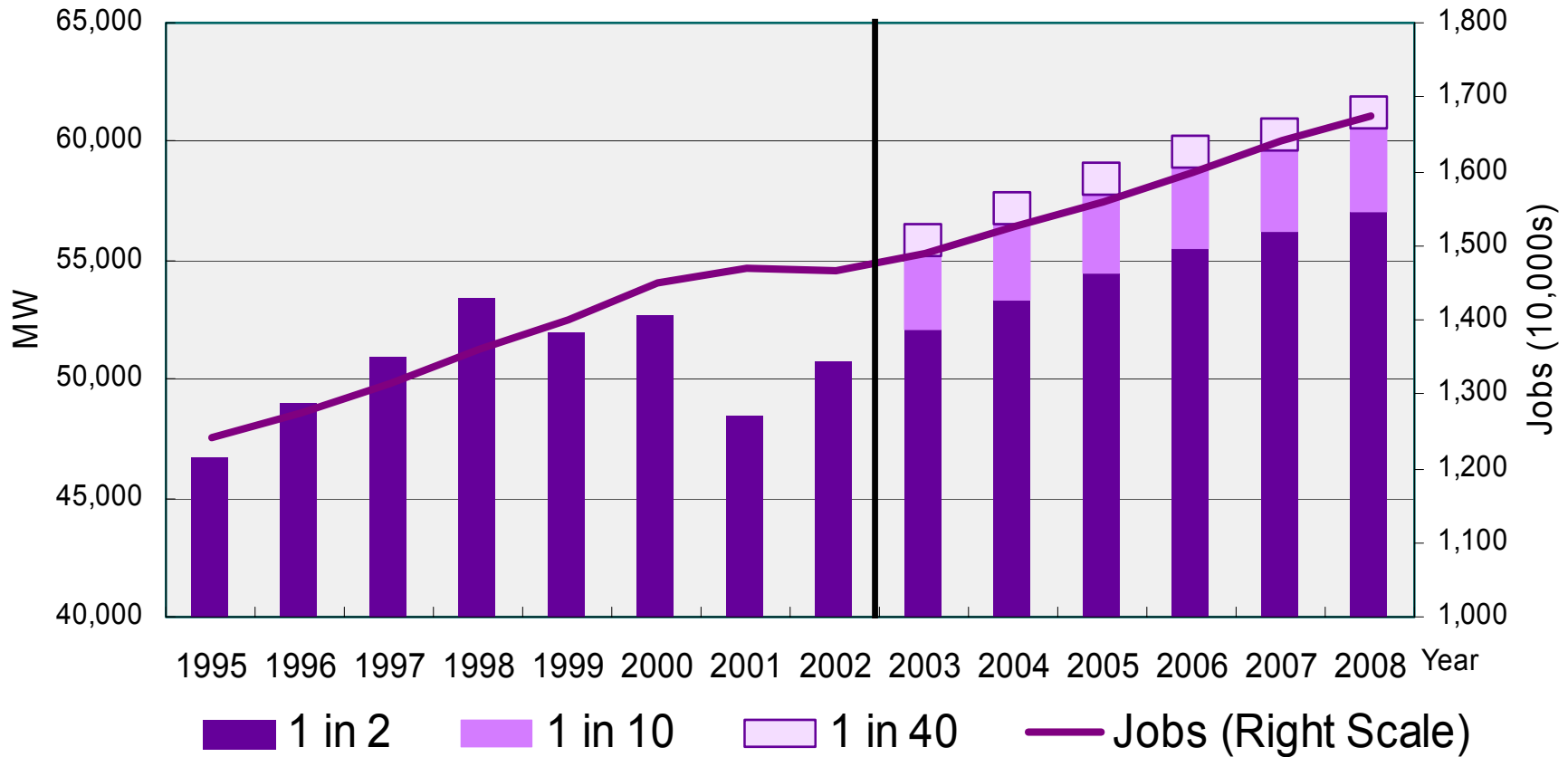
Existing Situation

- **CEC adopted its planning/policy report in November 2003**
- **CPUC adopted its procurement decision in January 2004**
- **Coordination and implementation efforts are underway**
- **In the meantime, power plant owners are making decisions**



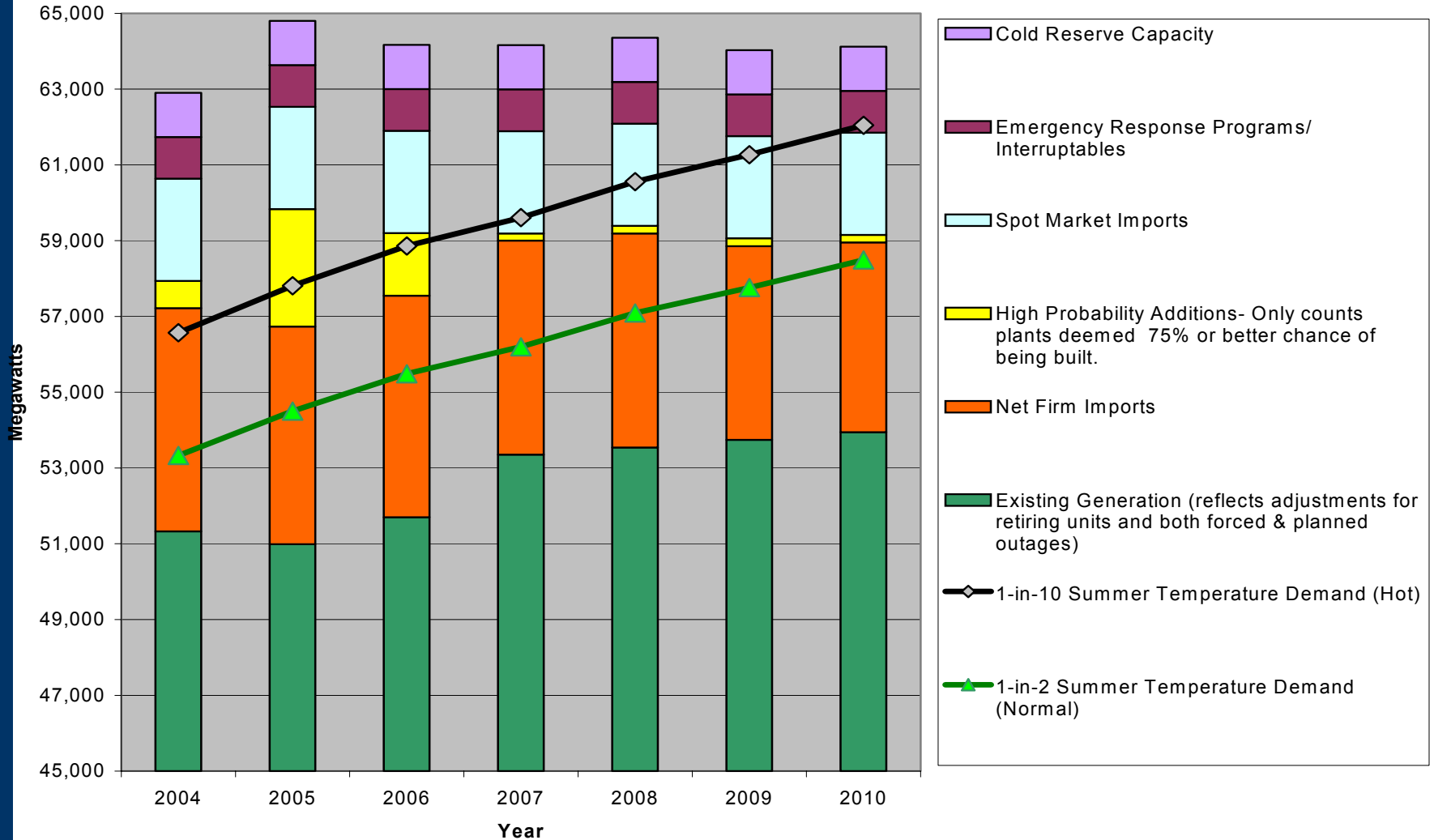
Electricity Demand Trends

Statewide Coincident Peak Demand (MW)





Supply/Demand Balance





Planning Reserve Calculation

	<u>Aug 2004</u>	<u>Aug 2005</u>	<u>Aug 2006</u>	<u>Aug 2007</u>	<u>Aug 2008</u>	<u>Aug 2009</u>	<u>Aug 2010</u>
Existing Generation	56,267	55,789	57,835	57,102	57,291	57,490	57,695
Retirements ¹	-1,191	-1,054	-2,385	0	0	0	0
Net Firm Imports ^{2,3}	5,895	5,748	5,848	5,648	5,648	5,115	5,009
High Probability Additions ⁴	713	3,100	1,652	189	199	205	198
Total Planning Supply (MW)	61,684	63,583	62,950	62,939	63,138	62,811	62,903
Demand (revised June 2003):							
1-in-2 Summer Temperature Demand (Normal)	53,331	54,500	55,487	56,195	57,090	57,757	58,491
Projected Planning Reserve ^{4,5}	15.7%	16.7%	13.4%	12.0%	10.6%	8.7%	7.5%
Projected Planning Reserve includes accelerated programs ^{6,7}	17.2%	19.0%	16.6%	16.4%	15.4%	13.9%	13.0%

¹ Retirements on 2006 include 1,250 MW Generic Retirements. ² Net firm imports are based on 2003 estimate. ³ CEC recognizes that South Bay Units 1-4 will retire prior to summer 2009. We assume these plants will be replaced. No new firm imports are assumed so contract expirations reduce net firm imports over time with exception of 2006 where 100 MW export contract expires. This causes Net Firm Imports to increase 100 MW in 2006.

⁴ This planning reserve does not include expected RPS renewable resource additions.

⁵ Planning reserve of 15% or greater is not maintained beginning in 2006 unless new resources are added.

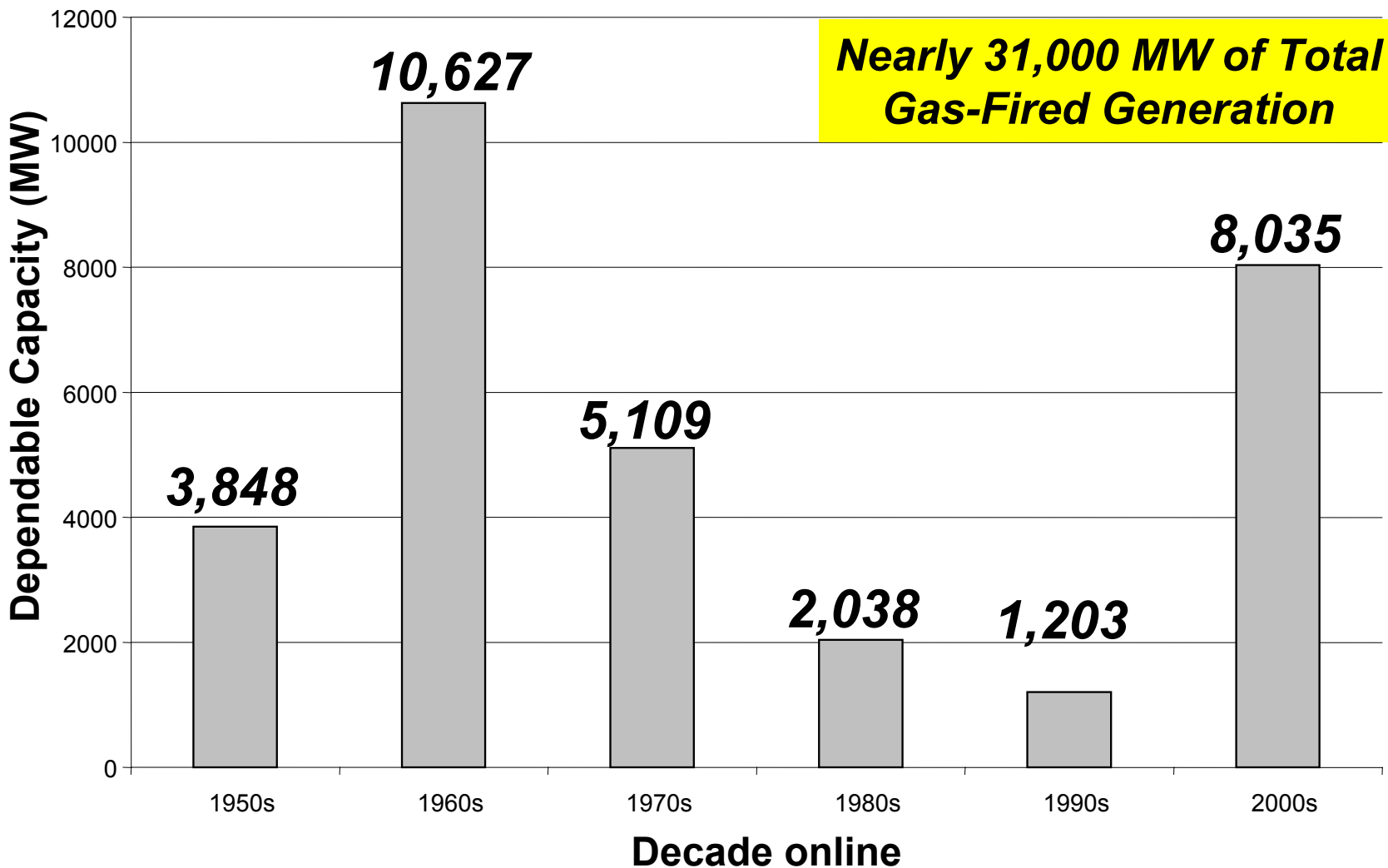
⁶ Includes potential capacity additions derived from emergency response/interruptibles, price responsive demand programs adopted by the CPUC, incremental new renewables from Energy Action Plan, and High DSM Peak Demand Reduction Scenario.

⁷ With Accelerated Programs, Planning Reserve of 15% or greater is not maintained beginning in 2009 unless new resources are added.

Capacity from Plants placed on Cold Reserve Status	1,167	1,167	1,167	1,167	1,167	1,167	1,167
Emergency Response Programs/ Interruptibles	1,102	1,102	1,102	1,102	1,102	1,102	1,102



California's Natural Gas Power Plants Are Aging





Plant Retirement Issues

- Market forces are currently working to retire uneconomic plants.
- Not all aging power plants are a problem.
- Resource Adequacy requirements are one way to mitigate reliability concerns.
- Aging Power Plant Study to be conducted as part of 2004 IEPR update.



CONCLUSIONS

- **Basic Framework for a resource adequacy requirement has been adopted**
- **Parties are currently fleshing out details for implementation by 2006**
- **Efforts to implementation “soft” resource additions are critical**
- **Even with all of these additions, further resources must come on line by 2009**
- **Retirement of existing fossil facilities highly affected by price and duration of LSE contracts**



Supply/Demand Balance

	Aug 2004	Aug 2005	Aug 2006	Aug 2007	Aug 2008	Aug 2009	Aug 2010
Existing Generation	56,267	55,789	57,835	57,102	57,291	57,490	57,695
Forced and Planned Outages ¹	-3,750	-3,750	-3,750	-3,750	-3,750	-3,750	-3,750
Retirements ³	-1,191	-1,054	-2,385	0	0	0	0
Net Firm Imports ^{1,3}	5,895	5,748	5,848	5,648	5,648	5,115	5,009
High Probability CA Additions	713	3,100	1,652	189	199	205	198
Spot Market Imports	2,700	2,700	2,700	2,700	2,700	2,700	2,700
Total Supply (MW)	60,634	62,533	61,900	61,889	62,088	61,761	61,852
1-in-2 Summer Temperature Demand (Normal)	53,331	54,500	55,487	56,195	57,090	57,757	58,491
Projected Operating Reserve (1-in-2) ⁴	13.7%	14.7%	11.6%	10.1%	8.8%	6.9%	5.7%
1-in-10 Summer Temperature Demand (Hot)	56,571	57,811	58,858	59,609	60,559	61,266	62,044
Projected Operating Reserve (1-in-10) ⁴	7.2%	8.2%	5.2%	3.8%	2.5%	0.8%	-0.3%
Projected Planning Reserve ⁴	15.7%	16.7%	13.4%	12.0%	10.6%	8.7%	7.5%
Projected Planning Reserve -Accelerated Programs ⁵	17.2%	19.0%	16.6%	16.4%	15.4%	13.9%	13.0%

Notes: ¹ Forced and planned outages and Net Firm Imports estimates based on historic data. ² In 2005 and 2006 there are respectively 750 MW and 1250 MW of generic retirements to reflect additional capacity deemed to be at risk for retirement. In addition, CEC recognizes that South Bay Units 1-4 will retire prior to summer 2009. However, since these units are needed for reliability, we assume these plant's capacity will be replaced without interruption. ³ No new firm imports are assumed so contract expirations reduce net firm imports over time with exception of 2006 where 100MW export contract expires. This causes Net Firm Imports to increase 100MW in 2006. ⁴ These reserves do not consider potential capacity additions derived from price responsive demand programs adopted by the CPUC, incremental new renewables from Energy Action Plan or High DSM Peak Demand Reduction Scenario. ⁵ Includes potential capacity additions from Energy Action Plan or High DSM Peak Demand Reduction Scenario. ⁶ Duke and Reliant have put a combined total of 1167 MW of capacity into cold reserve status. These plants may be able to be brought online with 6 month's advance notice. ⁷ Emergency Response Programs / Interruptibles not included in planning reserve or operating reserve calculations.

Capacity from Plants on Cold Reserve Status ⁶	1,167	1,167	1,167	1,167	1,167	1,167	1,167
Emergency Response Programs/ Interruptibles ⁷	1,102	1,102	1,102	1,102	1,102	1,102	1,102



Potential Energy Savings and Generation Additions from Demand Reduction, Demand Response, and Renewable Generation Program Goals

	2004	2005	2006	2007	2008	2009	2010
	<i>Megawatts</i>						
High DSM Scenario Peak Demand Reduction	1	145	414	712	983	1,205	1,395
Incremental New Renewables Goals of Energy Action Plan ¹	36	50	145	246	352	461	567
Demand response goals from D-03-06-032 ²	859	1,125	1,522	1,925	1,965	1,972	2,006
Total (MW)	896	1,320	2,081	2,883	3,300	3,638	3,968

1. Dependable Capacity during Peak Hours

2. CPUC Interim Opinion In Phase 1 Addressing Demand Response Goals And Adopting Tariffs And Programs For Large Customers