

# California Public Utilities Commission



Progress of

## The California Renewable Portfolio Standard As Required by the Supplemental Report of the 2006 Budget Act



Report to the Legislature

January 2007

## **California's Renewable Portfolio Standard (RPS) is one of the most ambitious renewable energy standards in the country**

Established in 2002 under Senate Bill 1078 and accelerated in 2006 under Senate Bill 107, California's RPS obligates investor-owned utilities (IOUs), energy service providers (ESPs) and community choice aggregators (CCAs) to procure an additional 1% of retail sales per year from eligible renewable sources until 20% is reached, no later than 2010. The California Public Utilities Commission (CPUC) and California Energy Commission (CEC) are jointly responsible for implementing the program.

## **Utilities are making steady progress towards ambitious 20% by 2010 goal**

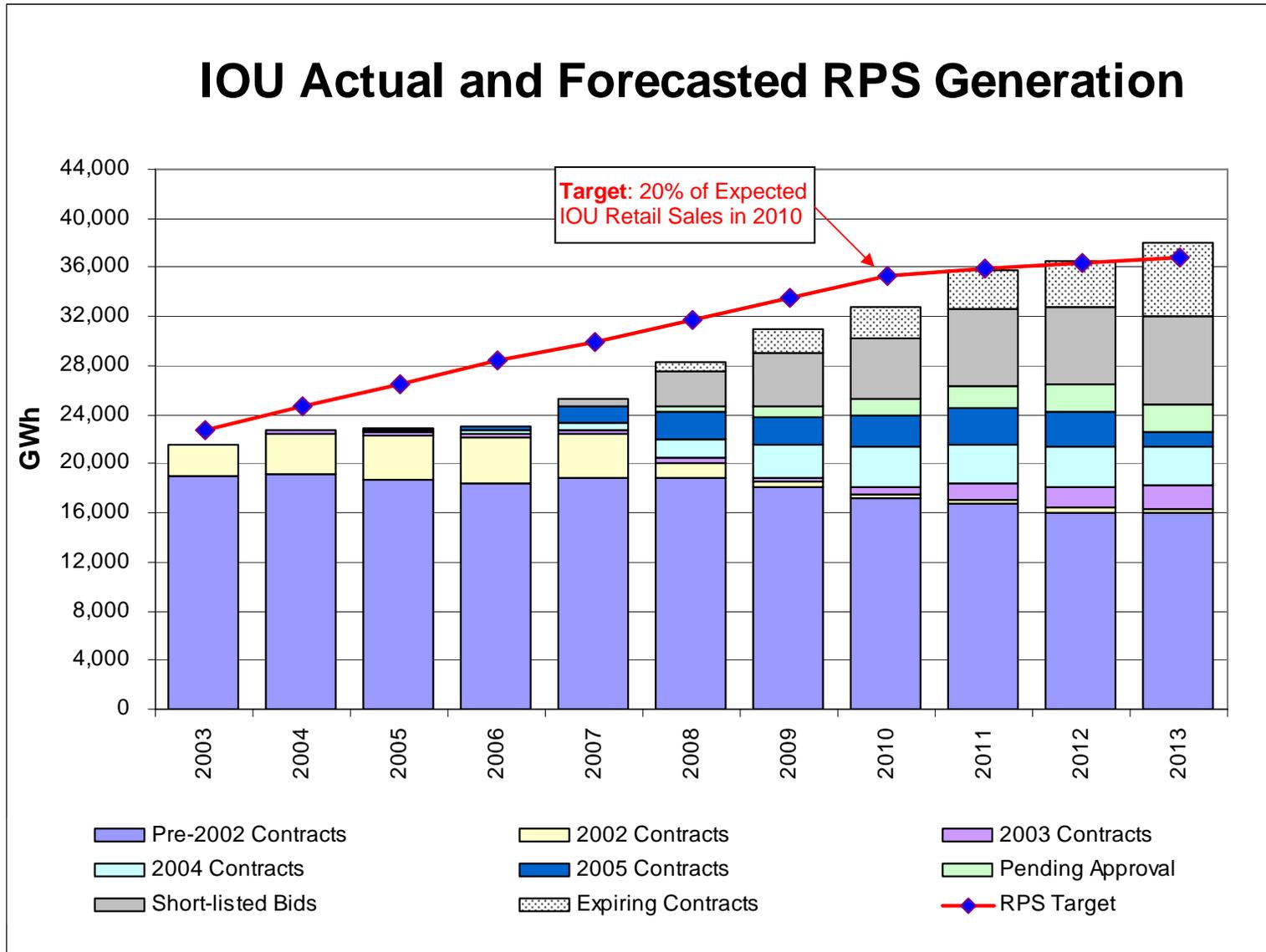
In 2005, actual renewable deliveries stood at 13.5%, 17.7%, and 5.5% of the retail sales of California's three large utilities: Pacific Gas & Electric, Southern California Edison, and San Diego Gas & Electric, respectively. These IOUs are actively signing contracts for more RPS generation, but, pursuant to RPS legislation, the CPUC uses actual deliveries, not contracted capacity, as the metric to determine RPS compliance. The IOUs are closing in on the 20% target, with 4 years of procurement ahead. Each IOU also has short-listed 2005 and 2006 bids and contracts pending approval at the CPUC that represent a significant *potential* increase in RPS generation.

Figure 1, on the next page, is a forecast of RPS generation to 2013 which includes (1) actual generation, (2) projected generation from signed contracts, (3) projected generation from contracts seeking CPUC approval, and (4) projected generation from 2005 short-listed contracts.

### **Important points:**

- Figure 1 is not a probabilistic assessment of renewable generation each year – it is a forecast showing contracted and short-listed generation to date
- Forecast reflects only minimum energy deliveries; many contracts and short-listed bids include options for the developer or IOU to increase a project's generation
- Annual RPS targets are calculated using CEC's 2005 IEPR retail sales forecast; actual RPS targets will depend upon CPUC determination of annual procurement targets and consumer choices re: direct access and community choice aggregation, etc.
- Forecast does not assume a percentage of contract failure - see pages 7 and 8 for more details
- Forecast is based on the most recent scheduled completion dates for required transmission upgrades
- "Expiring contracts" are included – these contracts represent built RPS capacity, and it is reasonable to assume that they will be re-contracted

Figure 1.<sup>1</sup>



<sup>1</sup> Compared to the chart included in the October 2006 Report to the Legislature, this chart shows a larger gap between contracted RPS energy in 2010 and the RPS target for that year. This change is due mainly to an upward revision of retail sales forecasts and updated information on the status of individual projects.

## CA utilities are aggressively procuring renewables

PG&E, SCE, and SDG&E first solicited offers for RPS eligible energy in 2002 and 2003, under an interim authority the CPUC established in anticipation of the RPS taking effect in 2003. In 2004, the first annual RPS solicitation was held, followed by solicitations in 2005 and 2006. The 2007 solicitation is expected to begin in early 2007. In sum, the RPS and interim solicitations, as well as a few instances of bilateral negotiation, have resulted in 62 contracts approved by the CPUC<sup>2</sup>. Table 1 provides more detail for each utility:

**Table 1.**

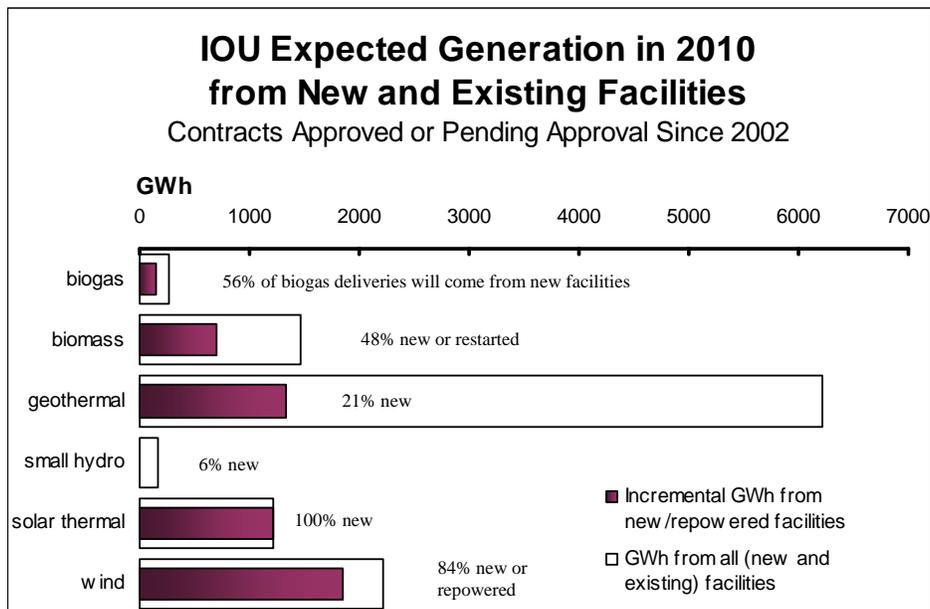
Year*	PG&E	SCE	SDG&E
2002	4 contracts (119 MW)	5 contracts (268 MW)	15 contracts (239 MW)
2003	3 contracts (44 MW)	8 contracts (664 MW)	1 contract (40 MW)
2004	6 contracts (371 MW)	0 contracts	6 contracts (580 MW)
2005	9 contracts (198 MW)	4 contracts (37 MW)	0 contracts
2006	1 contracts (200 MW)	0 contracts	0 contracts
<b>Total</b>	<b>23 contracts (932 MW)</b>	<b>17 contracts (969 MW)</b>	<b>22 contracts (859 MW)</b>

\* Solicitation year or year of bilateral negotiation

## New generation accounts for almost half of contracts since 2002

A stated goal of the RPS legislation is to spur development of new renewable energy generation in California. As evidenced by Figures 2 and 3 below, facilities existing prior to 2002 play a significant role in meeting the 20% target by 2010. However, 46% (5,276 GWh) of the energy expected in 2010 from contracts approved and pending approval since 2002, will come from new, restarted, or repowered projects.

**Figure 2.**

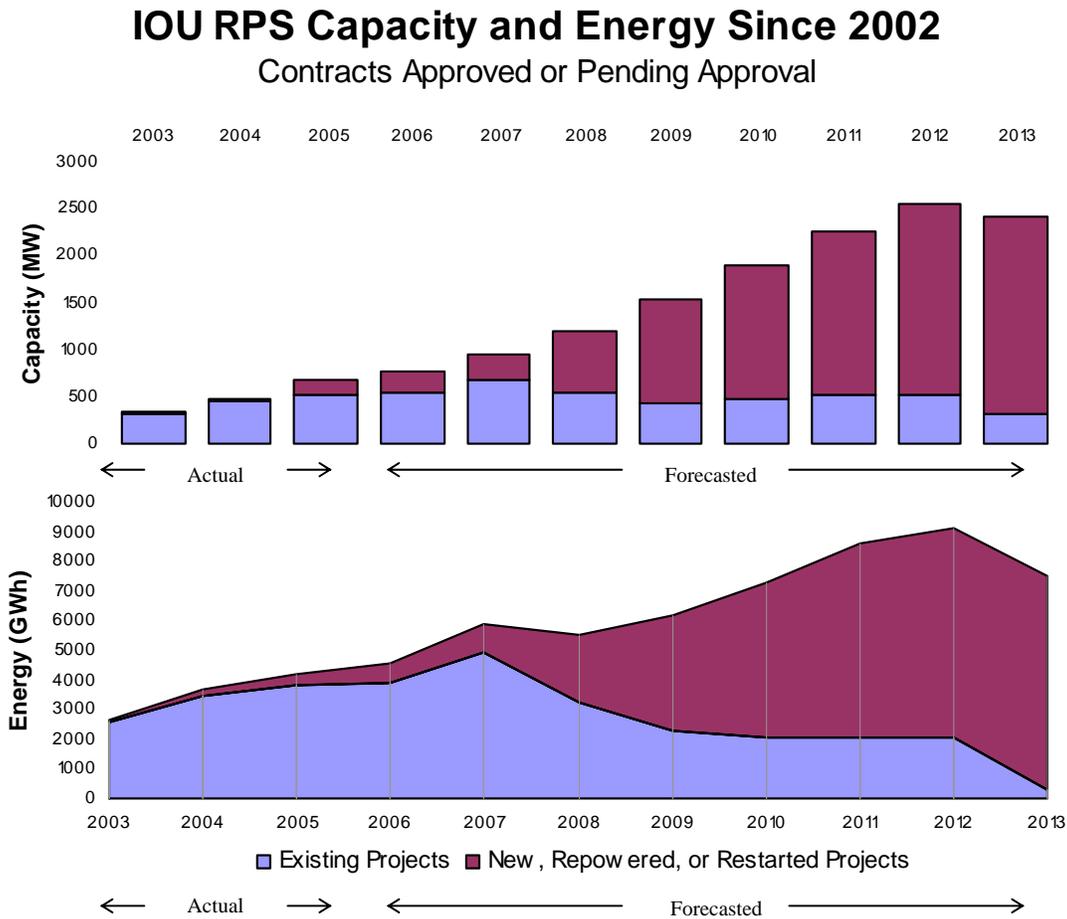


<sup>2</sup> 6 of these contracts, totaling 104 MW, were later canceled. One additional contract was later renegotiated and replaced.

**Important points:**

- Significant amounts of new geothermal, solar thermal, and wind capacity are expected to be online by 2010
- Much of the new generation will need to overcome technology-specific challenges. For instance, a significant amount of wind generation is constrained by transmission and wind turbine availability, and solar thermal technology faces uncertainty regarding large-scale commercial deployment.

**Figure 3.**



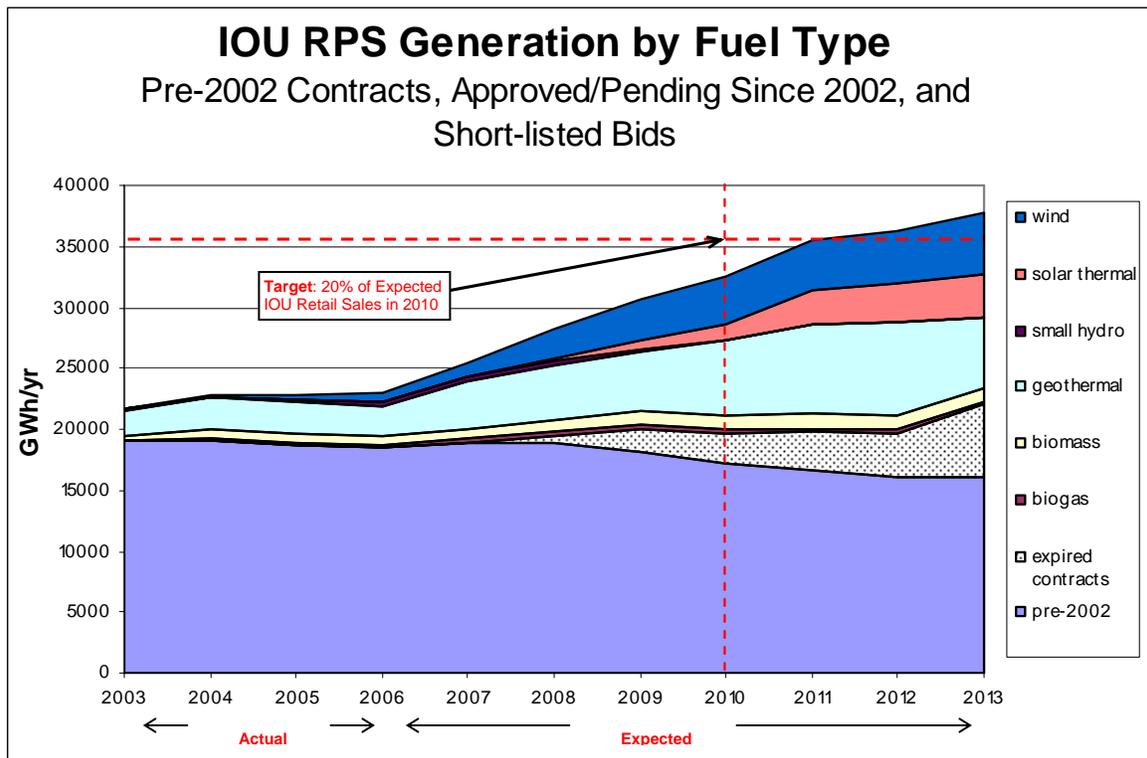
**Important points:**

- Assuming that transmission is available, it takes 2-5 years to bring a project online.
- Figure 3 shows an increasing amount of new capacity coming online.
- The drop-off in 2013 is due to expiring contracts, not a decrease in built RPS capacity. It is expected that these contracts will be re-signed.

## RPS Energy is supplied by a variety of technologies, but wind and geothermal are dominant

A variety of resources are RPS-eligible<sup>3</sup>: biomass, biodiesel, digester gas, landfill gas, municipal solid waste, fuel cells using renewable fuels, geothermal, small hydro, ocean wave, ocean thermal, tidal current, solar thermal, photovoltaic, and wind. Many of these resources are represented in RPS contracts, but geothermal and wind resources are set to provide the majority of RPS generation in 2010.

Figure 4.



### Important points:

- Forecast includes energy from approved, pending, and short-listed RPS projects (including pre-2002 contracts)
- The majority of 2010 RPS generation is to come from geothermal and wind resources.
- 2013 geothermal deliveries drop because of expiring contracts, which are then reflected in the “expired contracts” category for that year

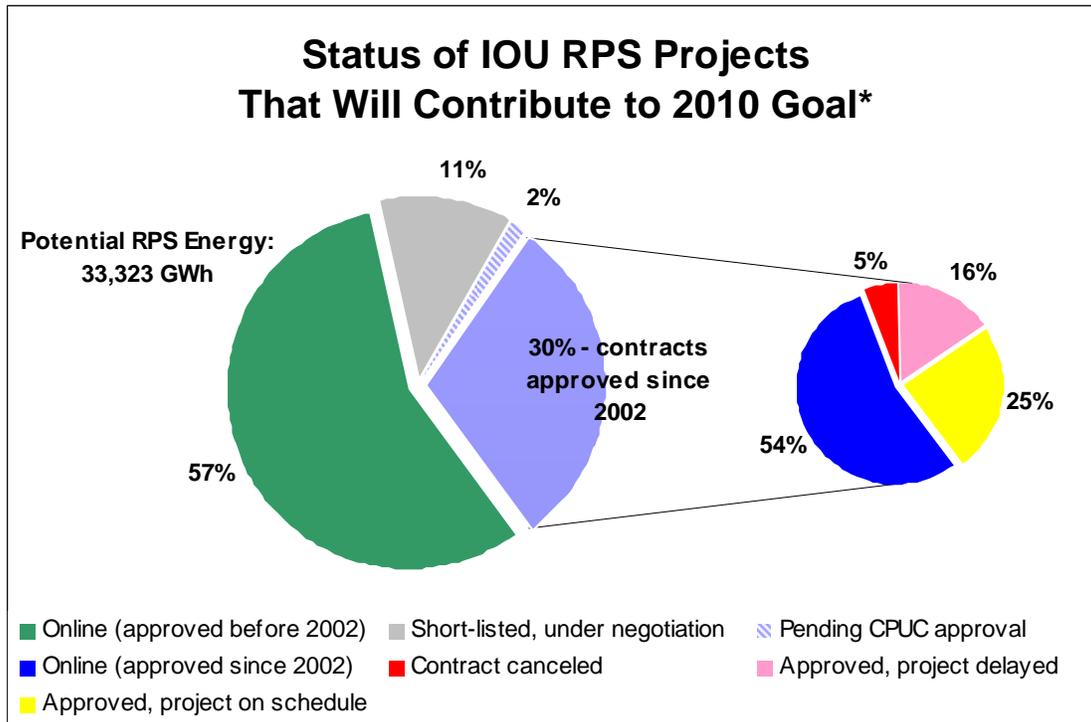
<sup>3</sup> CEC is responsible for certifying renewable technologies and individual facilities as RPS-eligible.

### Ensuring project viability is critical to achieving RPS goals

There is project development risk associated with any new generation facility, conventional or renewable. Thus, until a facility is online, predicting its project viability is a subjective and difficult task. The CPUC works to ensure that the RPS contracts it approves represent viable projects, but some risk will always remain.

After approving a contract, the CPUC tracks the project's progress in meeting its milestones, and concurrently, strives to facilitate project development by ensuring adequate transmission is being built in a timely fashion. The CPUC is less able, however, to mitigate risk posed by such factors as deployment of new technology and permitting by other governmental agencies. Ultimately, it is the responsibility of the RPS-obligated load-serving entities to achieve the 20% by 2010 goal by procuring from viable renewable projects.

Figure 5.



\* assumes re-signing of contracts that expire before 2010

#### Important points:

- Significant portion of expected RPS generation (56%) in 2010 will come from contracts approved prior to 2002
- Chart assumes that 100% of expiring contracts will be re-signed, which is not unrealistic. Even if not re-signed by an IOU, the contracts will likely be re-signed somewhere in California, and will benefit California ratepayers
- Projects delayed beyond 2010 are not reflected in chart – transmission is major cause of delay

### Few RPS Contracts Have Been Cancelled

Contract cancellation rate for the post-2002 contracts is low (6%). The cancelled contracts were from the 2002/2003 interim RPS solicitations and were relatively small projects. Table 3 below identifies the cancelled projects and the reason for the cancellation.

**Table 3.**

IOU	Solicitation	Facility Name	Technology	MW	Financing	Permitting	Fuel Rights	Timing of Production Tax Credit renewal
SDGE	2002	Energy Unlimited	wind	16.9				✓
SDGE	2002	Syracuse Power Co. (Otay)	biogas	3.12			✓	
SDGE	2002	Syracuse Power Co. (Sycamore)	biogas	3.12			✓	
SDGE	2002	GRS (San Marcos)	biogas	1			✓	
SDGE	2002	Envirepel	biomass	40	✓	✓		
SDGE	2003	Alta Mesa Project - Phase IV	wind	40				✓