



*2<sup>nd</sup> Annual California Biomass Collaborative Forum*

**Results of California's Renewable  
Energy Program and Agricultural  
Biomass to Energy Program (SB704)**

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**California Energy Commission**

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## Today's Topics

- Agricultural Biomass to Energy Program
- Overall Renewable Energy Program
- Biomass “specific” Results





# Agricultural Biomass to Energy Program Overview

- SB 704 adopted September 22, 2003
- Provided \$6 million in funding from Renewable Energy Program
- Funding to improve air quality by reducing the amount of agricultural fuels that are open-field burned
- Guidelines adopted February 18, 2004
- Incentive of \$10 per dry ton of qualified agricultural biomass
- Funding for qualified purchases from July 1, 2003 through June 30, 2004
- Facilities must exceed their historical 5-year average of qualified agricultural purchases by at least 10 percent





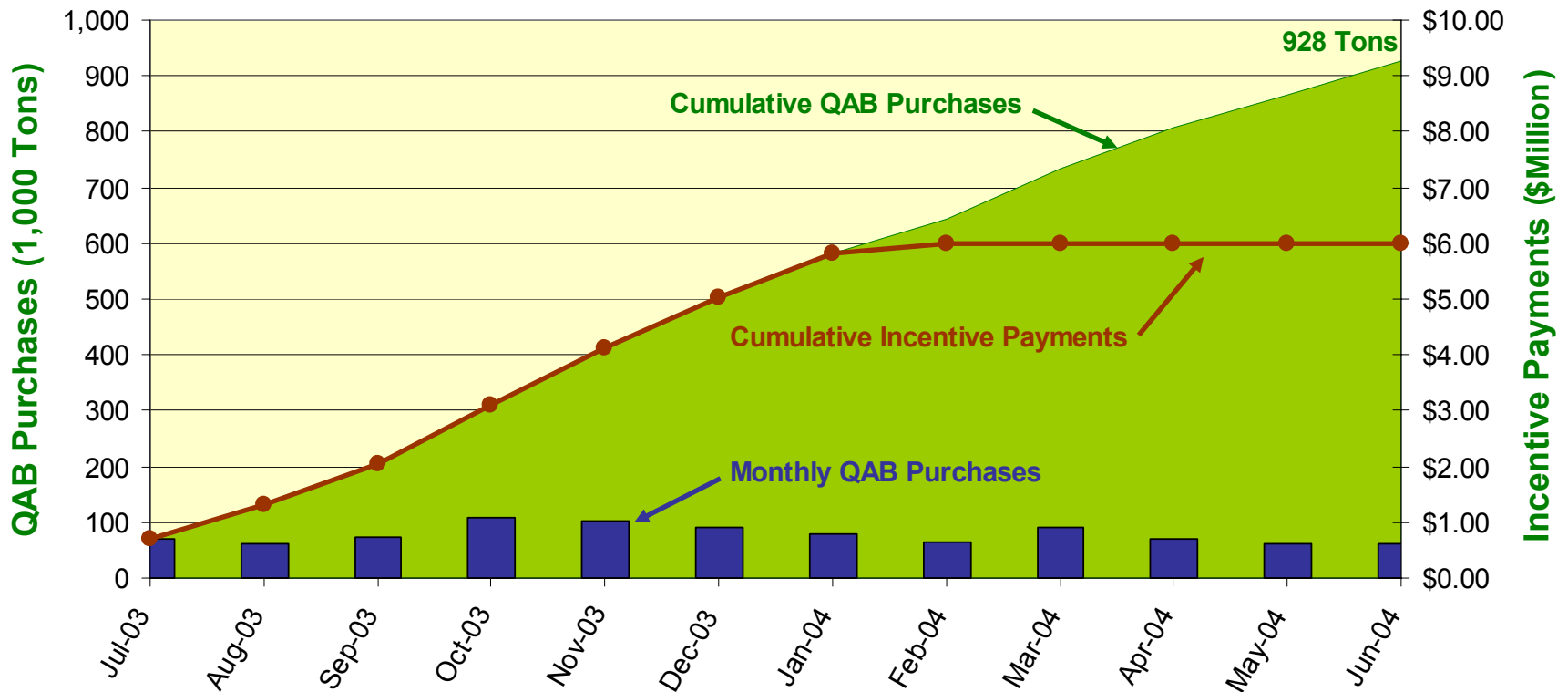
# Agricultural Biomass to Energy Program Results

- 9 registered participants in the program
- Provided ~ \$5 million to the 9 participants for Jul. – Dec. 2003 purchases
- Provided ~ \$1 million to 8 participants Jan. – Jun. 2004 purchases (1 registered facility did not participate in the second 6-month period)
- The \$6 million available covered eligible purchases from Jul. 03 through mid Feb. 2004 (No funds available for eligible purchases from mid Feb through Jun. 2004)
- Supported 600,000 tons of qualified agricultural biomass





## Agricultural Biomass to Energy Program QAB Purchases and Incentive Payments



QAB – Qualified Agricultural Biomass





# California's Renewable Energy Program Objectives

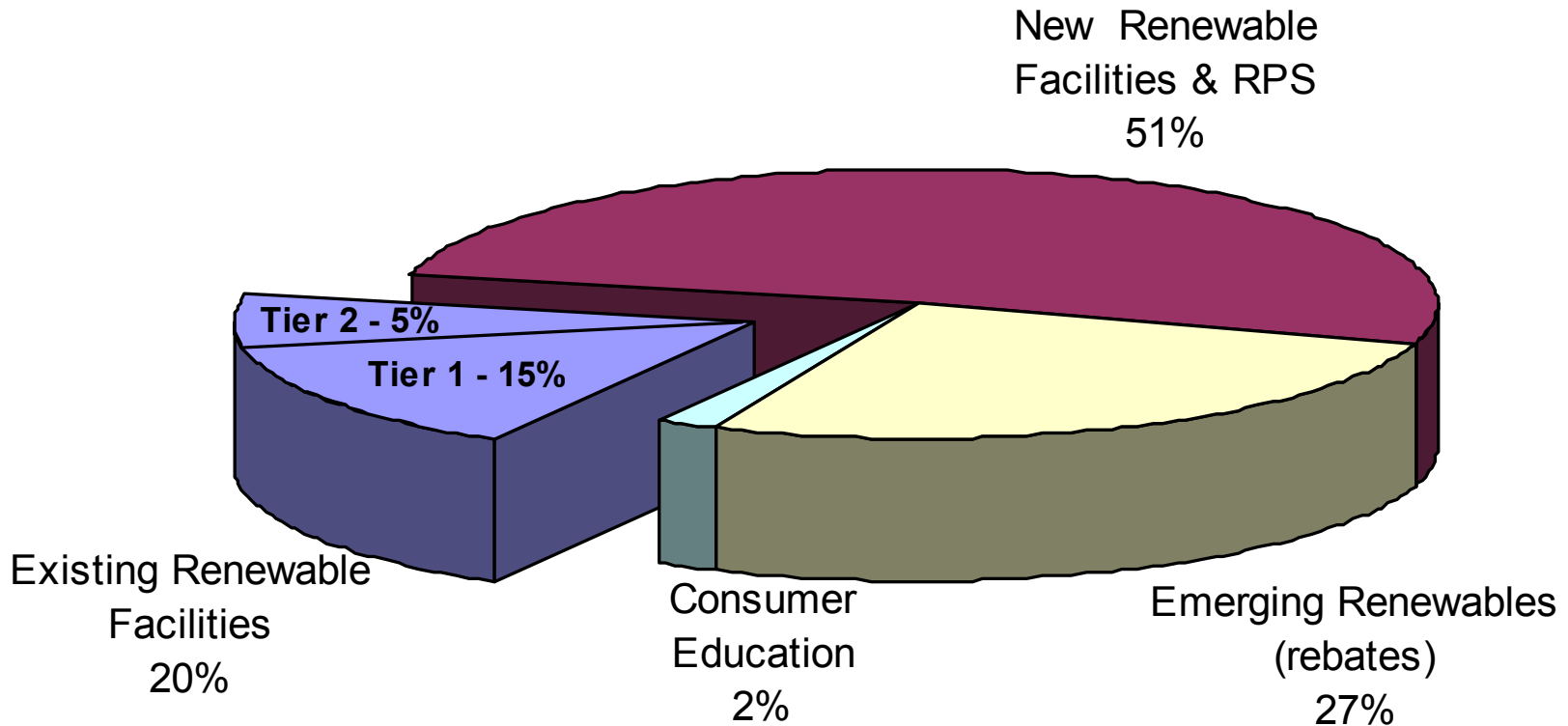
**~\$135 Million/Year (1998-2011)**

- Maximizes the influence of market incentives.
- Maintains the benefits and diversity of the existing renewables industry.
- Facilitates a self-sustaining renewables market.
- Encourages the market-based development of new and emerging renewable industries.





# Renewable Energy Program Funding Allocations \$135 Million/Year (2002 – 2006)





# Renewable Energy Program Achievements

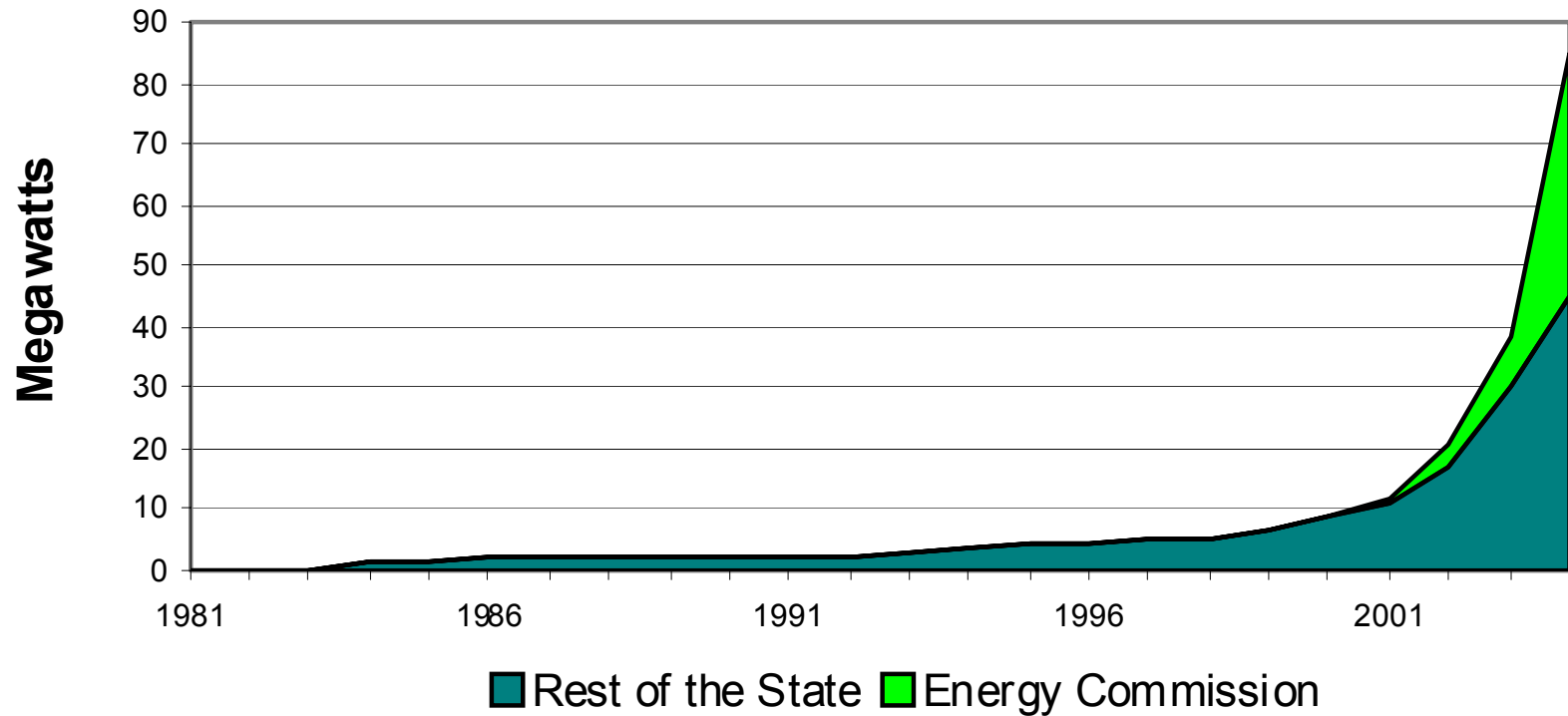
- Emerging Renewables Program
  - Over 12,000 systems installed (PV, wind, fuel cells)
  - 48 MW of renewable distributed generation capacity
- Consumer Education Program
  - Two statewide public awareness campaigns
  - 20 outreach & demonstration project grants
  - Tracking and verifying RPS sales
- New Renewable Facilities Program
  - In total, awards made to 69 projects (1.1 GW)
  - 45 projects (428 MW) are now online
- Existing Renewable Facilities Program
  - Has supported 4,400 MW of renewable power
  - Currently supporting about 2,021 MW (wind, solar thermal, biomass)







# Emerging Renewables Program California's PV Capacity

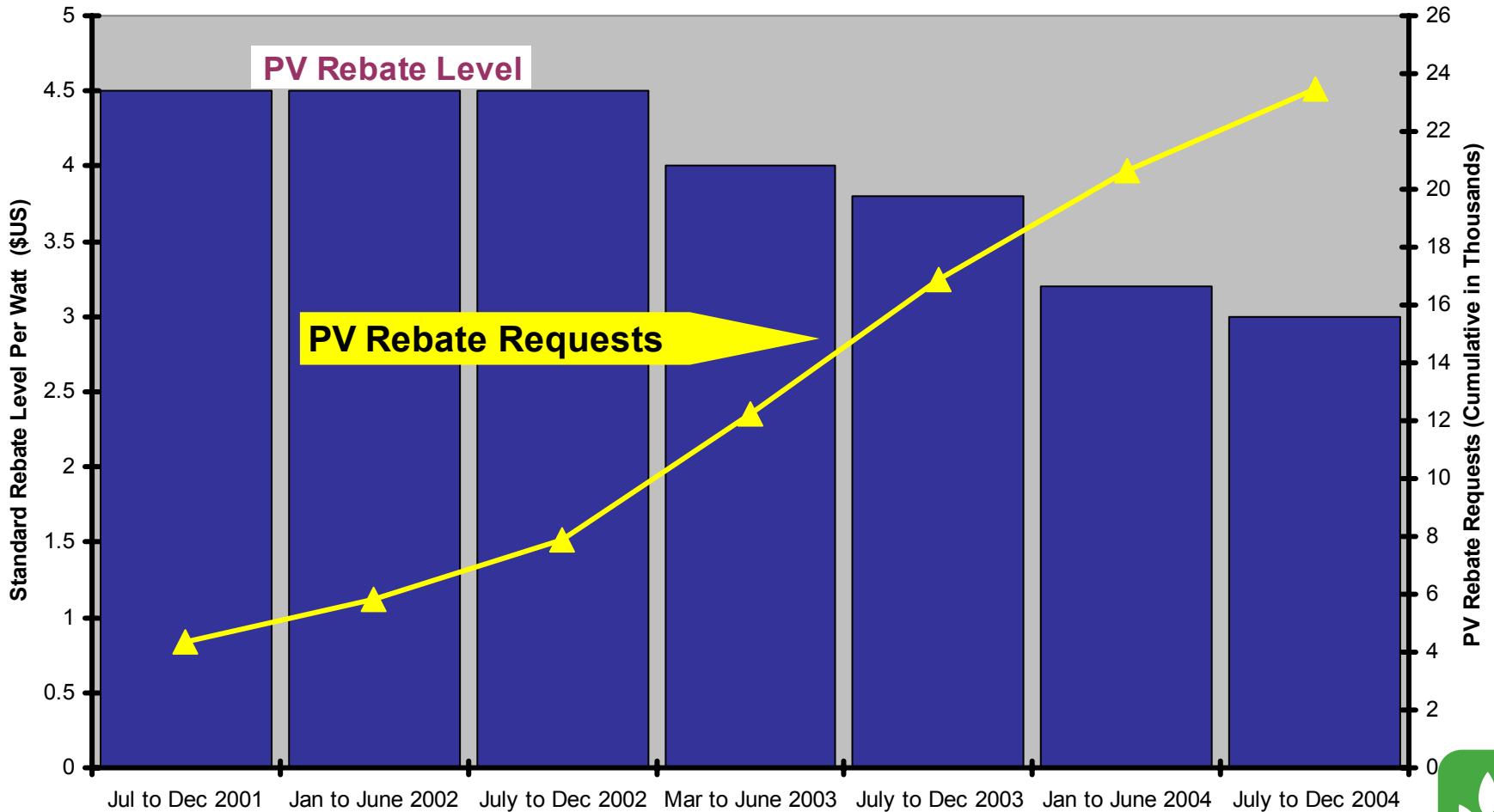


- Total grid-connected PV capacity in California is about 85 MW.
- Emerging Renewables Program rebates supported installation of nearly half of the state's PV capacity.





## Emerging Renewables Program PV Rebate Level and Rebate Requests





## Existing Renewable Facilities Program Overview

- Goal is to ensure the continued operation of existing renewable facilities in California
- \$243 million (45%) allocated from 1998 – 2001 (SB 90)
  - \$135 million for Tier 1 (biomass, solar thermal, & waste tire)
  - \$70.2 million for Tier 2 (wind)
  - \$37.8 million for Tier 3 (Geothermal, Small Hydro, Digester Gas, Landfill Gas, and Municipal Solid Waste)
- \$135 million (20%) allocated from 2002 – 2006 (SB 1038)
  - \$101.25 million (\$20.25 mil/yr) for Tier 1 (biomass & solar thermal)
  - \$33.75 million (\$6.75 mil/yr) for Tier 2 (wind)





## Existing Renewable Facilities Program Overview (cont.)

- Funding provided in the form of a production incentive that has been as high as 1.5 cent/kWh
- Current CAP of 1.0 cent/kWh
- Incentive payments provided when market price drops below preset target price
  - Currently 3.8 cents/kWh for wind
  - Currently 5.37 cents/kWh for biomass and solar thermal





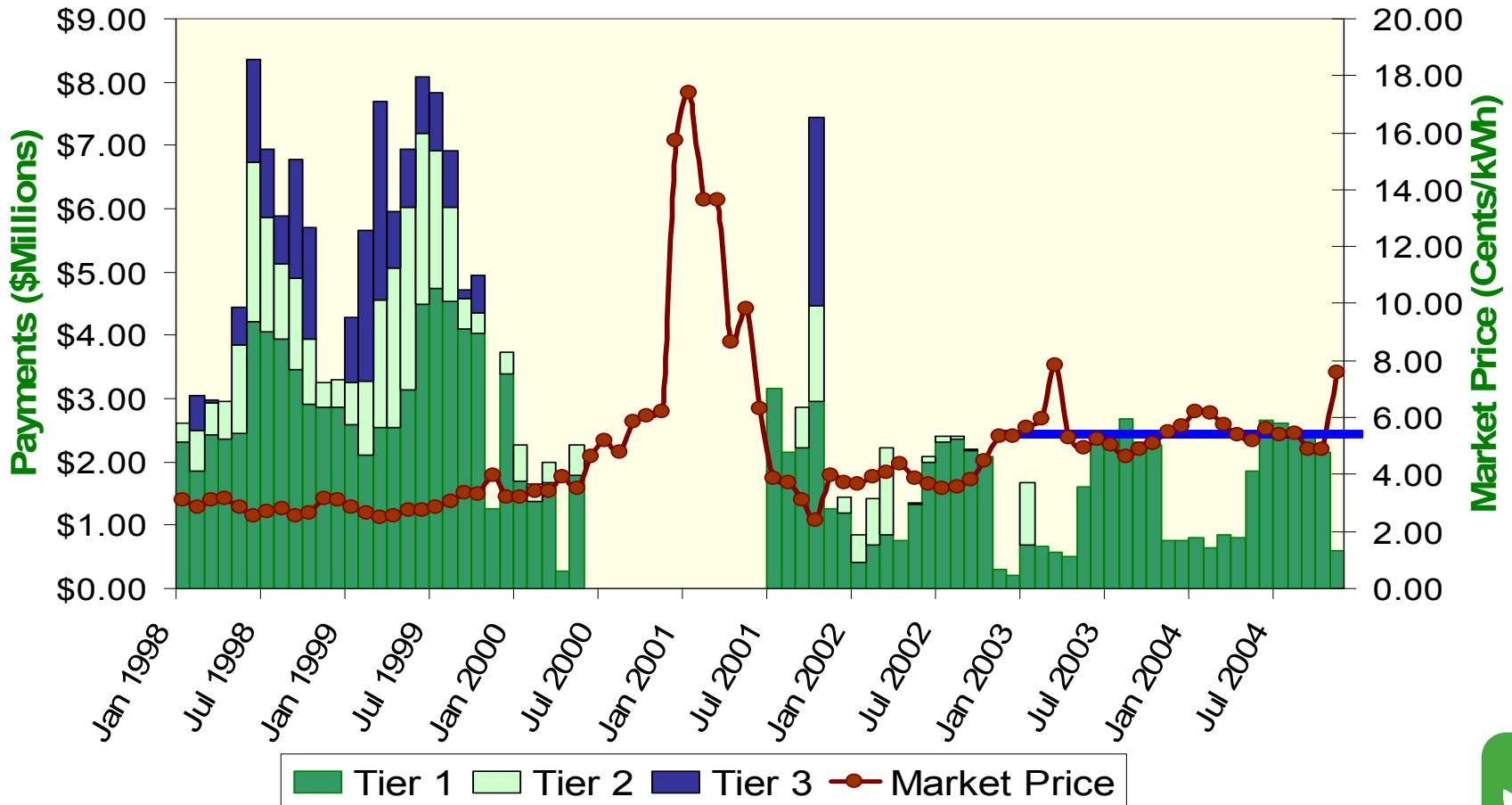
## Existing Renewable Facilities Program Results for Bio Energy Facilities

- Supporting 26 biomass facilities (620 MW)
- Provided over \$111 million from 1998 – present
- Provided ~ \$2.8 million to 25 land fill facilities from 1998 – 2001
- Provided ~ \$18,000 to 7 digester gas facilities from 1998 – 2001
- 7 eligible biomass facilities (~90 MW) have shut down since 1998
  - 2 since November 2003
  - Several may be in jeopardy of shutting down in near future



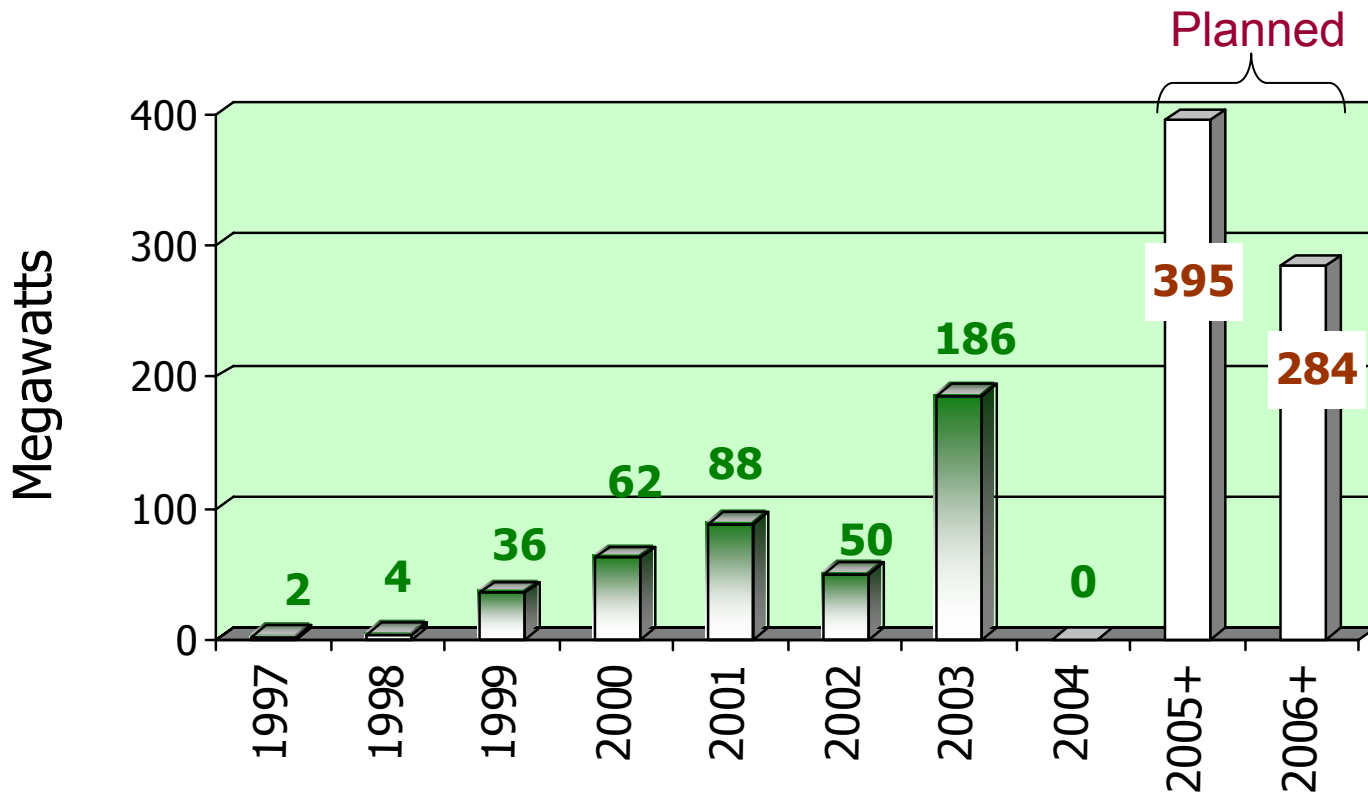


# Existing Renewable Facilities Program Market Activity (1998-2004)





# New Renewable Facilities Program On-Line Dates and Capacity



- New renewable projects online total 428 MW of capacity.
- More than half of the participating projects are on-line.





## New Renewable Facilities Program Bio Energy Facilities with Funding Awards

Technology	# Facilities Funded	Funded Capacity (MW)	# Facilities Online	On-line Capacity (MW)	Eligible Funding for On-line Capacity
Biomass	2	11	2	11	\$3.8 million
Digester Gas	1	2	1	2	\$1.1 million
Landfill Gas	18	50	14	36	\$15.9 million
<b>TOTALS</b>	<b>21</b>	<b>63</b>	<b>17</b>	<b>49</b>	<b>\$20.8 million</b>

\* Rows do not add to total due to rounding







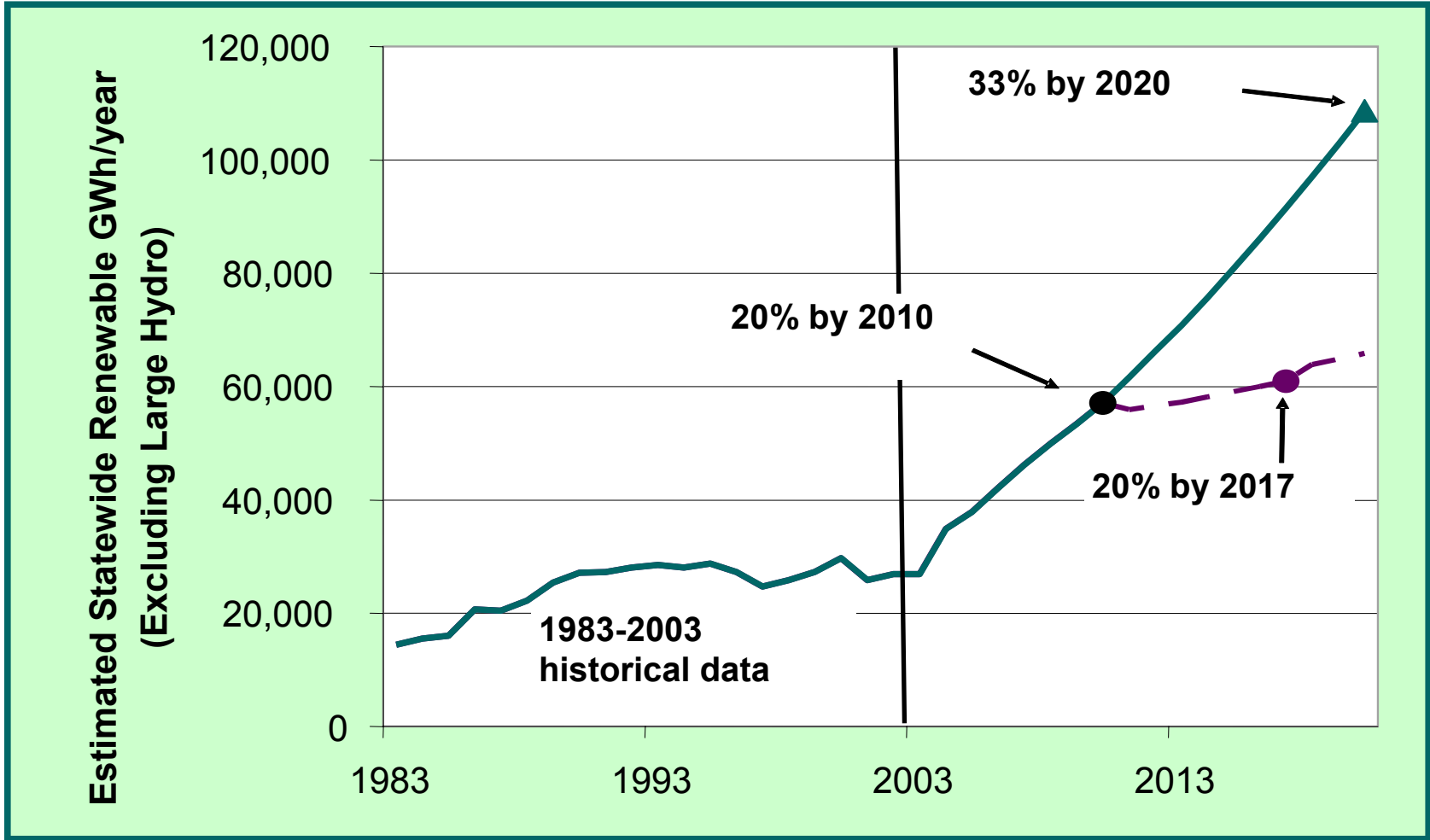
## California's Renewable Portfolio Standard Overview

- RPS target is 20% renewable energy for the state by year 2017
  - Each retail seller to increase procurement of eligible renewables by at least 1% of retail sales per year
- Baseline is year 2001 = about 11% renewable
- Gov. Schwarzenegger called for accelerating the RPS phase-in to 2010
- Energy Commission recommends accelerating RPS goal to year 2010 and is examining a possible goal of as much as 33% by 2020



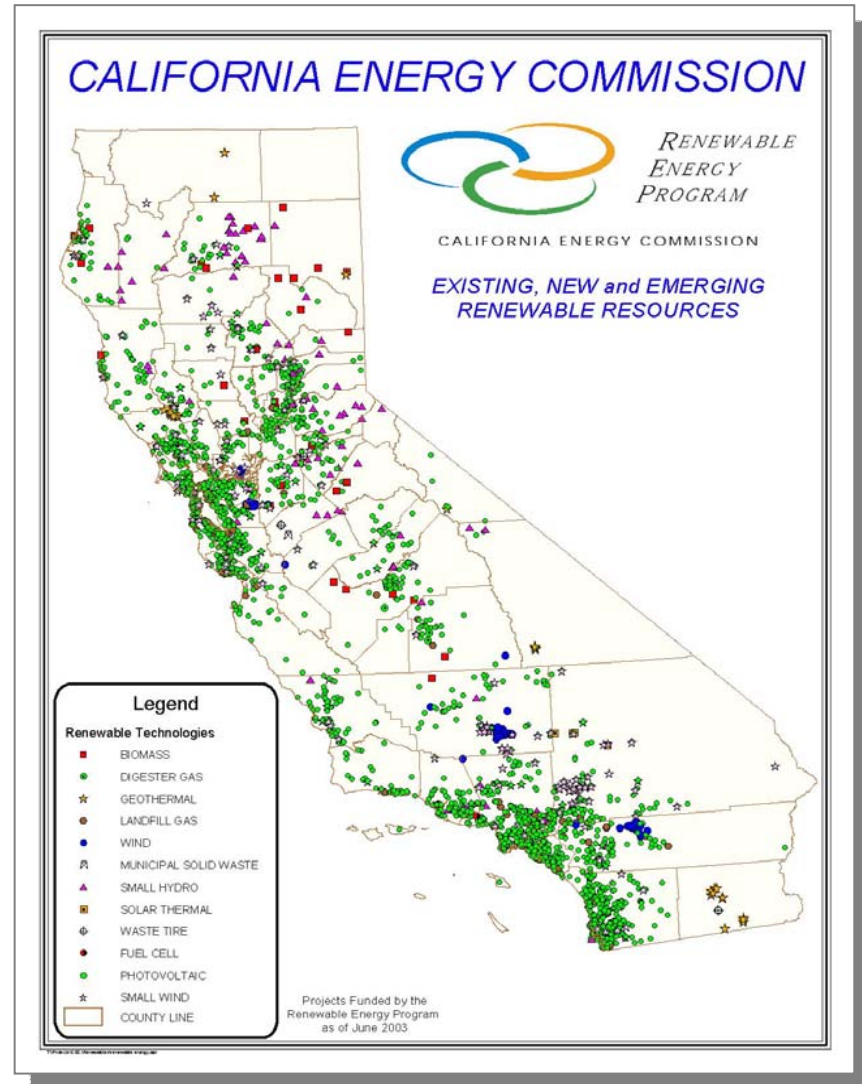


# Historical and Projected Renewable Generation in California (1983-2020)





Renewable  
Energy  
Program  
supports  
renewable  
energy  
development  
throughout  
California.





California Energy Commission

## Additional Information

For more information about the  
Renewable Energy Program, visit the  
Energy Commission's Web Site at

[www.energy.ca.gov/renewable](http://www.energy.ca.gov/renewable)

or call

**(800) 555-7794**



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