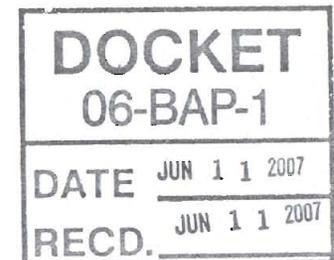

California's Bioenergy Action Plan – CPUC Actions



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Executive Director
California Public Utilities Commission

Sacramento
June 11, 2007



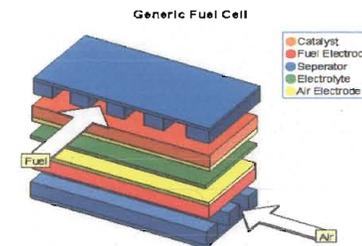
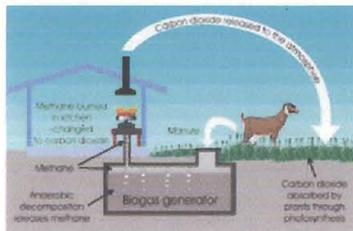
CPUC Programs Promote Progress towards Bioenergy Goals



- Net Metering
- Power Purchase Agreements
- Bioenergy Interconnection Rules
- AB 1969 – Potential for Renewables Power Purchase Tariff
- Self Generation Incentives Program
- Renewable Portfolio Standard Program
- GHG Emissions Performance Standard

Net Energy Metering for Biofuels

- Net Energy Metering (NEM):
 - helpful to customers whose renewable generating potential is comparable to their annual consumption
- NEM Eligible Technologies (up to 1MW):
 - Biogas-fired generators
 - Fuel Cells



(Biomass generators are currently ineligible)

Bioenergy Interconnection Rules

- Electric interconnection is by CPUC or FERC Interconnection Rules
 - CPUC Interconnection by Rule 21 is for
 - Net Metered biogas
 - Any non-exporting biogas or other onsite generation
 - Biogas < 20 MW that exports to the grid, such as with a Power Purchase Agreement, is interconnected under the FERC Small Generator Interconnection Procedure
-

Bioenergy and Power Purchase Agreements (PPA)

- Renewable energy can be purchased by a utility at a negotiated price
 - Helpful to customers whose renewable generating potential is larger than their annual onsite consumption
 - Generation can fulfill RPS Utility requirement
 - The Commission approved a PPA for a 150 kW dairy biogas generator with PG&E on March 15, 2007 (D.07-03-042).
-

Example Novel RPS contract: Biogas from Dairy Waste

- Vintage Farms Biogas Project

Project Developer	Type	Term	MMBtu	GWh	Online Date	Location
BioEnergy Solutions	Digester Gas	10	≤8000	≤389	6/1/2010	Fresno County

- Renewable energy credit (REC) is created when biogas is burned at PG&E nominated CCGT
 - 2010 contract delivery (at full capacity) = 0.5% of PG&E's 2010 total retail sales
 - Unique Environmental and Economic Benefits
-

Dairy Biogas Project Details

- Developer installed of anaerobic digesters at dairies
- Scrubbing, drying and compression equipment process biogas gathered from dairies
- PG&E buys biogas from digester developers to burn in an existing power plant



Renewables Purchase Power Tariff

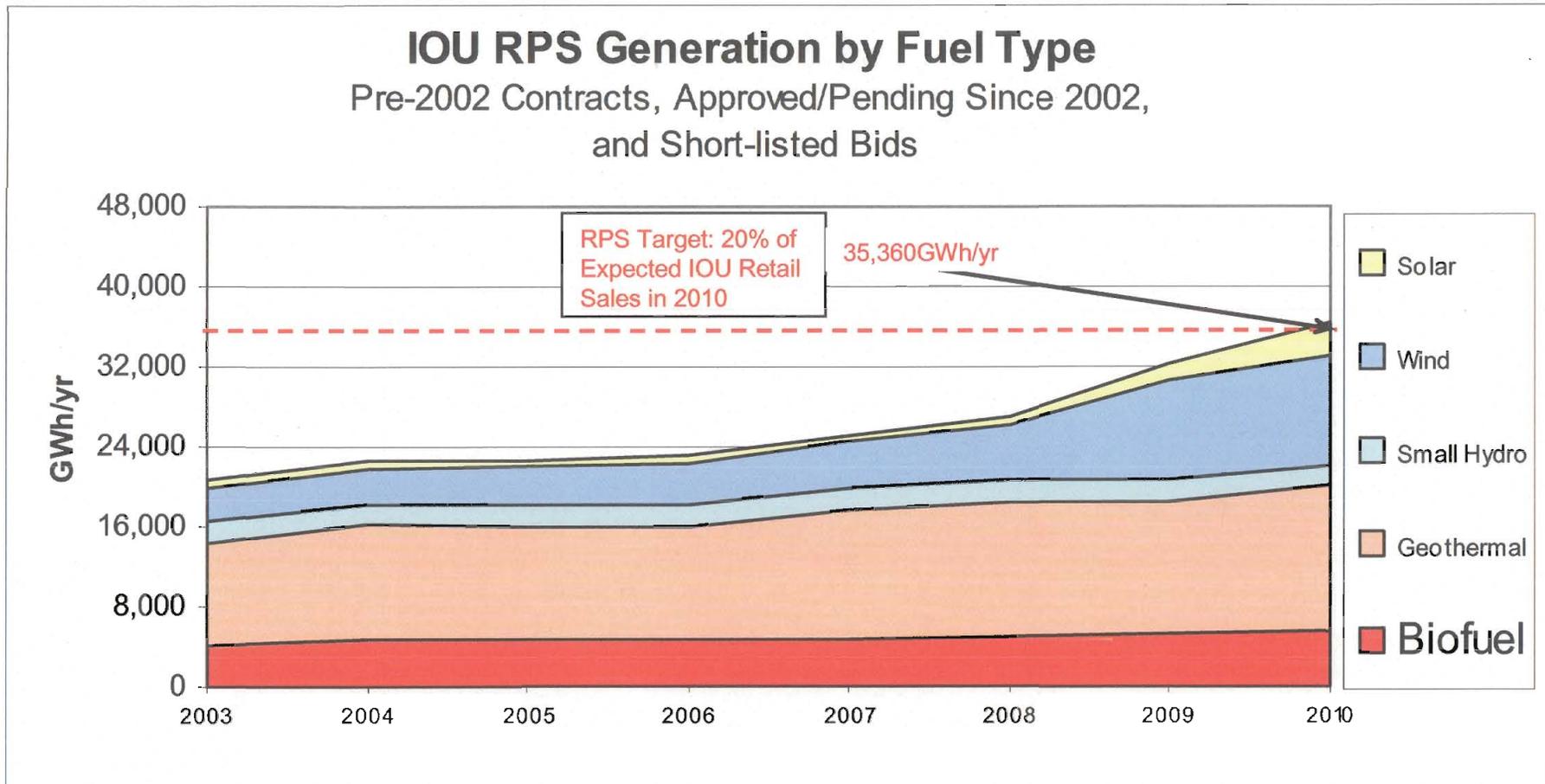
Supports Bioenergy

- AB 1969:
 - Requires utilities to purchase Renewables via a standard tariff from public water and wastewater agencies – up to 250 MW
 - Requires the energy to be purchased via a standard tariff at the “Market Price Referent” set by the Commission
 - Helpful to customers whose renewable generating potential is larger than their annual onsite consumption
 - Rulemaking in progress (R.06-05-027):
 - Opening the utility proposed standard tariff for public water and wastewater agencies to other renewable generators under consideration
 - Proposed additional 250 MW bioenergy pilot project supported by Renewables Purchase Power Tariff under consideration
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RPS Bioenergy Contracts

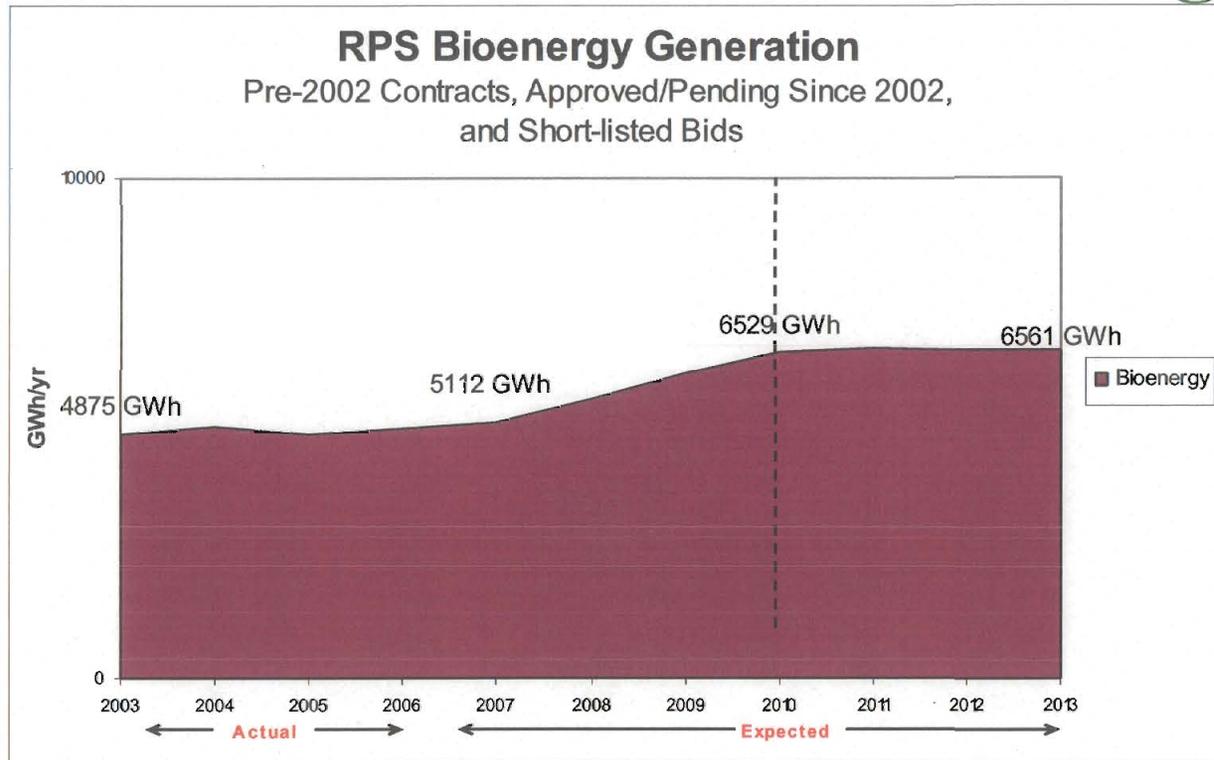
- Since 2002, the CPUC has approved:
 - 14 biomass projects (227 MW)
 - 10 biogas projects (50 MW)
 - 3 additional biogas contracts (7 MW) and 1 additional biomass contract (40 MW) that were later canceled
 - 72% of the biogas capacity and 55% of the biomass capacity is from new or re-started facilities
 - 20 MW of new biogas facilities have come online; two re-started biomass facilities are scheduled to come online this fall
 - 4 new biomass projects (82 MW) are delayed due to difficulties with fuel supply and/or site control
-

RPS Generation by Fuel Type



Bioenergy generation capacity continues to grow, but at a slower rate than other RE resources: In 2007, biofuels expected to provide 19% of CA's RPS-eligible energy. In 2010, biofuels expected to provide 15%.

RPS Generation from Bioenergy

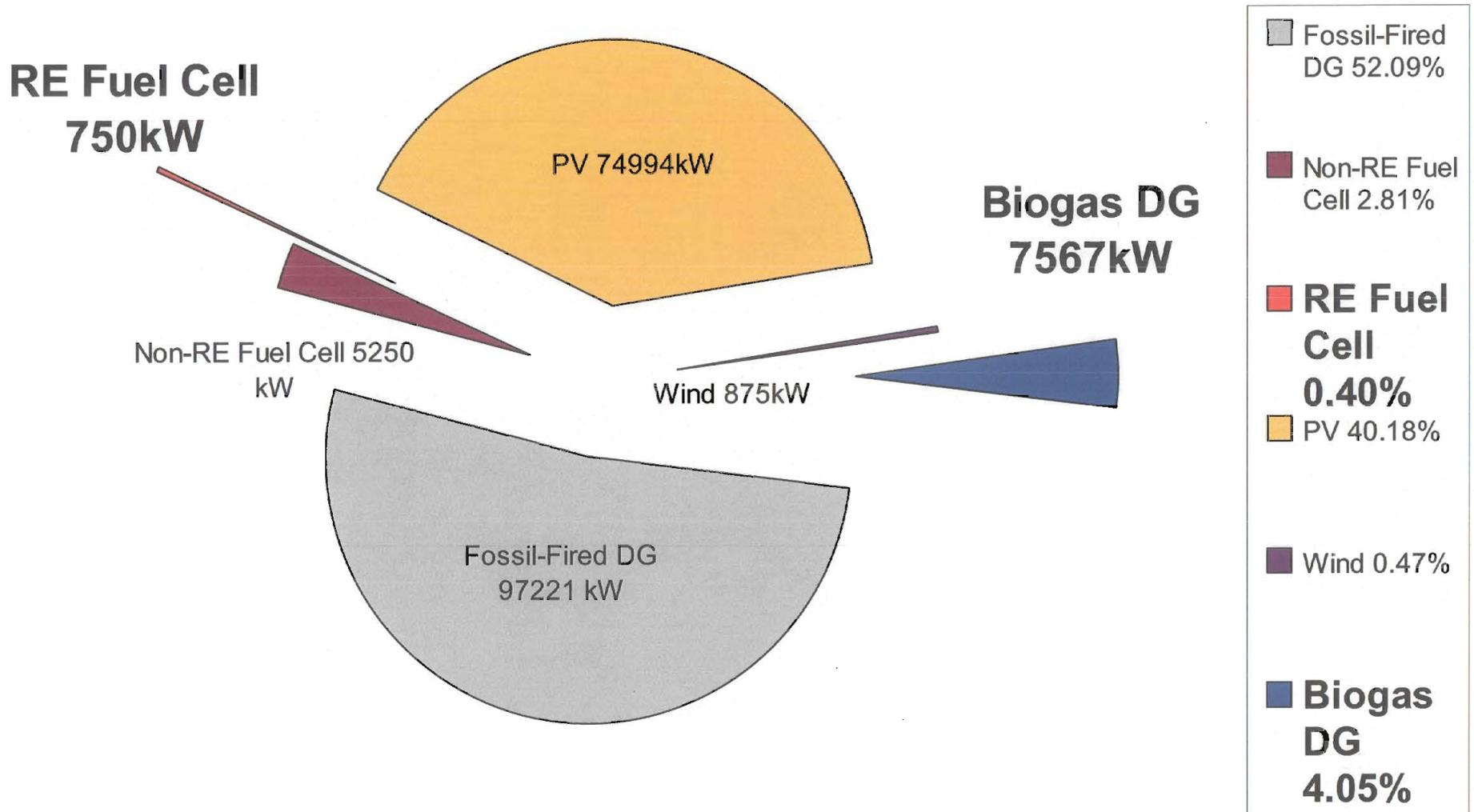


- While Bioenergy generation capacity continues to expand, some important factors may be limiting capacity growth:
 - Increased cost and limited supplies of Biomass fuel stocks
 - Difficulties siting and permitting new Biomass Generation
 - Uncertain availability of biomass fuel stocks could potentially increase rate of contract failure between generators and utilities

Funding Bioenergy through Self-Generation Incentive Program

- SGIP Funding:
 - New biogas and biomass combustion generators are eligible until December 31, 2007, award valid until January 1, 2012 (*legislative action pending may extend*)
 - Both RE and non-RE Fuel Cells are eligible to be awarded, and to receive SGIP funding until January 1, 2012.
 - Renewable-fueled includes biogas, landfill gas and gas from wastewater treatment
 - To date, SGIP incentives have supported 8.3 MW of renewable-fueled internal combustion engines, micro-turbines and fuel cells
 - (750kW RE Fuel Cells + 7.6 MW Biogas DG)
-

2006 Self-Generation Incentive Program Energy Production (by Generation Type)



GHG Emissions Performance Standard will support bioenergy

- An Emissions Performance Standard (EPS):
 - maximum rate a pollutant may be emitted per unit of a given output
 - The EPS adopted by the CPUC specifies a maximum rate of 1,100 lbs of CO₂ per MWh generated
 - Bioenergy is low/no CO₂ fuel source. Under EPS, the preference for bioenergy increases (vs. high carbon sources of energy)
-

Emissions Performance Standard: Implications for Bioenergy

- California will need more low- and zero-carbon sources of baseload power
 - Bioenergy deemed automatically compliant as low- and zero-carbon baseload power source
 - Projects where growing the fuel is required must calculate net emissions
 - RECs may not be used for compliance with Emissions Performance Standard
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