



Funding Opportunities for Waste to Energy Facilities



**Economic Incentives Workshop
CalEPA, Sierra Hearing Room**



June 15, 2009



Mike Leon
Renewable Energy Office
California Energy Commission
mleon@energy.state.ca.us
916-654-5168





- ❖ Renewables Portfolio Standard
- ❖ Existing Feed-In Tariff
- ❖ Proposed California Public Utilities Commission (CPUC) Expanded Feed-In Tariff
- ❖ Existing Renewable Facilities Program
- ❖ American Recovery and Reinvestment Act
- ❖ AB 118 – Alternative Fuels Program



Renewables Portfolio Standard

- A Renewables Portfolio Standard (RPS) requires that a minimum (and growing) percentage of renewable generation be included in the electricity mix.
- The benefits of an RPS include:
 - Long-term contracts with utilities help reduce risk for the developer and help secure financing
 - Projects submit bid to purchasing utility's annual Request for Offers (RFO) solicitation
 - Winning bid contract prices are compared to the market price referent (MPR)
 - Costs above the market price referent covered by the CPUC's Above Market Funds program†

† AMF funds for PG&E and SD&E have been depleted.



Renewables Portfolio Standard

- Eligible Waste to Energy Technologies
 - Non-Municipal Solid Waste (MSW)[‡]
 - Solid Fuel Biomass
 - Biodiesel from Biomass
 - Anaerobic Digester
 - Landfill Gas to Energy
 - Fuel Cells using eligible biomass or biogas
 - MSW[†]
 - Stanislaus County MSW Combustion facility
 - MSW Conversion Technologies

[‡] With the exception of landfill gas to energy facilities, feedstock may not come from the waste stream.

[†] The RPS statute does not allow the direct combustion of MSW with the exception of one facility is Stanislaus County. Energy Commission staff is evaluating the eligibility of various conversion technologies including pyrolysis and thermal gasification. Staff recognizes that the current statute makes it difficult for most conversion technologies to be eligible for the RPS, even those generally considered to be “gasification.” In the 2007 Integrated Energy Policy Report (IEPR), the Energy Commission acknowledged that “[s]tatutory changes are needed to enable use of biomass residues through both combustion and non-combustion technologies, such as gasification, fermentation, and pyrolysis, in current waste conversion technologies.” (pg. 30)



Existing Feed-in Tariff (1 of 2)

- AB 1969 (Yee, 2006) added Section 399.20 to Public Utilities Code
 - Established a must-take feed-in tariff set at MPR for public water and wastewater treatment projects < 1.0 MW
 - Program size capped at 250 megawatt (MW); cap allocated among IOUs proportionately based on peak demand
 - 10, 15, or 20 Year contracts



Existing Feed-in Tariff (2 of 2)

- SB 380 (Kehoe, 2008) amended Section 399.20 of Public Utilities Code
 - The existing feed-in tariff was expanded to include:
 - Projects < 1.5 MW
 - All RPS-eligible resources
 - Program cap of 500 MW
 - Full export or excess option
- All RPS-eligible biomass projects are eligible for participation in this program and are guaranteed payment at the MPR for every kilowatt hour (kWh) generated



SCE's Renewable Standard Contracts

- Southern California Edison (SCE) offers two standard contracts for renewables
 - RSC5 – projects with a capacity of 1.5 MW – 5 MW
 - RSC20 – projects with a capacity of 5 MW – 20 MW
- Open to all RPS-eligible technologies including biodiesel, biomass, landfill gas and digester gas
- Guaranteed payment at MPR for every kWh generated
- 10, 15, or 20 year contracts
- Program cap of 250 MW or December 31, 2009



Capacity under Feed-in Tariff and Standard Offer Contracts

Utility	Technology	Signed Contracts	Online
SCE – Renewable Standard Contracts 1.5 MW to 20 MW	Landfill Gas	5 contracts for 14 MW ¹	Projects not online
SCE – CREST feed-in tariff < 1.5 MW ²	Landfill Gas	1 contract for 1.1 MW	Project not currently delivering
PG&E – SRG feed-in tariff < 1.5 MW ³	Hydro Landfill Gas Wind	4 contracts for 1.57 MW 7 contracts for 6.475 MW 1 contract for 1.5 MW	1 online (0.05 MW) Projects not online Project not online
PG&E – PWF feed-in tariff < 1.5 MW ⁴	Hydro	1 contract for .05 MW	Project not online
SDG&E – Feed-in tariffs < 1.5 MW	No contracts	None	None

¹Some projects originated from Southern California Edison's Biomass Standard Contracts program that ended December 31, 2008

²The new CREST program is a consolidation of Edison's WATER and CREST programs that were established as a result of AB 1969. Please visit www.sce.com/renewables-standard-contracts.htm

³Small Renewable Generator <http://www.pge.com/b2b/energysupply/wholesaleelectricssuppliersolicitation/standardcontractsforpurchase/>

⁴Public Water and Wastewater Facility <http://www.pge.com/b2b/energysupply/wholesaleelectricssuppliersolicitation/standardcontractsforpurchase/>



CPUC Rulemaking 08-08-009

- CPUC considering expanding existing feed-in tariff
- Propose the following feed-in tariff
 - Open to all RPS-eligible technologies
 - > 1.5 MW to 10 MW
 - Additional 1000 MW cap
 - Full export only
 - Applicable only through SCE, PG&E, and SDG&E
- CPUC has not yet addressed tariff price



Existing Renewable Facilities Program

- Production incentives are offered for generation from existing renewable facilities – Online prior to 1996
- Payments are tied to market prices paid for energy
- Eligible technologies: solid-fuel biomass, solar thermal, wind
 - Facilities may use urban wood waste and agriculture waste that would otherwise be sent to a landfill or open-burned
 - Encourages diversion of RPS eligible feedstock from the waste stream
- Biomass Results:
 - Has helped 27 existing solid-fuel biomass facilities remain competitive or return to service by paying more than \$187 million for 30,000 gigawatt hours (GWh) of generation since 1998.
 - Provided \$6 million for 2004 Agriculture-to-Biomass Program to improve air quality in CA's agricultural areas.



American Recovery and Reinvestment Act of 2009



- Clean Renewable Energy Bonds (CREBS)
- U.S. Department of Energy - Loan Guarantee Program
- U.S. Department of Treasury - Renewable Energy Grants
- U.S. Department of Agriculture - Rural Energy for America Program (REAP) Grants and Loan Guarantees
- Biorefinery and Ethanol research grants (AB 118)



American Recovery and Reinvestment Act of 2009

Clean Renewable Energy Bonds (CREBS) - \$2.4B

- Program Administered by the IRS
 - Application deadline August 4, 2009
- Bonds for loan financing for “renewable” projects
 - CIWMB and CEC are eligible to apply for bonds as a qualified issuers‡
 - Projects must be owned by a governmental body, public power provider or a mutual or cooperative electric company
- Eligible waste to energy technologies:
 - Biomass
 - MSW Conversion
 - MSW Combustion†
 - Landfill Gas to Energy
- Could be used to assist publically owned landfills and waste water treatment facilities get financing to build waste to energy facilities.

‡ Issuer must be a governmental body or other qualified issuer; The Energy Commission is looking into the possibility of participating in this program.

† The IRS defines eligible solid waste to include waste from landfills and waste water treatment plants.



American Recovery and Reinvestment Act of 2009

Various Federal Loan Guarantees and Grants

- 
- U.S. Department of Energy (DOE) - Loan Guarantee Program - **\$6B**
 - DOE may enter into guarantees until September 30, 2011.
 - U.S. Department of Treasury - Renewable Energy Grants
 - Available to eligible property placed in service in 2009 or 2010, or for new projects, placed in service by the specified credit termination date
 - Grant may be taken in lieu of the investment tax credit (ITC).
 - USDA - Rural Energy for America Program (REAP) Grants and Loan Guarantees - **\$255M through FY 2012**
 - Application deadline July 31, 2009
 - Awarded for investments in renewable energy systems, energy efficiency improvements and renewable energy feasibility studies.



AB 118: The Alternative and Renewable Fuel and Technology Program (1 of 3)

- ~\$1 Billion State Funding Program
 - To transform California's transportation market into a diverse collection of alternative fuels and technologies and reduce California's dependence on petroleum.
 - For the *Alternative & Renewable Fuel and Vehicle Technology Program*, the Energy Commission will receive **\$120 million/year for over 7 years**.
 - First 2 years of funding through ARRA



AB 118: The Alternative and Renewable Fuel and Technology Program (2 of 3)

- The Energy Commission supports the practice of increasing utilization of the existing waste stream
- AB 118 is an Incentive Program Based on Public Money:
 - Eligible organic wastes are: agriculture residues, forest wastes, urban wood waste, MSW, biogas (biomethane)
 - Set High Standards for Sustainability
 - Identify and Promote Transportation-Related GHG-Reduction Projects that are Exemplary in Sustainability and Environmental Performance
 - Support Projects that Can Serve as National and International Models



AB 118: The Alternative and Renewable Fuel and Technology Program (3 of 3)

Fuel / Technology	2-Year Funding Allocation (million)
Electric Drive	\$46
Hydrogen	\$40
Ethanol (waste stream feedstocks)	\$12
Renewable Diesel / Biodiesel (waste stream)	\$6
Natural Gas (Includes \$10 M biomethane)	\$43
Propane	\$2
Non-GHG Support	\$27
Includes \$4 million for sustainability research	
Total	\$176
Sub-total Biofuels (ethanol, biodiesel, biomethane)	\$28



Acknowledgements

Kevin Barker

Joseph Fleshman

Garry O'Neill



Appendix



Renewables Portfolio Standard

- Existing Renewable Facilities Program
 - CEC Contact: Jason Orta
 - jorta@energy.state.ca.us
- Renewables Portfolio Standard eligibility
 - CEC contact: Kate Zocchetti
 - kzocchet@energy.state.ca.us
 - Eligibility Guidelines
 - <http://www.energy.ca.gov/renewables/documents/index.html#rps>
- Renewables Portfolio Standard procurement
 - CPUC Contact: Sean Simon
 - svn@cpuc.ca.gov



Feed-in Tariff and Standard Contracts (1 of 2)

- Existing Feed-in tariff
 - CPUC contact: Jaclyn Marks, jm3@cpuc.ca.gov
 - <http://www.cpuc.ca.gov/PUC/energy/Renewables/hot/feedintariffs.htm>
- PG&E contract: feed-intariffs@pge.com
 - <http://www.pge.com/b2b/energysupply/wholesaleelectricssuppliersolicitation/standardcontractsforpurchase/>
- SDG&E contact: Michael J. Iammarino,
 - MJIammarino@semprautilities.com, or (858) 654-8270
 - <http://www.sdge.com/regulatory/AB1969.shtml>
- SCE contact: George Wiltsee,
 - george.wiltsee@sce.com, or (626) 302-4945
 - <http://www.sce.com/EnergyProcurement/renewables/crest.htm>



Feed-in Tariff and Standard Contracts (2 of 2)

- Proposed feed-in tariff:
 - CPUC contact: Jaclyn Marks, jm3@cpuc.ca.gov
 - <http://www.cpuc.ca.gov/PUC/energy/Renewables/FITTCWorkshop.htm>
- Renewable Standard Contracts
 - SCE contact: George Wiltsee, george.wiltsee@sce.com, or (626) 302-4945
 - <http://www.sce.com/EnergyProcurement/renewables/renewables-standard-contracts.ht>



American Recovery and Reinvestment Act (2009)

- Database of State Incentives for Renewables and Efficiency
 - www.dsireusa.org/
- California State Recovery Page
 - <http://recovery.ca.gov/>
- California Energy Commission
 - <http://www.energy.ca.gov/recovery/index.html>
- US Department of Energy
 - <http://www.energy.gov/recovery/>
- Links to Federal Grant programs and Grantors
 - <http://www.grants.gov/applicants/recovery.jsp>



AB 118: The Alternative and Renewable Fuel and Technology Program Contacts

- Energy Commission contacts:
 - Tim Olson, tolson@energy.state.ca.us
 - Jim McKinney, jmckinne@energy.state.ca.us