Economic Incentives Workshop

June 15, 2009

TABLE OF CONTENTS

INTRODUCTION AND WORKSHOP GOAL

The goal of this workshop is to exchange information with stakeholders about existing and potential economic incentives that could be used for the purpose of increasing diversion of material from California's landfills. Economic incentives are defined here as mechanisms that provide financial rewards for reducing environmental impacts or penalties for increasing them.

While the CIWMB provides grants to address household hazardous waste, used oil, and tires, it has no dedicated funding to provide grants and other incentives for the vast majority (i.e., approximately 90%) of the disposal stream, composed of organics and other materials such as construction and demolition debris and plastics, with the exception of potential loans from its Recycling Market Development Zone Loan Program. Much of CIWMB's contractual work is funded from Consulting and Professional Services funds, which vary from year to year and which are used for other CIWMB priorities as well.

The CIWMB staff is seeking additional information on economic incentives that could be used to assist jurisdictions and businesses in diverting and using more organic and recyclable materials. This workshop thus is intended both to educate stakeholders about non-CIWMB incentives that we are aware of and to seek information on other incentives that could be used or developed to increase diversion. Such information could help further achievement of the CIWMB's strategic directives regarding organics materials and development of additional processing and manufacturing infrastructure in the state. Along with information gathered from stakeholder input at the workshop, this information will be compiled, analyzed, and presented to the Board for future discussion.

This paper describes financial economic incentives and disincentives that are either currently applied or could theoretically be applied to increase diversion of organics and other recyclable materials, and identifies barriers to implementation of these incentives. Non-financial economic incentives (e.g., awards) are not addressed. This paper specifically discusses the following categories of financial economic incentives and disincentives that are or could be used to increase diversion, with a focus on incentives and programs that are not offered by the CIWMB or the Department of Conservation:

1) **Funding**
   - Grants - a sum of non-refunded money given by a government agency for a specific purpose.
   - Loans - monies borrowed from a government agency, generally below the market rate.
   - Bonds - a certificate issued by a government or public company promising to repay money at a fixed rate of interest and at a specified time.

2) **Tax Credits** - a credit that reduces a businesses' tax liability by an amount equal to the tax credit.

3) **Tradable Permits and Tariff Contracts**

- Tradable Permits (cap-and-trade) - a cap-and-trade system is a market-oriented environmental policy that sets a ceiling on the quantity of pollution allowed, and gives or sells entities marketable or tradable permits to emit pollutants up to the cap.
- Tariff Contracts – a tariff is an offering of a guaranteed contract providing a predictable revenue stream over a specified term with specified operating conditions.

4) **Taxes and Fees** - payment for discharges of pollutants to the environment; may be based on the quantity and/or quality of the pollutant; examples include air emissions permit fees, effluent permit fees, solid waste disposal fees, fertilizer taxes, and stormwater runoff fees; often used for environmental protection activities. Simply stated, an enactment is considered a tax when the primary purpose is to raise revenue for government, while a fee is an enactment (fixed sum) used to offset the cost of a service.

FUNDING: GRANTS, LOANS, AND BONDS

GRANTS

The CIWMB, Department of Conservation, California Energy Commission, and USDA provide grants to governmental, educational and private entities in the State, as described in Table 1.

Table 1: Funding Summary*

Program	Material	Agency	Description
AB 118 - Alternative and Renewable Fuel and Vehicle Technology	Organics, Plastics, Cellulosic	CEC	Grants, loans, loan guarantees, and revolving loans for alternative fuel research, development, and deployment
American Recovery and Reinvestment Act of 2009	Various	Multiple	Loans, loan guarantees, grants, bonds, and tax credits for renewable energy research and deployment.
Rural Energy for America Program (REAP)	Biomass	USDA	Grants and loans to agricultural producers and small businesses to purchase renewable energy systems.
DOC Beverage Container Recycling	Beverage Containers	DOC	Annual competitive grants fund local projects dedicated to increasing recycling of aluminum, glass and plastic California Redemption Value (CRV) beverage containers.
Existing CIWMB Programs			
CIWMB Reuse Assistance	N.A.	CIWMB	Competitive grant program provides $250,000 per year to local public agencies for reuse infrastructure; max. of $50,000, 50% or greater match required.
CIWMB Used Oil Recycling	Used Oil	CIWMB	Non-competitive block grants to support local used oil and oil filter collection programs. Competitive Grants: nonprofit; opportunity; and research, testing, and demonstration grants.
CIWMB Tire-Derived Product	Tires	CIWMB	Grants to promote markets for recycled-content products derived from waste tires generated in California.

*See Attachment 1 for additional information on these programs.

- ***AB 118 - California Alternative and Renewable Fuel, Vehicle Technology, Clean Air, and Carbon Reduction Act of 2007***

AB 118 (Nunez, Chapter 750, Statutes of 2007) created the Alternative and Renewable Fuel and Vehicle Technology Program, to be administered by California Energy Commission. This program will provide **grants, loans, loan guarantees, revolving loans**, or other appropriate measures, to public agencies, businesses and projects, public-private partnerships, and other entities, for alternative fuel research, development, and deployment. For additional information, go to http://energy.ca.gov/process/agriculture/loan_solicitation/.

The Alternative and Renewable Fuel and Vehicle Technology Program may provide funds to facilities engaged in production of biofuels, such as low-carbon fuels from plastics, bioethanol from cellulosic waste, and methane from various organic materials. The Investment Plan for AB 118 serves as the guidance document for the allocation of program funding and is prepared annually based on input and advice from the AB 118 Advisory Committee. The following provisions are included in the Investment Plan, which can be found at http://www.energy.ca.gov/2009publications/CEC-600-2009-008/CEC-600-2009-008-CTF.PDF.

  - Co-fund 20 ethanol feedstock and project feasibility studies for new plants ($3 million).
  - Cost-share 2 new-pilot plants using waste feedstocks ($4 million).
  - Cost-share 5 production plants using waste feedstocks ($2 million).
  - Co-fund development of 5 biomethane production plants ($10 million).

- ***American Recovery and Reinvestment Act of 2009 (H.R. 1)***

The American Recovery and Reinvestment Act of 2009 (H.R. 1), also known as the Economic Stimulus Bill, was signed by President Obama on February 17, 2009. This bill:

  - provides **loans and loan guarantees** for renewable energy research and deployment,
  - provides **grants** to LFG and WTE facilities,
  - extends **production tax credits** for renewable energy production (until 2014),
  - allows a new 30% **investment tax credit** (in lieu of PTC) for renewable energy facilities,
  - provides 50% first year **depreciation** (RISE) and 5-year accelerated depreciation,
  - increases allocations of **clean renewable energy bonds** (CREB),
  - modifies the **tax credit** for carbon dioxide sequestration, and
  - allows a new **tax credit** for a qualifying advanced renewable energy project.

It is estimated that the California Energy Commission (CEC) will receive $239 million to support its programs in residential, commercial, industrial, institutional, and agricultural energy efficiency, in renewable energy research and deployment, and in transmission planning. Statutory authority will be required to use State Energy Programs (SEP) funds for renewable energy projects. CEC is seeking authority to expedite the award process by giving the commission sole source contracting authority, and allow the Commission to delegate approval of awards to either the Commission's Executive Director or a Committee of the commission. Also, CEC will receive an unknown portion of the $2.8 billion allocated nationally for energy efficiency and renewable energy. Additional funds may be available for advanced research projects, innovative technology loan guarantees, and renewable energy loan guarantees. For additional information on H.R. 1 and related bills, go to http://thomas.loc.gov/cgi-bin/bdquery/z?d111:H.R.1:.

- ***Rural Energy for America Program (REAP)***

The Rural Energy for America Program (REAP), part of the 2008 Federal Farm Bill, provides **grants and loans** to agricultural producers and small businesses to purchase renewable energy systems. The Rural Business and Cooperative Services of the United States Department of Agriculture (USDA) administers the program. In FY 2008, $15.8 million was available in grants and $204 million was available in guaranteed loans. Grants can fund up to 25% of a project's total eligible costs and are limited to $500,000 for renewable energy projects. Guaranteed loans can fund up to 50% of a project's total eligible costs – with a minimum of $5,000 and a maximum of $25 million. Combination grants and guaranteed loans can fund up to 50% of a project's total eligible costs. Eligible renewable energy projects include projects that produce energy from biomass and hydrogen-based sources. The project can produce any form of energy, including heat, electricity, or fuel. For all projects, the system must be located in a rural area, must be technically feasible, meet environmental requirements, and must be owned by the applicant. For additional information, go to http://www.rurdev.usda.gov/rbs/farmbill/.

LOANS

The following are examples of California loan programs:

- ***California Small Business Loan Guarantee Program***

The Small Business Loan Guarantee Program allows a small business to acquire a loan and establish a favorable credit history with a lender so that future financing can be obtained by the business on its own. Guarantees can cover up to 90 percent of the loan amount, with the guaranteed portion not exceeding $500,000. The term of the loan may extend up to seven years. The program is administered through any one of the State's eleven Financial Development Corporations (FDC), either directly or through an applicant's bank. For additional information, go to http://www.calbusiness.ca.gov/cedpgybfasblgp.asp.

- ***RMDZ Loan Program***

CIWMB's Recycling Market Development Zone (RMDZ) program provides loans, technical assistance, and free product marketing to businesses that use materials from the waste stream to manufacture their products and are located in a zone. RMDZ zones serve approximately 65% of California geographical areas. For additional information, go to http://www.ciwmb.ca.gov/RMDZ/Loans/.

- ***California Capital Access Program (CalCAP)***

The California Capital Access Program (CalCAP), administered by California Pollution Control Financing Agency (CPCFA), helps small-business borrowers obtain loans through participating financial institutions. CalCAP contributes to the loan loss reserves of a financial institution, thereby allowing the lender to provide loans to business which might otherwise not be able to obtain financing. While the requirements of the participating lenders can vary, the maximum size of a CalCAP loan is $1.5 million. There is no minimum size and some lenders are providing loans as low as $500. For additional information, go to http://www.treasurer.ca.gov/cpcfa/calcap.asp.

BONDS

Industrial Development Bonds (IDBs) are tax-exempt securities issued in an amount up to $10 million by a governmental entity to provide money for the acquisition, construction, rehabilitation and equipping of manufacturing and processing facilities for private companies. IDBs can be issued by the I-Bank, local Industrial Development Authorities, or by Joint Powers Authorities. The use of IDBs is governed by federal and state laws and regulations. Today, most IDBs support expansions of existing manufacturing. IDBs offer interest rate savings to small and midsize manufacturers in contrast to conventional loans.

There are pros and cons to using an IDB to fund a project. The pros include low interest rates, amounts up to 10 million dollars per project, and eligibility of solid waste collection and disposal projects. The cons include the relative difficulty of obtaining an IDB in comparison to an RMDZ loan, requirement to obtain a letter of credit (well secured by business assets) from a bank, requirement that financial statements be audited by a top-five CPA firm, and the high amount of annual sales required.

The following are examples of California IDB programs:

- ***California Pollution Control Financing Authority (CPCFA)***

CPCFA's Tax-Exempt Bond financing Program gives California businesses help with acquisition or construction of qualified pollution control, waste disposal, or recycling facilities, and the acquisition and installation of new equipment. CPCFA provides tax-exempt IDBs for qualified manufacturing and processing companies. CPCFA IDBs that meet statutory and regulatory requirements can be used for a variety of pollution control, solid waste and recycling facilities. Generally, IDBs are issued for projects costing at least $1 million up to a maximum of $10 million. Typically, tax-exempt bond issues exceed

$2.5 million. Also, CPCFA provides grants and loans to clean up contaminated lands and small business loan assistance. For additional information, go to http://www.treasurer.ca.gov/cpcfa/.

The American Recovery and Reinvestment Act of 2009 contains several provisions which will boost California's IDB program, including the following:

- Elimination of the ancillary facilities limitations for all IDBs issued before 2011. This means IDB proceeds may be used to finance any assets that are functionally related and subordinate to a manufacturing, research or production facility, [e.g., a warehouse] provided that such assets are located on the same site as the core facility.
- Permanent elimination of restrictions on the use of IDB proceeds to finance office space located on the same site as the core facility and deemed to be functionally related and subordinate to the core facility.
- Exemption from individual and corporate alternative minimum tax (AMT) for investors who purchase IDBs.
- Lifting certain restrictions on banks' ability to deduct interest earnings on their IDB investments.

- ***California Industrial Development Financing Advisory Commission (CIDFAC)***

CIDFAC assists California businesses by providing access to low-cost, tax-exempt IDB financing for capital expenditures. This program allows businesses to borrow funds at competitive rates through the issuance of tax-exempt bonds either supported by some form of credit enhancement (e.g., a bank-issued letter of credit) or placed with sophisticated investors. IDBs may be used for manufacturing projects which use recycled or reused products and materials for the creation of tangible products for sale. For more information regarding California's IDB program, go to CIDFAC's website at www.treasurer.ca.gov/cidfac or contact CIDFAC at (916) 653-3843.

- ***California Infrastructure and Economic Development Bank (I-Bank)***

The California Infrastructure and Economic Development Bank (I-Bank) focuses on public infrastructure and private investments. Eligible applicants include redevelopment agencies, cities, counties, special districts, and assessment districts. Eligible projects include solid waste collection and disposal. Loan amounts of $250,000 to 10 million dollars are available per project, with a maximum of 10 million dollars per project and 20 million dollars per jurisdiction. The term is up to 30 years, but cannot exceed the useful life of the project. The 7-year historical average rate is 3.13% with 30 year financing. For additional information, go to http://www.ibank.ca.gov/Programs/industrial.html.

TAX CREDITS

Federal and state tax credits may be available for research & development on recycling infrastructure. Also, credits may be available for development of alternative energy sources, such as biofuels production.

Research and Development (R&D) Credit

The California R&D Credit reduces income or franchise taxes for research expenses while conducting qualified research in the State. If qualified, recipients are eligible to receive 15 percent of the excess of current year research expenditures over a computed base amount (minimum of 50 percent of current year research expenses). Specified research activities not qualifying for California's R&D Credit include market and consumer research, research conducted after the beginning of commercial production, and research related to adaptation on an existing business component. For additional information, go to http://www.ftb.ca.gov/forms/misc/1082.pdf.

Recycling Investment Tax Credit – (Discontinued)

CIWMB's Recycling Equipment Tax Credit Program (ETC) became effective January 1, 1989, but sunset on January 1, 1994. The ETC allowed a 40 percent tax credit for qualified property (equipment) purchased and placed into operation between January 1, 1989 and December 31, 1993. The credit was divided over three years: 20 percent the first year, 15 percent the second year and 5 percent the third year. Any unused credit because of low tax liability was rolled to the following year, and succeeding years if necessary, until the credit was exhausted. According to a 1995 CIWMB report to the Legislature, the tax credit did not appear to have a major impact to increase recycling, but several recommendations were made to remedy problems in the program in order that more recycling businesses could take advantage of the credit. However, the ETC was not reinstituted.

Federal Biogas Production Incentives Act of 2009 (S. 306, H.R. 1158)

United States Senator Ben Nelson introduced legislation on January 22, 2009, that promotes development of biogas through tax incentives. The Biogas Production Incentives Act of 2009 would provide biogas producers with a tax credit of $4.27 for every million British thermal units (mmBtu) of biogas produced. Biogas can be produced from manure, food, and other organic wastes. Technologies used to produce biogas include anaerobic digestion, hydrolysis, and gasification. For additional information on S. 306 and H.R. 1158, go to http://thomas.loc.gov/.

Federal Ethanol Tax Credit (S. 622)

The ethanol tax credit provides a credit against Federal gasoline taxes that is worth 51 cents for every gallon of ethanol blended into the gasoline pool. For a typical gasoline blend with 10 percent ethanol,

the credit reduces the Federal excise tax (18.4 cents per gallon) by 5.1 cents, resulting in an effective tax rate of 13.3 cents per gallon for the blender. Currently, the ethanol tax credit is scheduled to expire in 2010; however, it has been in effect since 1978, and while it has been adjusted both up and down, it has consistently been extended. For additional information on S. 622, go to http://thomas.loc.gov/.

Federal Biodiesel Tax Credit

Biodiesel also receives a tax credit, at 50 cents per gallon for biodiesel produced from recycled oils. The biodiesel tax credit was established by the American Jobs Creation Act of 2004, with a 2006 expiration date. It has been extended twice since then, the latest under H.R. 1424, the Emergency Economic Stabilization Act, which became effective January 1, 2009. This bill extends the income tax credits, blenders excise tax credit and the small producer tax credit that make up the biodiesel tax incentive for one year through December 31, 2009. Also, this bill provides that all biodiesel, regardless of feedstock used to produce the fuel, qualifies for the $1.00 per gallon biodiesel incentive. For additional information on S. 320, go to http://thomas.loc.gov/.

Federal Renewable Energy Production Tax Credit (H.R. 907)

First established in 1992, but renewed and expanded several times (most recently by H.R. 1424 in 2008), the Federal Renewable Electricity Production Tax Credit (PTC) is a per-kilowatt-hour tax credit for electricity generated by qualified energy resources and sold by the taxpayer to an unrelated person during the taxable year. Eligible technologies include landfill gas, biomass, municipal solid waste, and anaerobic digestion. A PTC of 0.95 to 1.9 cents per kilowatt hour is provided for sales of electricity generated from certain renewable resources at qualifying facilities for the first 10 years of their operation. The PTC is adjusted by the IRS each year, based on the annual inflation rate. The eligible system size for agricultural livestock waste is a minimum capacity of 150 kW. For additional information on H.R. 907, go to http://thomas.loc.gov/.

Economic Development Areas

The state offers four types of Economic Development Areas (EDAs) that provide tax credits for business investment:

- Enterprise Zones;
- Local Agency Military Base Recovery Areas (LAMBRA);
- Manufacturing Enhancement Areas (MEA); and
- Targeted Tax Areas (TTA).

The purpose of these benefits is to stimulate business investment and job creation for qualified disadvantage individuals in state designated economically distressed areas. For additional information,

go to http://www.hcd.ca.gov/fa/cdbg/ez/. In addition, CIWMB runs its own program (i.e., RMDZ) to specifically incentivize recycling businesses.

Table 2: Tax Credits Summary			
Program	**Material**	**Agency**	**Description**
R&D Tax Credit	MSW, Recyclables	FTB	"Basic Research" and "Qualified Research" conducted in California.
Biogas Production Incentives Act of 2009	Biomass – Agricultural, Food Industry	IRS	Business-related tax credit for production, sale, or use of biogas.
Biofuels Tax Credit	Biomass	IRS	Credit against Federal gasoline taxes of 51 cents for every gallon of ethanol blended into the gasoline pool.
Biodiesel Tax Credit	Used Vegetable Oil	IRS	Tax credit of $1.00 per gallon, regardless of feedstock used to produce biodiesel.
Renewable Energy PTC	Biomass	IRS	Per-kilowatt-hour tax credit for electricity generated by qualified energy resources. Eligible technologies include energy produced from LFG, biomass, and MSW, and energy produced by anaerobic digestion biogas.
Economic Development Areas	Various	FTB	Tax credits to stimulate business investment and job creation

TRADABLE PERMITS AND TARIFF CONTRACTS

There are several examples of marketable or tradable permits and tradable contracts in California that are used to incentivize diversion activities.

Tradable Permits

- ***Cap-And-Trade System***

A cap-and-trade system is a market-oriented environmental policy that sets a ceiling on the quantity of pollution allowed, and gives or sells entities marketable or tradable permits to emit pollutants up to the cap. Entities can comply through emission reduction projects at their facilities and/or by purchasing emission credits from the government or other entities that have generated emission reductions in excess of their compliance requirements.

The Air Resources Board, under AB32, is developing a cap-and-trade approach for limiting greenhouse gases. If adopted, it would become operational on January 1, 2012. At this time, there is uncertainty on whether or not recycling and waste management activities will be considered as a source of tradable offsets. If offsets are allowed, credits would be granted to an uncapped source for the net emissions reductions a project achieves. A capped source could acquire these credits as a method of compliance under the cap.

- ***Climate Action Reserve (CAR)***

The Climate Action Reserve Program, formerly known as the California Climate Action Registry (CCAR), develops protocols that can be used by projects that qualify to obtain carbon credits that could be tradable under cap-and-trade and other marketing systems. CAR currently caters to the voluntary carbon market, but expects these reduction credits will be incorporated into future cap-and-trade systems, either federal or state. For example, the draft Waxman-Markey climate bill (discussion draft) in the house sets standards for programs that can provide offset credits that that would meet a portion of emitters' compliance requirements. The bill would not cover entities that emit less than 25,000 tons per year of CO_2 equivalent. The discussion draft is available at http://energycommerce.house.gov/Press_111/20090331/acesa_discussiondraft.pdf.

CAR expects that its program will be one of a select group of programs to pass the requirements for an eligible offset registry in this bill. If CAR's program is included, its projects could generate and register credits with the Reserve by using CAR protocols. These credits, called Climate Reserve Tons (CRT) would be able to be sold into the cap-and-trade system. For example, the owner of the CRTs could sell to a power plant so that the plant could use these credits to help meet its emissions cap. CAR would register and track credits and retire them once they are used for compliance. For additional information, go to http://www.climateactionreserve.org/.

CAR has developed a landfill project protocol (http://www.climateactionreserve.org/how-it-works/protocols/adopted-protocols/landfill/current-landfill-project-protocol/). The "Landfill Project Reporting and Verification Protocols" provide guidance to quantify, report, and verify GHG emission reductions associated with installing a landfill gas collection and destruction system at landfill operations. These protocols were first adopted in November 2007. Also, CCAR has begun development of a protocol for co-digestion activities (http://www.climateactionreserve.org/how-it-works/protocols/protocols-in-progress/co-digestion-project-protocol/). The Co-Digestion Project Reporting Protocol will provide a GHG accounting methodology for projects that anaerobically digest manure and/or organic waste streams that otherwise would have gone to anaerobic storage, treatment and disposal systems such as solid waste landfills, anaerobic lagoons, and wastewater treatment facilities.

- ***Chicago Climate Exchange***

The Chicago Climate Exchange (CCX) operates "North America's only cap-and-trade system for all six greenhouse gases." Under CCX, emitters make a voluntary commitment to meet annual GHG emission reduction targets. The commodity traded is the Carbon Financial Instrument (CFI) contract, each representing 100 metric tons of CO_2 equivalent. These contracts are comprised of Exchange Allowances and Exchange Offsets. Exchange Allowances are issued in accordance with a member's emission baseline and Emission Reduction Schedule. CCX has developed standardized rules for issuing CFI contracts for landfill methane and renewable energy projects, which can be viewed at http://www.chicagoclimateexchange.com/content.jsf?id=23). For landfill methane, CFI contracts are issued on the basis of methane collected, and destroyed net of CO_2 released upon combustion, for a net rate of 18.25 metric tons of CO_2 for each metric ton of methane combusted. Exchange Offsets are generated by qualifying offset projects.

TARIFF CONTRACTS

California's Renewables Portfolio Standard (RPS) requires the state's investor-owned utilities, community choice aggregators and energy service providers, to provide 20 percent of retail sales with renewable resources by 2010. Publicly owned utilities are also required to implement an RPS, but are given flexibility in developing utility-specific targets, timelines, and resource eligibility rules. The Governor's Executive Order S-14-08 increases the renewable energy target to 33 percent by 2020, which requires new policy tools to meet this aggressive goal. Also, AB 64 would increase California's RPS to require all retail sellers of electricity and all Publicly Owned Utilities (POUs) to procure at least 33% of electricity delivered to their retail customers from renewable resources by 2020.

To date, California is not on track to meet the Renewables Portfolio Standards (RPS) mandates. Attainment of these renewable energy goals is also necessary for meeting California's greenhouse gas reductions goals under the Global Warming Solutions Act of 2006. For these reasons, economic

incentives are being considered that would require investor-owned utilities, public utilities, community choice aggregators and energy service providers, to purchase renewable energy at above market rates. One option under consideration is the use of feed-in tariffs.

- ***California Feed-In Tariff***

According to the California Energy Commission's (CEC) report, California Feed-In Tariff Design and Policy Options, dated November 2008, "A feed-in tariff is an offering of a guaranteed contract providing a generator with a predictable revenue stream to eligible renewable energy generators over a specified term with specified operating conditions. Feed-in tariffs can be either an all-inclusive rate or a premium payment on top of the prevailing spot market price for power. The price paid represents estimates of either the cost or value of renewable generation. The tariff is generally offered by the interconnecting utility and sets a standing price for each category of eligible renewable generator; the price is available to all eligible generators. Tariffs are often differentiated based on technology type, resource quality, or project size and may decline on a set schedule over time."

A cost-based feed-in tariff open to all RPS eligible technologies has been recommended by the CEC in its *2008 Integrated Energy Policy Report Update* [<http://www.energy.ca.gov/2008publications/CEC-100-2008-008/CEC-100-2008-008-CMF.PDF>]. Feed-in tariffs have resulted in rapid expansion in renewable energy development in Europe, and they have a similar potential to increase the pace of renewable energy development in California. Feed-in tariffs are expected to better enable renewable project developers to secure project financing, and as a result, increase the rate of renewables development at the distribution level (i.e. will not require new transmission, but can interconnect to existing electrical grid). By decoupling project development and financing costs from the market price referent (MPR), projects that were previously not viable at the MPR become possible. For additional information on MPR, see <http://www.cpuc.ca.gov/PUC/energy/Renewables/mpr>. According to CEC's January 2008 Overall Program Guidebook (http://www.energy.ca.gov/2007publications/CEC-300-2007-003/CEC-300-2007-003-ED2-CMF.PDF) biomass and biogas projects that a cost-based feed-in tariff would support include those utilizing landfill gas, anaerobic digestion of agricultural or animal waste, and biomass conversion of "any organic material not derived from fossil fuels, including agricultural crops, agricultural wastes and residues, waste pallets, crates, dunnage, manufacturing, construction wood wastes, landscape and right-of-way tree trimmings, mill residues that result from milling lumber, rangeland maintenance residues, biosolids, sludge derived from organic matter, and wood and wood waste from timbering operations."

In addition, the following would be supported: municipal solid waste conversion facilities that "uses a two-step process to create energy whereby in the first step (gasification conversion) a non-combustion thermal process that consumes no excess oxygen is used to convert MSW into a clean burning fuel, and then in the second step this clean burning fuel is used to generate electricity," and meets other applicable requirements. See page 17 of the CEC January 2008 Renewable Portfolio Standard Eligibility at http://www.energy.ca.gov/2007publications/CEC-300-2007-006/CEC-300-2007-006-ED3-CMF.PDF.

For additional information on the CEC feed-in tariff reports, see:

http://www.energy.ca.gov/2008publications/CEC-300-2008-003/CEC-300-2008-003-D.PDF

http://www.energy.ca.gov/2008publications/CEC-300-2008-009/CEC-300-2008-009-D.PDF

http://www.energy.ca.gov/2008publications/CEC-300-2008-003/CEC-300-2008-003-F.PDF

On February 14, 2008, the California Public Utilities Commission (PUC) made new feed-in tariffs available for the purchase of about 480 MW of renewable generating capacity from small California facilities (not more than 1.5 MW) for SCE and PG&E customers, expanding beyond the 250 MW for water and wastewater customers required by AB 1969 (Statutes of 2006, Chapter 731). On September 18, 2008, the CPUC added SDG&E customers and about 20 MW to the program cap. In 2008, SB 380 (Statutes of 2008, Chapter 544) put into statute the requirement that investor-owned utilities offer feed-in tariffs on a first-come-first-served basis until the program reaches 500 MW. These feed-in tariffs allow small renewable generators to sell power to the utility at predefined terms and conditions, without contract negotiations. To qualify for the feed-in tariffs, the facility must be an eligible renewable energy resource as defined in PU Section 399.12. Renewable generation technologies include biomass and biogas.

Although feed-in tariff policies currently in place in the United States are somewhat limited, feed-in tariffs are the most prevalent renewable energy policy used globally. There are a number of more-limited fixed-price payment policies in place in the United States that differ significantly from European policies. For example, several utilities in Wisconsin have adopted fixed-price tariffs for small biomass, wind, and solar photovoltaic (PV) generators used to supply their green pricing programs.

- ***Federal Feed-In Tariff***

A fixed- price standard offer contract was offered in California in the 1980s as part of the state's implementation of the Public Utility Regulatory Policies Act of 1978 (PURPA), which required power companies to purchase electricity from small renewable generators. The vast majority of renewable generating plants in California came online as a result of PURPA. A range of standard offer contracts were available in California, although Interim Standard Offer 4 was perhaps the most successful in bringing new renewable generation on-line. After 10 years, the energy payment under the fixed-price standard offer contracts (ISO4) switched to a variable price (called the short-run avoided cost) based on the price of natural gas. The ISO4 contracts also provide a capacity payment to the generator. By the time generators started reaching the 11th year of the ISO4 contracts, the short-run avoided cost was much lower than the amount they had been receiving for energy payments. As a result, renewable energy rates dropped so low that there was no incentive to invest; and the growth of the renewable energy in California slowed to a stop until state-based incentive programs were put in place in the 1990s. Variable-priced standard offer contracts paying the short-run avoided cost are still available in California for renewable generators registered as Qualifying Facilities with the Federal Energy Regulatory

Commission. For more information see CPUC, "Qualifying Facility (QF) Standard Offer Contracts: Summary of Standard Offer Contracts" at http://www.cpuc.ca.gov/PUC/energy/Retail+Electric+Markets+and+Finance/Electric+Markets/QF+Issues/qf_contracts.htm.

A bill for a federal feed-in tariff was proposed in 2008 by Representative Jay Inslee (D-WA). The purpose of the bill was to "spur rapid and sustainable growth in renewable electricity generation in the United States through priority interconnection, renewable energy payments, and for other purposes." The bill did not pass and is no longer active. For more information, see http://www.govtrack.us/congress/bill.xpd?bill=h110-6401. For a summary of key points of the bill, see: http://www.wind-works.org/FeedLaws/USA/RepresentativeInsleeIntroducesUSFeed-inTariffBill.html.

FEES

The IWMA and local jurisdictions tipping fees, described below, provide funding for diversion programs administered by CIWMB and local jurisdictions, respectively.

IWMA Disposal Tipping Fee

CIWMB's current maximum tipping fee of $1.40 per ton took effect on July 1, 2001. State law [AB 1220 (Eastin) Chapter 656, Statutes of 1993] caps the tipping fee at this level. The current fee of $1.40 per ton is so low as to offer little disincentive to landfilling. In the past, attempts to raise the tipping fee have been defeated (e.g., AB 1610, Nunez). In the event the tipping fee is increased, one option for these funds is developing a grant program that would provide new incentives for diversion activities. Since grant funding under the IWMA is not currently allowed for some activities, legislation would be required for new programs. For example, a potential program that has been discussed in the past would provide grants for organics diversion or environmental controls that would assist compost facilities in meeting local air district and RWQCB requirements.

Local Disposal Tipping Fee

Local disposal tipping fees are generally used to fund daily operational and closure costs of a landfill, but may also be used to fund recycling programs, litter abatement, public education efforts, and other programs. A local tipping fee can act as an incentive to encourage certain practices or disincentive to discourage other practices. For example, the disposal tipping fee for compostable organic materials can be set at a much higher rate than that set by the local composting facility. This would act as an incentive for haulers to bring these materials to the compost facility rather than the landfill.

Differential Fees

A **differential fee structure** can be used as a mechanism to incentivize products and manufacturing processes that result in less impact to the environment and public health through production of less solid waste, pollution, or toxic materials. It provides an escalating economic cost to activities as the level of an unwanted impact increases.

Extended Producer Responsibility (EPR) could be used to implement a differential fee system. EPR seeks to shift the responsibility for the end-of-life management of discarded products and materials from local government to private industry. This incentivizes producers to incorporate the costs of product collection, recycling, and/or disposal into the total product cost, and encourages product design, source reduction, and reuse so as to have a reduced impact on human health and the environment.

In January 2008, the CIWMB adopted the revised EPR Framework as an overall policy priority. The EPR Framework, if enacted in legislation, would give State government the authority, through regulation, to

address multiple products rather than implementing EPR through individual legislation for each product. EPR would allow the State to develop a public process to identify priority products, and then use this process to select products covered by a producer-led Product Stewardship Program. A key component of the EPR Framework is that it is result-based; producers would design programs and financing structures to meet State-specified goals for their particular product. AB 283 has been introduced, which could provide the statutory authority for CIWMB to implement the EPR Framework. To view bill, go to: http://www.leginfo.ca.gov/pub/09-10/bill/asm/ab_0251-0300/ab_283_bill_20090423_amended_asm_v97.pdf

In the case of an EPR program, differential fees can be used by a stewardship organization that producers pay into in order to fulfill their EPR requirements. These differential fees can drive green design, particularly when tied to product standards. For example, if producers of computers were required to manage their products under a stewardship program, and a stewardship organization was established to manage a program on behalf of a group of producers, the fees each producer pays for its product to be managed could be tied to a standard such as the Electrical Product Environmental Assessment Tool (EPEAT) standard. In this example, the producers whose products are more environmentally desirable would benefit financially through lower fees paid to manage their product.

EPR is just one example where differential fees could be used. Differential fees could also be used in combination with other economic tools such as higher tax credits for products meeting a certain standard or better loan interest rates for producing greener products.

ATTACHMENT 1