



# CAPCOA Greenhouse Gas Reduction Exchange Workshop

## Agenda

- 10:00 Overview of CAPCOA GHG Exchange (GHGRx.org)
- 11:30 A Walk Through the Online Platform
- 12:00 Lunch break
- 1:00-3:00 Detailed explanation of how protocols and projects meet the criteria of the GHG Exchange, Q & A
- 2:55 Closing Remarks



# CAPCOA's Greenhouse Gas Reduction Exchange

For webcast  
participants, email  
**[GHGRx@baaqmd.gov](mailto:GHGRx@baaqmd.gov)**



# What is CAPCOA?

- California Air Pollution Control Officers Association (CAPCOA.org)
- Non-profit association of California's 35 local air pollution control officers
- Current President is Jack Broadbent (BAAQMD)
- Forum for local air districts to work together on statewide issues



# CAPCOA's Work on GHGs and Land Use

**CAPCOA**  
CALIFORNIA  
AIR  
POLLUTION  
CONTROL  
OFFICERS  
ASSOCIATION

**CEQA & Climate Change**

*Evaluating and Addressing Greenhouse Gas Emissions from Projects Subject to the California Environmental Quality Act*

January 2008

**CAPCOA**  
CALIFORNIA  
AIR  
POLLUTION  
CONTROL  
OFFICERS  
ASSOCIATION

**Model Policies for Greenhouse Gases in General Plans**

*A Resource for Local Government to Incorporate General Plan Policies to Reduce Greenhouse Gas Emissions*

June 2009

**CAPCOA**  
CALIFORNIA  
AIR  
POLLUTION  
CONTROL  
OFFICERS  
ASSOCIATION

**Quantifying Greenhouse Gas Mitigation Measures**

*A Resource for Local Government to Assess Emission Reductions from Greenhouse Gas Mitigation Measures*

August, 2010



# CAPCOA's Greenhouse Gas Reduction Exchange (GHG Rx)



# The CAPCOA GHG Rx

**Mission Statement:** *Our mission is to provide a trusted source of high quality California-based greenhouse gas credits to keep investments, jobs, and benefits in-state, through an Exchange with integrity, transparency, low transaction costs, and exceptional customer service.*

**Objectives:** *To provide a secure, low-cost, high quality, greenhouse gas exchange for credits created in California. Financial resources invested in-state will help create local jobs and realize needed air pollution co-benefits from projects in California.*



# Purpose: Meet Requested and Observed Needs

- Provide options for offsite GHG mitigation under CEQA
- Create high quality credits verified by credible sources
- Create additional “tools” to meet local GHG reduction targets
- Keep co-benefits of GHG reduction in the community



# CAPCOA's Objectives

- Ensure high quality credits
- Make it easy for buyers and sellers to find each other
- Keep transaction costs low
- Keep financial investments, air quality and other co-benefits in the local community



# Additional Benefits

- Accelerate local GHG reduction
- Stimulate local economy
- Create a “feasible” mitigation measure for CEQA
- Meet state, regional and local climate stabilization goals



# Components of the Rx

- Online Platform
- Protocols
- Support materials
  - User Guide
  - Administrative Guidelines with standardized forms



# Anticipated Users

- Lead agencies
- CEQA project developers
- Land use consultants
- GHG reduction project implementers
- Individuals
- Private companies



# GHG Rx Key Features

- Credits are derived from voluntary projects in California
- No membership required
- Costs are kept low
- Builds on decades of CA Air District expertise with criteria pollutant emission reduction credits



# Participating Air Districts

- Bay Area AQMD
- Placer County APCD
- Sacramento Metropolitan AQMD
- South Coast AQMD
- San Joaquin Valley APCD
- Northern Sonoma APCD

Contact CAPCOA to list or find projects outside these air districts (916-441-5700)



# How the Rx Works

## Step 1: Submitting a Project

- A “project” is an activity that reduces GHG emissions and can thus generate GHG reduction “credits” for listing on the Rx
- Project developers = individuals, organizations, traders, brokers, etc.
- Projects follow CAPCOA-approved protocols
- Applications are submitted to the local air district



# How the Rx Works

## Step 1: Submitting a Project, cont.

### Credit listing information:

- Listing entity information (name, address, etc.)
- Credit project information (project description, location, protocol followed, implementation and expiration dates, etc.)
- Quantity of mitigation (minimum listing = 10 tons; minimum sale = 1 ton)
- History of credits (have they been listed elsewhere?)

### Supporting Information:

- Maps, photographs
- Calculations
- Relevant information on environmental justice areas
- Validation report demonstrating compliance with CAPCOA protocol
- Monitoring and/or validation (a.k.a. verification) schedule



# How the Rx Works

## Step 2: Air District Review

- Review of application for completeness
- Determination if project meets basic Rx criteria (real, additional/surplus, quantifiable, verifiable, enforceable and permanent)
- Verify protocol requirements are met
- Evaluate baseline and reduction calculations
- Conduct field visit
- Preparation of validation report



# How the Rx Works

## Step 3: Issue Legally Binding Instrument

Air District issues credit certificate with terms:

- Attests that the credits described in the application have been reviewed and meet all of CAPCOA's criteria
- Requires the applicant notify the Air District of any sale, transfer or retirement of the credits, to rescind/re-issue a new certificate
- Renders the credits invalid if the terms of the approval are not met.



# How the Rx Works

## Step 4: Listing Credits on the Rx

- Air District posts credits and all documentation on the Rx
- Seller notifies Air District of any credits sold, transferred or retired
- Sold, transferred, retired credits recorded by the Air District and shown as transactions
- Controls in place to eliminate any fraudulent or inappropriate listings



# How the Rx Works

## Step 5: Tracking Credits

- Issuing District tracks credits throughout their life
  - Initial validation and issuance, periodic reviews, changes in status
  - Updates information on GHG Rx
  - Each credit has a unique serial number: 100-BA-SC-BM-11-1-250
- Periodic audit of projects
  - Conducted by Participating Districts & CAPCOA
  - Pursuant to formal audit program guidelines
- Fraudulent listing
  - Immediate removal
  - Alerts participating air districts, others as needed



# CAPCOA's Greenhouse Gas Reduction Exchange

Questions?



# Approved Protocols

- Placer Biomass to Energy
- South Coast Boiler Efficiency
- Organic Waste (a.k.a. Livestock)\*
- Three Forest Protocols:
  - Improved Forest Management – I (ACR)
  - Improved Forest Management – II (CARB)\*
  - Improved Forest Management – III (CAR)\*
- Case-by-Case Protocol (for uncommon project types)\*

\*Provisionally approved by CAPCOA Board



# Ideas for Additional Protocols

- Waste Management
  - Organic Waste Digesters / Composting
- Agriculture – Field Crops:
  - Rice Cultivation and Management
- Carbon soil sequestration (Marin Carbon Project)
- Energy Efficiency for data centers
- Residential building energy upgrades



# Quality Control

- Participating air districts sign MOU with CAPCOA, requiring them to:
  - Follow the administrative rules of the GHG Rx
  - Use CAPCOA-approved criteria and protocols to evaluate credits
  - Issue binding terms for credits approved



# Quality Control

- Administrative Guidelines govern the function of the GHG Rx
  - ✓ Establish roles & responsibilities
  - ✓ Identify credit tracking requirements
  - ✓ Set quality assurance procedures for data and projects
  - ✓ Provide common forms
  - ✓ Include Users' Guides



# Quality Control

- GHG Rx Quality Criteria Guidance
  - Establish criteria for approval of protocols for projects
  - Include protocol for making case-by-case approvals of projects
- Overarching criteria - emission reductions must:
  - Be real, additional/surplus, quantifiable, validated (verified), enforceable, permanent
  - Occur in California
- Protocols reviewed by CAPCOA Engineering Managers, approved by CAPCOA Board



# GHG Rx Platform Demonstration

GHGRX.ORG - Windows Internet Explorer

http://ghgrx.org

Google Search Share More

Home Home Search

Page Safety Tools



## CAPCOA Greenhouse Gas Reduction Exchange (GHG Rx)

### MISSION STATEMENT

Our mission is to provide a trusted source of high quality California-based greenhouse gas credits to keep investments, jobs, and benefits in-state, through an Exchange with integrity, transparency, low transaction costs and exceptional customer service.

### CORE VALUES AND OPERATING PRINCIPLES

**Quality California Credits:** Participating air districts will only quantify credits for projects in California that follow protocols approved by the CAPCOA Board. Properly trained or certified air district staff or individuals that are CARB- certified, if applicable, will provide third-party verification of credit projects.

**Collaboration:** Participating air districts will work together to create and maintain an Exchange bulletin board that lists all available credits registered under respective air districts.

**Integrity:** The Exchange services will be provided with the utmost integrity so our customers can be confident that the credits they are providing, purchasing, or using are of the highest quality possible.

**Security:** The Exchange will be built with stringent measures to ensure that projects and trades are tracked carefully so credits are accurately issued and are used (or retired) only one time.

**Transparency:** Information on all aspects of the Exchange will be fully disclosed and easy to obtain to foster trust and respect.

**Low Transaction Costs:** The Exchange will seek to keep transaction and other costs as low as possible.

**Excellent Customer Service:** The Exchange, through its local air district network, will provide outstanding customer service to be responsive to customers needs and suggestions.

**Protocol Development:** Air Districts are encouraged to develop credit protocols that will result in GHG reductions that are real, quantifiable, additional, verifiable, enforceable and permanent.

### ABOUT US

Welcome to the CAPCOA GHG Rx. This site provides information on GHG credit projects within participating air districts. Credits available under the Exchange may be used to mitigate GHG emissions for CEQA or NEPA purposes or other applicable uses.

**SEARCH PROJECT BY:**

Air District	Choose	Project Type	Choose
Project ID	Choose	Project Name	Choose
		<input type="button" value="Search"/>	<input type="button" value="Clear"/>

**GHG-CREDIT AVAILABILITY**

Air District	GHG Credit Available	
	Achieved	Prospective
San Joaquin APCD	256171	0

**GHG FUNDING OPPORTUNITIES**

Click [here](#) for GHG grants and funding opportunities

**GHG BULLETIN BOARD**

Click [here](#) for bulletin postings of GHG credit requests

**RESOURCE LINKS**

[Administrative Guidelines](#)

[Protocol Forms](#)

[User Guide](#)



# Searching for Projects

**MISSION STATEMENT**  
 The mission is to provide a market-driven, high quality, California-based, greenhouse gas credits trading marketplace, plus, and benefits include, through an Exchange with integrity, transparency, fair financial costs and exceptional customer service.

**CORE VALUES AND OPERATING PRINCIPLES**  
**Quality California Credits:** Participating air districts will only qualify credits for projects in California that have produced up to the CAPCOA Board. Projects must be verified an district staff is knowledgeable on CARB, certified if applicable, and fully verify verification of their projects.  
**Collaboration:** Participating air districts will work together to create opportunities on Exchange based on board that all air districts credit registered under respective air districts.  
**Integrity:** The Exchange cannot will be provided with the utmost integrity to our customers can be verified that the credit quality are providing partnership, in using one of the highest quality possible.  
**Security:** The Exchange will be built with strong measures to ensure that projects and credits are tracked carefully for credits are accurate based and are used for identifying any loss.  
**Transparency:** Information on all aspects of the Exchange will be fully disclosed publicly to all stakeholders and will report.  
**Low Transaction Costs:** The Exchange will seek to keep transaction and other costs as low as possible.  
**Excellent Customer Service:** The Exchange, through its local air district network, will provide outstanding customer services to be responsive to customer needs and suggestions.  
**Proactive Development:** Air Districts are encouraged to develop credit projects that will result in GHG reductions that are not speculative, additional, verifiable, enforceable and permanent.

**ABOUT US**  
 Statement by Board of Directors (2011-2012). This site provides information on CAPCOA's mission, participation, and benefits. Credits available under the Exchange may be used to mitigate GHG emissions for CEQA or NEPA purposes or other applicable uses.

**SEARCH PROJECTS**

Air District:  Project Type:

Project ID:  Project Name:

available under the Exchange may be used to mitigate GHG emissions for CEQA or NEPA purposes or other applicable uses.

**SEARCH PROJECT BY**

its for Property

Air District:  Project Type:

Project ID:  Project Name:

maintain an effective air

**GHG CREDIT AVAILABILITY**

so our or using

Air District	GHG Credit Available	
	Achieved	Prospective
	MtCO <sub>2</sub> e	



# Searching for Projects, cont.

[Home](#) [Back](#)

SEARCH PROJECT BY

Air District  Project Type  Project ID  Project Name

Search results for projects by San Joaquin APCD

ID	Name	Developer	Description	Additionality	Credit Issuance	Pictures	Location Notes	Project Location	County	Air District
101-SJ-FR-TR-08-964	Anderson Clayton Copr/Idria #1	Anderson Clayton Copr/Idria #1	Case-by-Case	All Regulations	On-Going	Site AdjLU Map	22110 W. Mt. Whitney Ave.	Five Points	Fresno	San Joaquin APCD
102-SJ-FR-TR-08-5286	Guardian Industries Corp	Guardian Industries Corp	Case-by-Case	All Regulations	On-Going	Site AdjLU Map	11535 E Mountain View Ave	Kingsburg	Fresno	San Joaquin APCD
103-SJ-FR-TR-06-432	Eagle Valley Ginning LLC	Eagle Valley Ginning LLC	Case-by-Case	All Regulations	On-Going	Site AdjLU Map	39936 W North Ave	Mendota	Fresno	San Joaquin APCD
104-SJ-KG-TR-07-381	Anderson Clayton Corp/Hanford	Anderson Clayton Corp/Hanford	Case-by-Case	All Regulations	On-Going	Site AdjLU Map	10386 Iona Ave	Hanford	Kings	San Joaquin APCD
105-SJ-FR-TR-06-402	Cantua Cooperative Gin, Inc.	Cantua Cooperative Gin, Inc.	Case-by-Case	All Regulations	On-Going	Site AdjLU Map	16997 Derrick Ave	Cantua Creek	Fresno	San Joaquin APCD
106-SJ-FR-TR-06-679	Farmers Firebauch Ginning Co.	Farmers Firebauch Ginning Co.	Case-by-Case	All Regulations	On-Going	Site AdjLU Map	35851 W Bullard Ave	Firebaugh	Fresno	San Joaquin APCD
107-SJ-FR-TR-06-718	Anderson Clayton Corp/Burrel	Anderson Clayton Corp/Burrel	Case-by-Case	All Regulations	On-Going	Site AdjLU Map	11310 W Elkhorn Ave	Burrel	Fresno	San Joaquin APCD
108-SJ-FR-TR-07-344	Britz Gin Partnership II	Britz Gin Partnership II	Case-by-Case	All Regulations	On-Going	Site AdjLU Map	25500 W Mt. Whitney	Five Points	Fresno	San Joaquin APCD
109-SJ-FR-TR-05-241	Anderson Clayton Corp/Butte	Anderson Clayton Corp/Butte	Case-by-Case	All Regulations	On-Going	Site AdjLU Map	26865 S Butte Ave	Five Points	Fresno	San Joaquin APCD
110-SJ-FR-TR-08-856	Westside Farmers COOP #2 & #3	Westside Farmers COOP #2 & #3	Case-by-Case	All Regulations	On-Going	Site AdjLU Map	28285 W Clayton Ave	Tranquility	Fresno	San Joaquin APCD
111-SJ-FR-TR-08-251	Eagle Valley Ginning, LLC	Eagle Valley Ginning, LLC	Case-by-Case	All Regulations	On-Going	Site AdjLU Map	27480 S Bennett Rd	Firebaugh	Fresno	San Joaquin APCD
112-SJ-ME-TR-05-197	Anderson Clayton Corp	Anderson Clayton Corp	Case-by-Case	All Regulations	On-Going	Site AdjLU Map	18998 W Cotton Gin Rd	Los Banos	Merced	San Joaquin APCD



# Searching for Projects, cont.

CAPCOA Greenhouse Gas Reduction Exchange (GHG R)

SEARCH PROJECT BY

Air District: Placer County APCD | Project Type: Choose | Project ID: Choose | Project Name: Choose | Search | Clear | Show All Transactions

Search results for projects by Placer County APCD

Name	Developer	Description	Addressability	Credit Resource	Pictures	Location Notes	Project Location	County	Air District	Protocol	Achieved GHG Credits (MTCO2e)	Proposed GHG Credits (MTCO2e)	Available Amount (Mt)	Asking Price (\$/MTCO2e)	District Admin Fee	Documents	Notes
ISO Biomass to Energy - UBFS THE ISO Project	PCAPCD	Biomass to Energy	All Regulations	Annual	Site ASL/U Map			Placer	Placer County APCD	Forest 1 (ACR)	2150	0	1950	22.00		<a href="#">View</a>	Notes
Use Biomass to Energy	PCAPCD	Biomass to Energy	All Regulations	Annual	Site ASL/U Map		Tahoe Basin	Placer	Placer County APCD	Forest 1 (ACR)	2150	0	89	24.00		<a href="#">View</a>	Notes

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Search | Clear | Show All Transactions

Available GHG Credits (MTCO2e)	Available Amount (Mt)	Asking Price (\$/MTCO2e)	District Admin Fee	Documents	Notes
	1950	22.00		<a href="#">View</a>	Notes
	89	24.00		<a href="#">View</a>	Notes

View 1 - 2 of 2



# Searching for Projects, cont.

Home Back

Search Clear Show All Transactions

Available Amount (Mt)	Asking Price (\$/MtCo2e)	District Admin Fee	Documents	Notes
<a href="#">1950</a>	<a href="#">22.00</a>		<a href="#">View</a>	Notes
<a href="#">89</a>	<a href="#">24.00</a>		<a href="#">View</a>	Notes

View 1 - 2 of 2



SEARCH BY PROJECT/TRANSACTION TYPE

Project Type Choose Project ID 237-PL-PL-BM-C Transaction Type Choose Search Field Name Date With Equals

Transaction Type	Date	Amount(MT)	Price(\$/MT)	Serial Numbers	Buyer Contact	Listing Contact	Notes
New Deposit	06/20/2013	2150		237-PL-PL-BM 2013 1-2150		PCAPCD 5307452330 bspring@placer.ca.gov	
Sale	06/24/2013	200	23.00	237-PL-PL-BM 2013 1-200	John Smith	Placer	Used for mitigation for a CEQA project

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# Searching for Projects, cont.

Home Back

Search Clear Show All Transactions

Active GHG Credits (2e)	Available Amount (Mt)	Asking Price (\$/MtCo2e)	District Admin Fee	Documents	Notes
<a href="#">1950</a>		<a href="#">22.00</a>		<a href="#">View</a>	Notes
<a href="#">89</a>		<a href="#">24.00</a>		<a href="#">View</a>	Notes

View 1 - 2 of 2

### Listing Information

Project ID	: 237-PL-PL-BM-08-2150
GHG Offset Verification Entity	: TBD
Verification Credential	: GHG Employee Training
Initial GHG Offset Owner	: PCAPCD
Listed By	: PCAPCD
Listing Type	: Agency
Listing Contact	: Bruce Springsteen
Listing Phone	: 5307452330
Listing Email	: bspring@placer.ca.gov
GHG Credits (MtCO <sub>2e</sub> )	: 2150
Asking Price (\$/GHG Offset)	: 22.00
District Admin Fee	:
District Contact	: Bruce Springsteen
District Contact Phone	: 5307452330
District Contact Email	: apcd@placer.ca.gov



# Searching for Projects, cont.

Home Back

Search Clear Show All Transactions

Project	Available Amount (Mt)	Asking Price (\$/MtCo2e)	District Admin Fee	Documents	Notes
	<a href="#">1950</a>	<a href="#">22.00</a>		<a href="#">View</a>	Notes
	<a href="#">89</a>	<a href="#">24.00</a>		<a href="#">View</a>	Notes

View 1 - 2 of 2

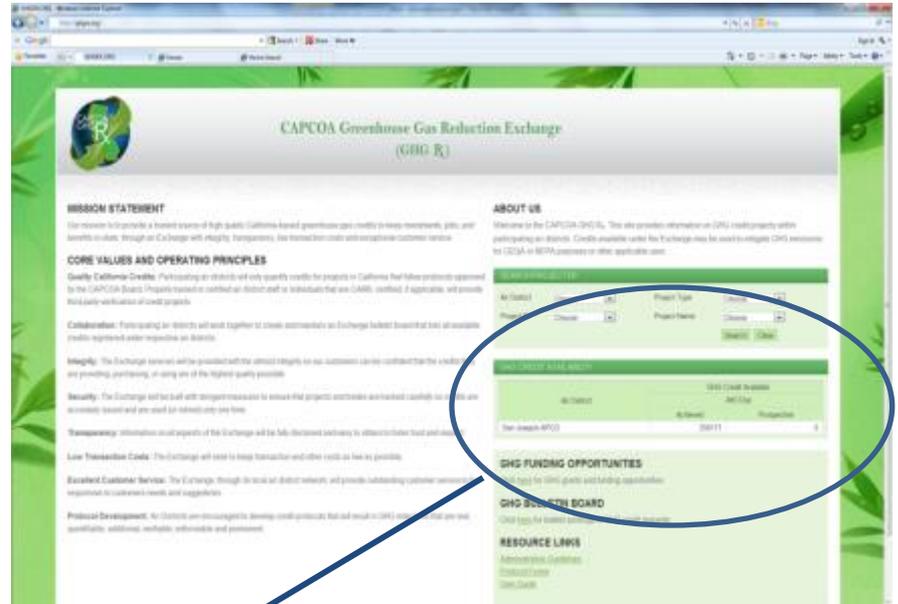
Project Documents for "237-SSO Biomass to Energy - USFS TNF SSO Project"

Entry Date	Document Title	Document Type
11/18/2013	<a href="#">Project Report</a>	APPL

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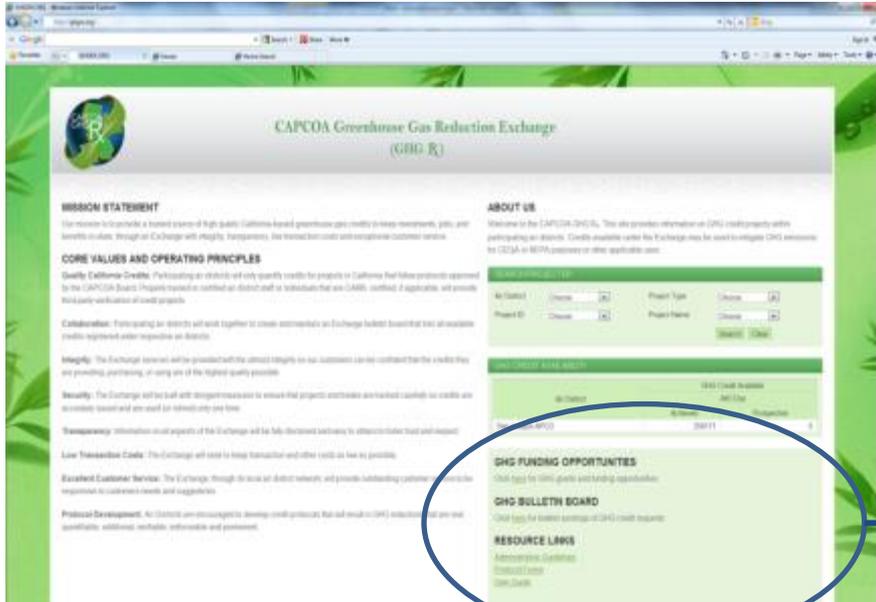
# Available Credits



GHG CREDIT AVAILABILITY		
Air District	GHG Credit Available <i>MtCO<sub>2e</sub></i>	
	Achieved	Prospective
San Joaquin APCD	256171	0



# Support Pages & Materials



## GHG FUNDING OPPORTUNITIES

Click [here](#) for GHG grants and funding opportunities

## GHG BULLETIN BOARD

Click [here](#) for bulletin postings of GHG credit requests

## RESOURCE LINKS

[Administrative Guidelines](#)

[Protocol Forms](#)

[User Guide](#)



# GHG Funding Opportunities

« 1 2 » Displaying 1 - 5 of 6 item(s)

**Title Ref Id : Home Energy Savings**

Description: SCAQMD, in partnership with several utilities has funding available for home energy efficiency and weatherization projects in the Coachella Valley. There is no specific due date; the program will continue until funding is expended. For more information, call 1-(855)-396-3503 or visit [www.aqmd.gov](http://www.aqmd.gov).

Source: SCAQMD

Contact: Arron Katzenstein 9093962219 [AKatzenstein@aqmd.gov](mailto:AKatzenstein@aqmd.gov)

**Title Ref Id : 14-511**

Description: NSF/DOE PARTNERSHIP ON ADVANCED FRONTIERS IN RENEWABLE HYDROGEN FUEL PRODUCTION VIA SOLAR WATER SPLITTING TECHNOLOGIES 2014-16 The goal of the partnership is to leverage the complementary missions of applied research, development and demonstration (DOE) and use-inspired fundamental research and education (NSF) to address issues of national importance that impact the sustainable production of fuels using renewable resources. For more information: [http://www.nsf.gov/funding/pgm\\_summ.jsp?pims\\_id=504959](http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=504959)

Source: National Science Foundation/Department of Energy

Contact: Ram B. Gupta 7032922407 [ragupta@nsf.gov](mailto:ragupta@nsf.gov)

**Title Ref Id : PD 14-7643**

Description: The National Science Foundation Environmental Sustainability program supports engineering research in four general research areas: Industrial Ecology, Green Engineering, Ecological Engineering and Earth Systems Engineering. All proposed research should be driven by engineering principles, and be presented explicitly in an environmental sustainability context. For more information: [http://www.nsf.gov/funding/pgm\\_summ.jsp?pims\\_id=501027](http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=501027)

Source: National Science Foundation

Contact: Bruce Hamilton 7032927066 [bhamilto@nsf.gov](mailto:bhamilto@nsf.gov)

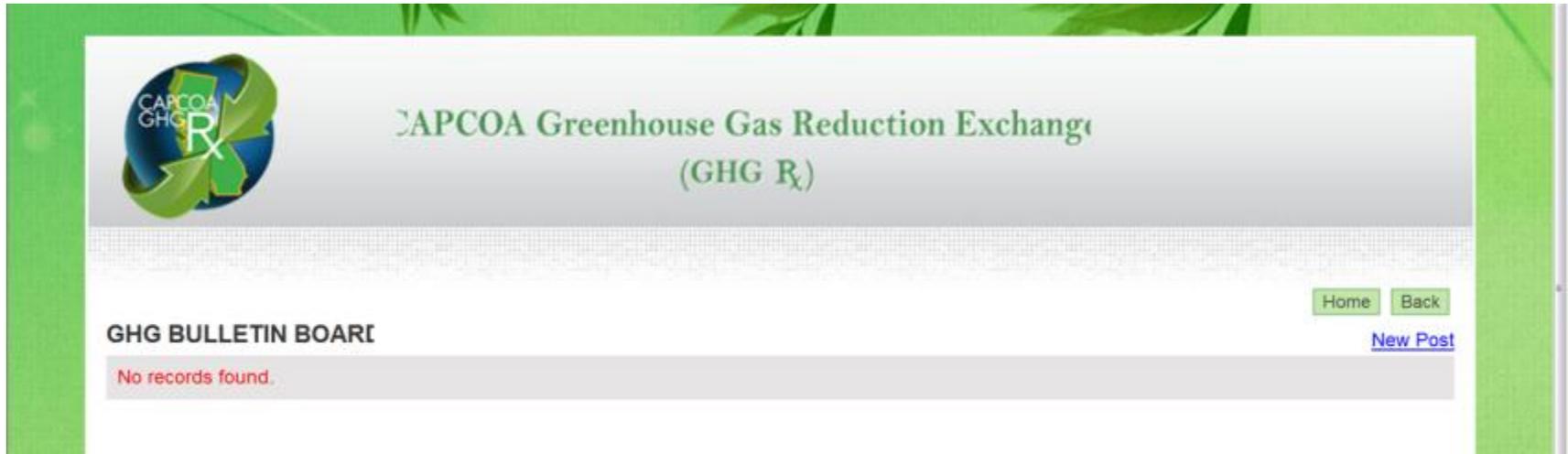
**Title Ref Id : EPA-OAR-OTAQ-14-02**

To Excel

« 1 2 » Displaying 1 - 5 of 6 item(s)



# GHG Bulletin Board



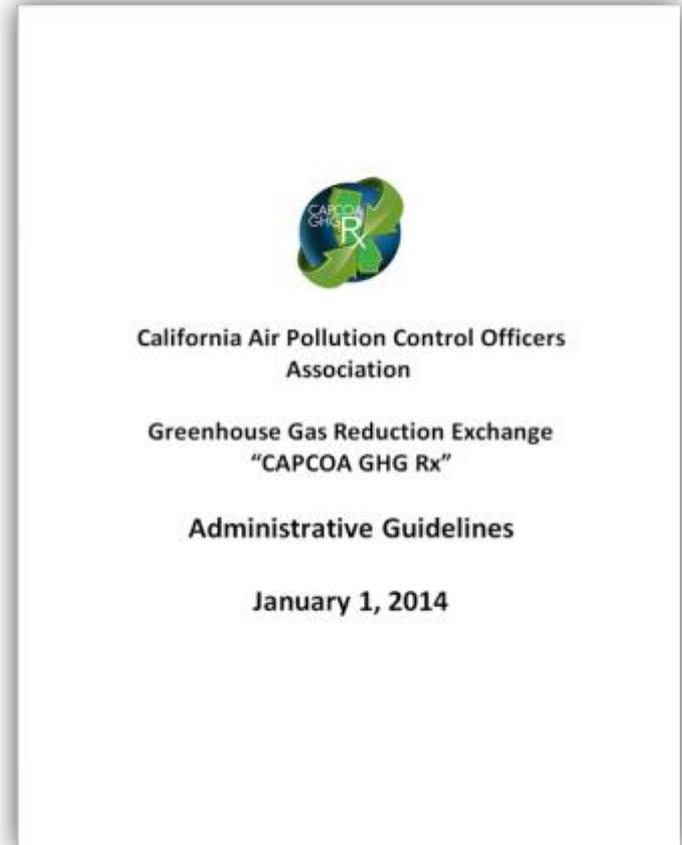
## Listing for:

- Buyers seeking to purchase credits
- Parties seeking funding to develop projects



# Resource Links

- **Administrative Guidelines**
  - Background, purpose
  - Functionality
  - Users, roles
  - Quality control
  - Rules for participation
  - Standardized forms





# Resource Links

- Protocols

- Full, adopted protocols:
  - Biomass-to-energy
  - Boiler Efficiency
  - Organic Waste (Livestock)\*
  - Forest Management – I
  - Forest Management – II\*
  - Forest Management – III\*
  - Case-by-case\*



\*Provisionally approved by CAPCOA Board



# Resource Links

- User Guide
  - Use of GHG Rx website
  - Screenshots
  - More detailed instruction

SEARCH PROJECT BY

Air District: Bay Area AQMD | Project Type: Boiler Efficiency | Project ID: Choose | Project Name: Choose | Search | Clear | Show All Transactions

Search results for projects by Bay Area AQMD -> Boiler Efficiency

ID	Name	Developer	Description	Pictures	Location Notes	City	County	Air District	Protocol	Achieved GHG Credits (MTCO2e)	Prospective GHG Credits (MTCO2e)	Available Amount(Mt)	Seller Asking Price (\$/MTCO2e)	District Admin Fee	Document
117-BA-AM-BE-13-0	Everygreen Waste Energy Conversion Plan	GHGs RUS	Boiler Efficiency	<a href="#">Site AdjLU Map</a>	EJ	Concord	Alameda	Bay Area AQMD	P5	0	40000	0	7.00	11.00	View
118-BA-MA-BE-11-0	Juniper Trails Restoration project	Green Forestry	Boiler Efficiency	<a href="#">Site AdjLU Map</a>	EJ	Santa Monica	Marin	Bay Area AQMD	CARB-10.3	0	40000	0	8.80	234.00	View
120-BA-MA-BE-13-0	City of Bakersfield Boiler Upgrade	GHGs RUS	Boiler Efficiency	<a href="#">Site AdjLU Map</a>	EJ	Los Angeles	Marin	Bay Area AQMD	P5	0	40000	0	8.90	11.00	View
176-BA-AM-BE-12-0	Saturn Trails Restoration project4	sc	Boiler Efficiency	<a href="#">Site AdjLU Map</a>			Alameda	Bay Area AQMD	pc	0	40000	0	1.00	1.00	View
208-BA-AM-BE-13-200	KYK Dairy Farm7	pd	Boiler Efficiency	<a href="#">Site AdjLU Map</a>	In	Ic	Alameda	Bay Area AQMD	P6	600	160	400	20.00	20.00	View
211-BA-NA-BE-13-500	Test Project	AQMD	Boiler Efficiency	<a href="#">Site AdjLU Map</a>		BREA	Napa	Bay Area AQMD	P1	500	1100	500	1.00		View

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Annotations: Red 'Q' points to 'Air District' and 'Available Amount(Mt)'. Red 'R' points to 'To Excel'.



# CAPCOA's Greenhouse Gas Reduction Exchange

## Questions?

Bay Area Air Quality Management District  
GHG Rx Agency Administrator:

Abby Young

[ayoung@baaqmd.gov](mailto:ayoung@baaqmd.gov)

415-749-4754



# CAPCOA's Greenhouse Gas Reduction Exchange

For webcast  
participants, email  
**[GHGRx@baaqmd.gov](mailto:GHGRx@baaqmd.gov)**



# Requirements for High Quality Credits

## Basic Rx Criteria for Protocols & Projects

- Real: emission reductions have actually occurred due to actions taken by applicant
- Additional/Surplus: can not be required by any law, rule or other requirement, or is a reduction in excess of that required by rule, law, etc.
- Quantifiable: establish baseline and compare reductions; transparent, sound, documented quantification
- Verifiable: the action taken to produce credits can be audited
- Enforceable: there is an enforceable mechanism, such as a permit, condition of approval, or contract
- Permanent: emission reductions continue to occur for the life of the reduction project



# Requirements for High Quality Credits

## “Real”

Reductions must be determined to be real:

- Reduction must have *actually* occurred
- Must be a quantifiable and validated reduction
- Reduction must be tied to a specific action or event (a “project”)
  - E.g. a reduction from a particular device, process, or practice due to an action taken by the applicant
- Reductions that are required due to local, state or federal requirements do not satisfy Rx program requirements
- Reductions must consider if the project results in emission increases elsewhere within the identified geographic boundary



# Protocol Example

## “Real”

- Often addressed within requirements for other criteria (Permanent, Quantifiable)
- Must have clear direction on determining pre- and post- project emissions
  - Baseline: what would have happened in the absence of the project
- Must account for all relevant GHG emissions and removals
  - Forest Protocol: shift of grazing to land outside protected forest area



# Project Example

## “Real”

### Glass manufacturer switches from fuel oil to natural gas

- Document the change has actually occurred (receipts, photos, inspection)
- Establish baseline (fuel oil) and show net GHG reduction after the project (natural gas)
- Demonstrate the fuel switch is a permanent (physical modification of equipment)
- Document the project is permanent (cannot revert back to old equipment without a new permit)
- Demonstrate that manufacturing activities have not “leaked” to other facilities or manufacturers



# Requirements for High Quality Credits

## “Additional/Surplus”

Reductions must not be otherwise required:

- Must pass two tests
  - Regulatory Surplus: must not be due to an action that is required by law, rule, or other requirement. This also includes as a result of court order, permitting, or legally binding mandate
  - Fiscal: the action would not have likely taken place in the absence of a market for the resulting GHG emission reduction credit or in the anticipation of such a future market for such a reduction
- Reductions at facilities covered by California’s Cap & Trade regulation are not eligible



# Protocol Example

## “Additional/Surplus”

- Not required by any rule, law, etc.
  - Organic Waste Protocol: there are no waste bans in any jurisdiction served by the project or the affected waste stream
- Not already in place for a given operation
  - Organic Waste Protocol: affects waste stream that was not already being diverted from landfill
- Fiscal test: the project was implemented with the intent of securing funding through sale of GHG credits



# Project Example

## “Additional/Surplus”

Diversion of food waste from landfill to methane digester

- Attest that project is not required by any rule, law, etc.
- Document that no jurisdiction served by the project has in force any ban on waste products included in the project’s waste stream
- Demonstrate that the project’s entire waste stream is being diverted from landfill
- Address how selling credits can potentially incentivize the project’s implementation or ongoing economic viability



# Requirements for High Quality Credits

## “Quantifiable”

Applied tools or tests must be reliable & consistent:

- Require specific tools, emission factors and methodologies that are most relevant to the project type(s)
- Set conservative boundaries for uncertainty
- Requires establishing a baseline emission level and emission reduction resulting from the project
  - Comparing baseline emissions and *actual* post-project emissions; or
  - Comparing baseline emission to *potential* post-project emissions, if enforced through a mechanism (e.g. a permit)
- Require adequate documentation



# Protocol Example

## “Quantifiable”

### Biomass-to-Energy Protocol:

- Provide data on quantity, moisture content, energy content of biomass
- Document amount of fossil fuel displaced by energy produced from biomass
- Document amount of GHG emissions resulting from ancillary biomass handling, processing and transport operations
- Determine baseline emissions by defining baseline disposal methods and resulting GHG emissions



# Project Example

## “Quantifiable”

### Biomass-to-Energy project:

- Provide sampling and analysis data to determine moisture content of biomass
- Provide documentation on annual average efficiency level of the biomass facility
- Determine energy generation efficiency through ratio of energy produced to total fuel heat input rate
- Provide emissions factor for CO<sub>2</sub>e from energy generation displaced by the project



# CAPCOA's Greenhouse Gas Reduction Exchange

Questions?



# Requirements for High Quality Credits

## “Verifiable”

Actions are subject to being audited:

- Sufficient evidence and information must be provided to allow verifiers to determine the credibility of emission reductions
- Use consistent methodologies to enable comparisons across similar projects
- Must require rigorous and complete reporting
- Requires verification on a periodic basis



# Protocol Example

## “Verifiable”

### Boiler Efficiency Protocol:

- Requires regular monitoring of system performance by project developer
- Requires project performs consistent with equipment manufacturer’s recommendations
- Prescribes calculation procedures, monitoring and reporting parameters
- Includes the review of documentation, monitoring data, and procedures/ tools used to estimate GHG reductions



# Project Example

## “Verifiable”

### Boiler Efficiency Project Information:

- Evidence of start-up
- Make, model, serial # of all new equipment
- Method/equipment used to determine emissions (fuel meter), including calibration methods and results
- Fuel meter data documenting annual fuel use
- Annual calculations of emission reductions and any co-benefits



# Requirements for High Quality Credits

## “Enforceable”

A mechanism to ensure the action is implemented:

- Legal instrument is in place (e.g. a permit, contractual agreement, conditions of approval)
- Can include District issued permits, local agency conditions of approval, or contract between project proponent and lead agency
- Must specify design, operational, usage limits, monitoring, and recordkeeping requirements that are consistent with parameters used to quantify reductions
- If “pre-project” reductions are credited, responsibility falls to the entity *issuing* the emission reduction credits



# Protocol Example

## “Enforceable”

### Boiler Efficiency Project:

- Legal instrument = permit from local air district specifying equipment requirements and/or emissions limits
- Annual reporting and technical requirements of reports are specified in the permit
- Permit requires source testing of throughput and emissions



# Project Example

## “Enforceable”

A mechanism to ensure the action is implemented:

- Legal instrument is in place (e.g. a permit or contractual agreement)
- Can include District issued permits, local agency conditions of approval, or contract between project proponent and lead agency
- Must specify design, operational, usage limits, monitoring, and recordkeeping requirements that are consistent with parameters used to quantify reductions
- If “pre-project” reductions are credited, responsibility falls to the entity *issuing* the emission reduction credits



# Requirements for High Quality Credits

## “Permanent”

### Ensures longevity of a reduction:

- Reductions must continue to occur for the reasonable expected life of the emission reduction project
- Can be affected by the shift, or “leakage” of emissions to locations or processes outside the project boundary
- Project boundary is defined by:
  - Geographical implementation area
  - Types of GHG sources and sinks involved
  - Expected duration of the project



# Protocol Example

## “Permanent”

### Forest Management Protocol:

- Requires monitoring of all onsite carbon stocks
- Requires a “forest buffer account” to insure against reversals (wildfires)
- Demonstrate no “leakage,” e.g., preservation of forest is not shifting grazing activities elsewhere
- Contains guidance on risk assessments for reversals and leakage



# Project Example

## “Permanent”

### Forest Management Project:

- Pay into “forest buffer account” based on a project-specific risk evaluation
- Conduct annual inventories of carbon stock to determine net carbon impacts, accounting for reversals and leakage



# CAPCOA's Greenhouse Gas Reduction Exchange

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# CAPCOA's Greenhouse Gas Reduction Exchange

## Questions?

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