



DEBRIEFING ON REPORTING & VERIFICATION

June 12, 2008

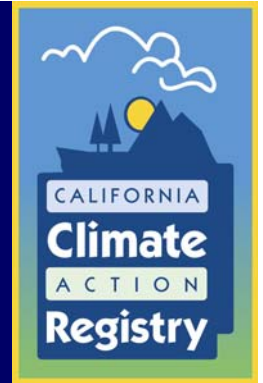
California Climate Action Registry

Purpose of the Debrief



- Overview of GHG emissions reports
- Review how the California Registry staff conducts final reviews of verified reports
- Discuss the most common reporting errors
- Identify areas for improvement
- Most importantly, get feedback from reporters & verifiers!

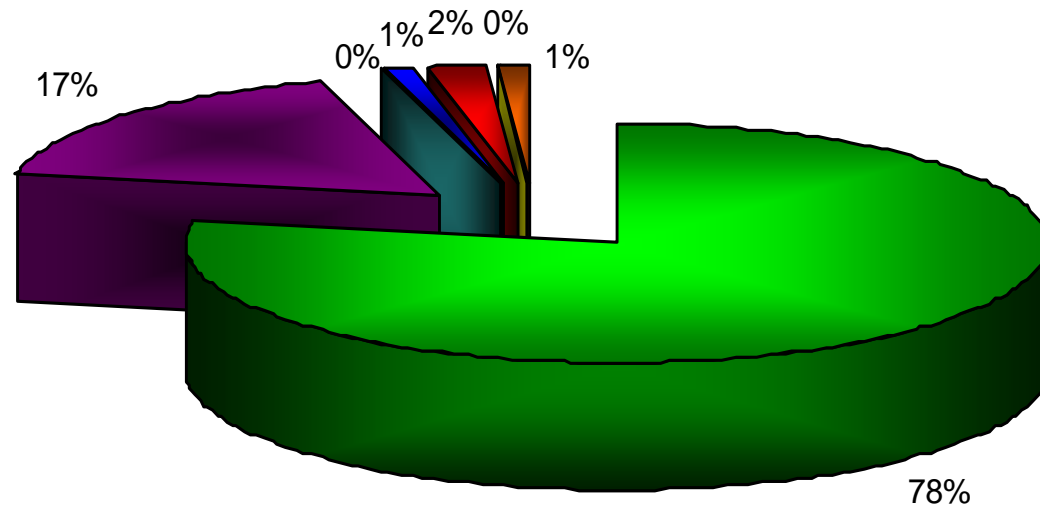
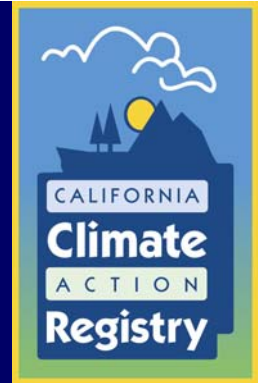
CONGRATULATIONS!!!



- Congrats to all 2006 Reporters & Verifiers, job well done!!
- 151 California Registry Members reporting in 2006 - that's a whole lot of Climate Action Leaders!!
- Overall there have been 628 million metric tCO₂e verified & registered through CARROT



Total Verified GHG Emissions by Source (2000- 2006)



■ Stationary Combustion

■ Indirect Emissions/Purchased Electricity

■ Fugitive Emissions

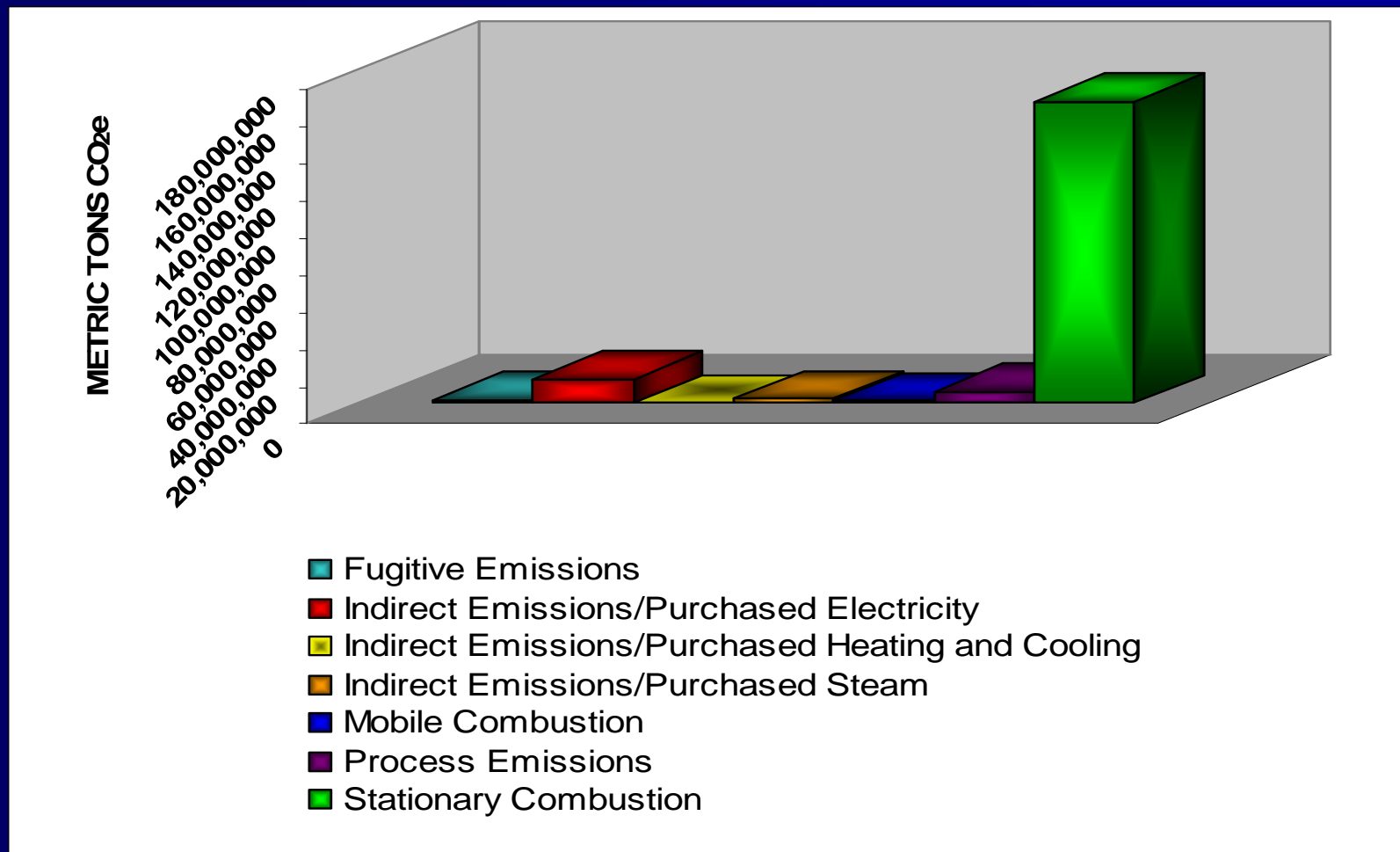
■ Mobile Combustion

■ Process Emissions

■ Indirect Emissions/Purchased Heating and Cooling

■ Indirect Emissions/Purchased Steam

Total Verified GHG Emissions by Source (2006 only)



TIPS: Reporting EY2007



- Did you know you can create a new reporting year using the previous year as a template?

The screenshot shows the reporting interface for 'Marie's Trees'. The left sidebar contains a 'Summary' section with the following details:

- Year: 2006
- Entity Status: Initiated
- Scope: CA, US, and Worldwide
- Level: Facility
- Revision Number: 011

Below the summary are three links: 'Delete current reporting year', 'Create a new reporting year', and 'Create a new reporting year using the current reporting year as template'. A red arrow points to the third link. At the bottom of the sidebar is a navigation menu with 'Main', 'Entity Information', 'Entity Information', and 'Entity Info (Continued)'.

The main content area has a navigation bar with tabs: 'Main', 'Entity Information', 'User Management', 'Facilities', 'Emission Data', 'Optional Reporting', and 'Reports'. The 'Entity Information' tab is active, showing the entity name 'Marie's Trees'.

There are two summary tables:

Entity Emissions Summary (CO2 Equivalent)

	Stationary	Mobile	Process	Fugitive	Indirect	Optional	To
California		1			0	24,477	
Total		1			0	24,477	

Facility Status Summary

Facility Status	Number of Facilities	
Total	2	<input type="button" value="Check"/>
Pending	2	<input type="button" value="Check"/>

TIPS: Reporting EY2007 (2)



- Recent CARROT updates:
 - **Required** fields on **second** page of Entity Description

Main
Entity Information
User Management
Facilities
Emission Data
Optional Reporting
Reports

Summary

Year: 2007

Entity Status: Initiated

Scope: CA, US, and Worldwide

Level: Facility

Revision Number: 001

- [Main](#)
- ▶ **Entity Information**
 - [Entity Information](#)
 - ▶ **Entity Info (Continued)**
- [User Management](#)
- [Facilities](#)
- [Emissions Data](#)
 - [Entity Emissions Summary](#)
 - [Facility Emissions Summary](#)
 - [Facility Emissions Detail](#)
- [Optional Reporting](#)
 - [Emission Performance](#)
 - [Emission Documents](#)
- [Reports](#)

Marie's Trees

Movement Report

🔒 Please list the main factors that influenced the Entity emissions performance (such as acquisition, divestiture, outsourced activities, insourced activities, changes in production, and changed calculation methodology, etc) during the reporting year. To add a new factor, please click the 'Add Factor' button below.

Factor	Details	CO2e Amount	Unit
Increase in Production ✖	Marie's Trees has added 10 additional companies from which it will collect recycled paper products. Processing this additional paper will increase our emissions in 2007.	5,000	metric ton
Acquisition ✖	Opened 5 new locations in CA (5/10/2007)	8,000	metric ton

Add Factor

TIPS: Reporting EY2007 (3)



- **Required** fields on **second** page of Entity Description (cont'd.)

Organizational Boundary:

- Management Control - Operational Criteria
- Management Control - Financial Criteria
- Equity Share

Please describe the primary emission factors and methodologies used in the calculation and tracking of GHG emissions.

Marie's trees used the GRP 3.0 and the default emission factors in CARROT to report and inventory our 2007 GHG emissions.

Please describe the type of organization that is reporting, i.e., department/agency/subsidiary/parent.

Marie's Trees is dba Tree's Inc. Tree's Inc. is a subsidiary of Tree's International. Tree's International is not yet a member of the California Registry.

Tree's Inc. has offices in California, Maine, and Florida.

PG&E Climate Smart program participant

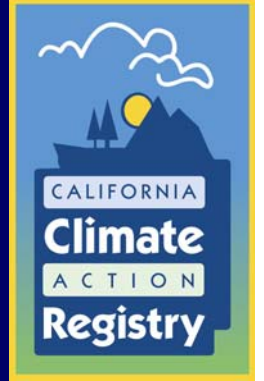
Back

Save

Reset

Next

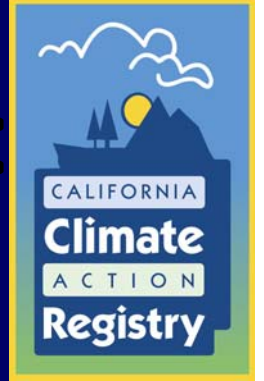
California Registry Review of Verified CARROT Reports



What we look for:

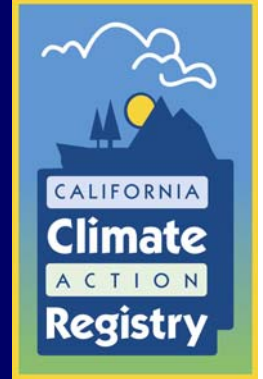
- Consistent reporting between members to ensure the quality of data
- Correct protocol used, baselines defined, sources identified, correct gasses reported, etc.
- Verification opinion & entity description acceptable
- California Registry Review – to ensure reports meet minimum reporting requirements
- Note: It's ok to make mistakes!!

California Registry Review: the Form



- To ensure consistency between California Registry staff reviews of verified CARROT reports we have developed a staff review form.
- This form is constantly evolving to help us improve our reviews.
- Open [California Registry Review form](#)

Reporting Areas for Improvement



- Unverified sections of the CARROT public & private report
 - **Entity description & Primary calculation method** should be clear and mirror correct protocol use.
 - Source labeling is very important, good practice to provide notes & source details

Annual Emissions Report

Marie's Trees

(Emissions from CA and US operations)

Report Generated On: 06/06/2008 09:47 am PT



Portland, CA 90051 United States

www.maries_trees.org

213-891-1444

marie@climateregistry.org

Contact: Marie Massa

Industry Type: Pulp & Paper

NAIC Code: 3221-Pulp, Paper, and Paperboard Mills

SIC Code: 2611-Pulp Mills

Description: This is a sample organization that has been created within CARROT for the purposes conducting New Member Orientations and CARROT Trainings. This fictitious organization creates recycled paper products for businesses in southern California. It collects recyclable paper materials from local businesses and processes these materials to create 100% recycled paper which is then sold to local businesses. This company is an environmentally conscious organization.

Primary Calculation

Methodologies: Used Management control with operational criteria to determine organizational boundaries.

Organizational structure disclosure:

Marie's Trees is dba Tree's Inc. Tree's Inc. is a subsidiary of Tree's International. Tree's International is not yet a member of the California Registry.

Tree's Inc. has offices in California, Maine, and Florida.

Legend

Blue = required

Orange = optional

Source	Emission Category	Calc Method	Fuel Name	Fuel/ Mileage	Emission Factor	Fract. Oxid.	GHG	Amount	Unit	Methodol./ Source	General Info	
All Electric bills	Purchased Electricity	CARROT		18000 KWh	0.88 lb/KWh		CO2	7.17	metric ton		This includes all bills from SCE, PGE, etc. 	
Back-up generators	Stationary Combustion	CARROT	Distillate Fuel Oil (#1, 2 & 4)	100 gallon	10.15 kg/gallon	100	CO2	1.02	metric ton			
Biodiesel use	Biogenic - Mobile	CARROT	Biodiesel (B100)	0 gallon	9.46 kg/gallon		CO2	0.00	metric ton			
Biogas emissions	Biogenic - Stationary (Gas)	CARROT	Biogas	0 therm	5.21 kg/therm		CO2	0.00	metric ton			
CEO car and Employee Survey	Employee Commuting and Business Travel	CARROT	Motor Gasoline	0 gallon	8.81 kg/gallon		CO2	0.00	metric ton			
CEO vehicle	Mobile Combustion	CARROT	Diesel	50 gallon	10.15 kg/gallon		CO2	0.51	metric ton	Vehicle owned by Marie's Trees 		
CEO Vehicle	Mobile Combustion	CARROT		18000 mile	0.01 g/mile		CH4	0.00	metric ton			
CEO Vehicle	Mobile Combustion	CARROT		18000 mile	0.02 g/mile		N2O	0.00	metric ton			
Employee survey - CNG cars	Employee Commuting and Business Travel	CARROT	Compressed Natural Gas (CNG)	0 therm	5.31 kg/therm		CO2	0.00	metric ton			
Energy Exports of combusted landfill gas	Energy Exports	Pre-Calc					CO2	0.00	metric ton			
Ethanol use	Biogenic - Mobile	CARROT	Ethanol (E100)	0 gallon	5.56 kg/gallon		CO2	0.00	metric ton			
Natural Gas in leased office space	Estimated Natural Gas Usage	CARROT	Natural Gas	0 therm	5.31 kg/therm	100	CO2	0.00	metric ton			
SCE bills	Purchased Electricity	CARROT		1500 MWh	655.00 lb/MWh		CO2	445.66	metric ton	Use SCE PUP report SC E 2006 PUP report		More accurate than CARROT default
Test of Deminimis	Purchased Electricity	CARROT		0 KWh	0.80 lb/KWh		CO2	0.00	metric ton			
Wood waste	Biogenic - Stationary (Solid)	CARROT	Wood and Wood Waste	0 metric ton	1591.35 kg/Metric ton		CO2	0.00	metric ton			

Movement Report



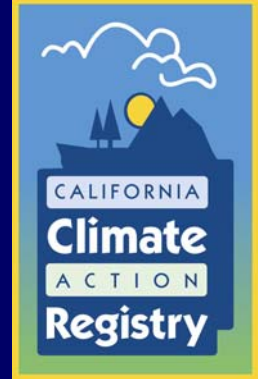
- This is now a required feature of CARROT!
- Only appears in the private CARROT report
- Information provided helps explain organic and/or structural changes over time (any occurrence that represents a change > 10%)
 - If you have acquired a pre-existing facility during a reporting year, report the emissions of that facility from Jan. 1 – Dec. 31; *no partial year reporting of structural changes*

Movement Report*

Factor	Details	Amount (CO2e)	Unit
Increase in Production	Marie's Trees has added 10 additional companies from which it will collect recycled paper products. Processing this additional paper will increase our emissions in 2007.	5,000.00	metric ton
Acquisition	Opened 5 new locations in CA (5/10/2007)	8,000.00	metric ton

*The Movement Report documents changes in the members inventory. This data is not verified but must be completed by the member to help track changes in emissions over time.

Management Control vs. Equity Share



- If your CARROT entity has facilities and you are reporting under either management control **or** equity share, then:
 - Leave the equity share box BLANK!
 - Report your % of the emissions corresponding to your operational or financial criteria/equity share

- If your CARROT entity has facilities and you are reporting under both management control **and** equity share, then:
 - Input your equity share amount in the equity share box
 - Report 100% of the emissions for each source
 - CARROT will automatically calculate your total emission % for equity share reporting

CARROT : Equity Share & Management Control



Main Entity Information User Management **Facilities** Emission Data Optional Reporting Reports

Summary

Year: 2007
Entity Status: Initiated
Scope: CA, US, and Worldwide
Level: Facility
Revision Number: 001

- [Main](#)
- [Entity Information](#)
 - [Entity Information](#)
 - [Entity Info \(Continued\)](#)
- [User Management](#)
- ▶ **Facilities**
 - [Emissions Data](#)
 - [Entity Emissions Summary](#)
 - [Facility Emissions Summary](#)
 - [Facility Emissions Detail](#)
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 - [Emission Performance](#)
 - [Emission Documents](#)
 - [Reports](#)

Tips:

- Fields with red name are required fields.
- Fields with before the field names are private fields and are not displayed in the public reports.

Marie's Trees

Name and address of the participating Facility

Facility Name: LA Office Identifier:
 Address: PO Box:
 City: Los Angeles State/Province: California
 Country: United States ZIP/Postal Code: 90071

Industry Sector:
 NAIC Code:
 SIC Code:

Responsible Users: Jay Barry

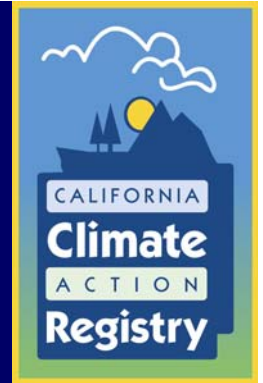
Click the button above to add the selected user's information to the contact fields below

Contact Person Information

Contact Name: Marie Massa Title:
 Phone: 213-891-1444 Fax:
 EMail: marie@climateregistry.org

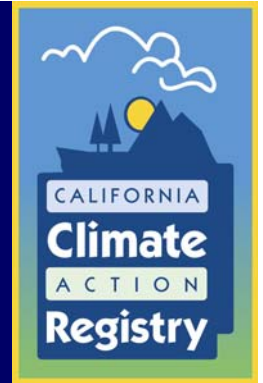
Equity Share (%): 78

Reporting GHGs Other Than CO₂



- Many of our members are choosing to report other GHGs during their first 3 years of membership
 - If you choose to report CO₂, CH₄, N₂O in one of your first 3 years, then you **must** do so for all emissions sources in your inventory where these GHGs occur
 - TIP: Could specify CH₄ & N₂O emissions in de minimis
 - You must continue reporting these GHGs in the following years
 - In your 4th year of membership you are required to report all 6 GHGs

Reporting De minimis



- As a policy change in GRP 3.0 it is now **required** that all de minimis emissions be reported in CARROT and disclosed in the public CARROT report.
 - Purpose:
 - To provide greater transparency to CARROT reports
 - Improves California Registry's staff ability to review reports

VERIFIED EMISSIONS INFORMATION

Reporting Year: **2007**
Reporting Scope: **CA, US, and Worldwide**
Reporting Protocol: **General Reporting Protocol, Version 3.0, (April 2008)**
Reporting Boundaries: **Management Control - Operational Criteria**
Baseline Year (Direct Emissions):
Baseline Year (Indirect Emissions):

Direct Emissions	CO2e	CO2	CH4	N2O	HFCs*	PFCs*	SF6	Unit
Mobile Combustion	0.48	0.40	0.00	0.00	0.00	0.00	0.00	metric ton
Stationary Combustion	0.79	0.79	0.00	0.00	0.00	0.00	0.00	metric ton
Process Emissions	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-
Fugitive Emissions	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-
TOTAL DIRECT (Eqty Share)	1.27	1.19	0.00	0.00	0.00	0.00	0.00	metric ton
TOTAL DIRECT (Mgmt Ctrl)	1.63	1.52	0.00	0.00	0.00	0.00	0.00	metric ton

* HFCs and PFCs are classes of greenhouse gases that include many compounds. These columns may reflect the total emissions of multiple HFC and PFC compounds, each of which has a unique Global Warming Potential (GWP). Emissions of each gas are first multiplied by their respective GWP and then summed in the total CO2-equivalent column.

Indirect Emissions	CO2e	CO2	CH4	N2O	Unit
Purchased Electricity	358.08	349.89	0.39	0.00	metric ton
Purchased Steam	0.00	0.00	0.00	0.00	-
Purchased Heating and Cooling	0.00	0.00	0.00	0.00	-
TOTAL INDIRECT	358.08	349.89	0.39	0.00	metric ton

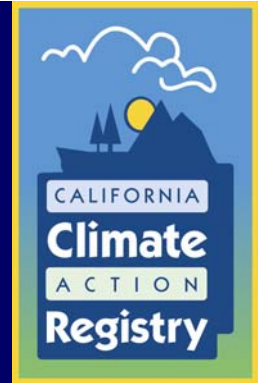


De Minimis Emissions	CO2e	CO2	CH4	N2O	HFCs*	PFCs*	SF6	Unit
TOTAL DEMINIMIS	5.60	5.60	0.00	0.00	0.00	0.00	0.00	metric ton

Percentage of Total Inventory: 1.53 %

* HFCs and PFCs are classes of greenhouse gases that include many compounds. These columns may reflect the total emissions of multiple HFC and PFC compounds, each of which has a unique Global Warming Potential (GWP). Emissions of each gas are first multiplied by their respective GWP and then summed in the total CO2-equivalent column.

Emissions Factors (EFs)



- Applying the correct emissions factors
 - If using an alternate EF, verifiers will need to ensure EFs used are more accurate than the default
- Default emissions factors in CARROT vs. using the electricity metric from PUP
 - Best practice is to use the PUP metric!
- Gas & diesel – new tables for GRP Version 3.0, but principle is still the same & new EFs in CARROT
 - Note: Under stationary combustion, Distillate Fuel Oil - #1, 2 & 4 = Diesel Fuel

Updated EFs



Emission Factors for Stationary Combustion

Table C.6: Carbon Dioxide Emission Factors for Stationary Combustion

Fuel Type	Carbon Content	Heat Content	Fraction Oxidized	CO ₂ Emission Factor	CO ₂ Emission Factor
Coal and Coke	kg C/ MMBtu	MMBtu/ short ton		kg CO ₂ / metric ton	kg CO ₂ /MMBtu
Anthracite	28.26	25.09	1.00	2,865.77	103.62
Bituminous	25.49	24.93	1.00	2,568.39	93.46
Sub-bituminous	26.48	17.25	1.00	1,846.19	97.09
Lignite	26.30	14.21	1.00	1,510.49	96.43
Residential/Commercial	26.00	22.05	1.00	2,317.13	95.33
Industrial Coking	25.56	26.27	1.00	2,713.87	93.72
Other Industrial	25.63	22.05	1.00	2,284.16	93.98
Electric Power	25.76	19.95	1.00	2,077.10	94.45
Coke	31.00	24.80	1.00	3,107.29	113.67
Petroleum Products (Gaseous)	kg C/ MMBtu	Btu/ standard cubic foot		kg CO ₂ / standard cubic foot	kg CO ₂ /MMBtu
Natural Gas (weighted U.S. average)	14.47	1,029	1.00	0.0546	53.06
Acetylene (C ₂ H ₂)	19.48	1,476	1.00	.1043	71.42
Petroleum Products (Liquid)	kg C/ MMBtu	MMBtu/ barrel		kg CO ₂ /gallon	kg CO ₂ /MMBtu
Asphalt & Road Oil	20.62	6.636	1.00	11.95	75.61
Aviation Gasoline	18.87	5.048	1.00	8.32	69.19
Distillate Fuel Oil (#1,2&4)	19.95	5.825	1.00	10.15	73.15

- GRP 3.0 now features updated EFs for mobile and stationary fuels. These new EFs are loaded into CARROT.
- NOTE: Distillate Fuel Oil = Diesel Fuel!

1) Enter annual energy use in CARROT's built in calculator. Click Next.

CARROT Calculation Tool

Emission Category: Purchased Electricity * GH Gas: CO2

Step 2: Select Emission Factor Source

- Use the emission factor recommended in the California General Reporting Protocol
- Use the emission factor from other sources

Back Close Next

3) Input EF, describe source of EF, reason for using this alternate EF. Click Next.

CARROT Calculation Tool

Emission Category: Purchased Electricity * GH Gas: CO2

Step 1: Enter Electricity Consumption

Electricity Consumption: Unit:

Close Next

2) Select bottom radio button to input more accurate EF. Click Next.

CARROT Calculation Tool

Emission Category: Purchased Electricity * GH Gas: CO2

Step 3: Enter Emission Factor

Emission Factor: Unit:

Source:

Reason:

Back Close Next

4) Review calculated emission amount, and select OK to accept.

Marie's Trees

Facility Name: LA Office
Country: United States
Equity Share: 100%
State/Province: California
Identifier:

Back OK Close

Emission Category: Indirect Emissions GH Gas: CO2
Emission Sub Category: Purchased Electricity *
* required sub category: entities must report emissions for each source indicated, if relevant to the entity.
Emission Source: SCE Bills
Calculation Method: Built-In Calculation Tool Pre-Calculated
Emission Amount: 2.90875536 Unit: metric ton
 Is De Minimis

Explain the methodologies, emission factors and their sources used for the pre-calculated emissions data:

Using SCE 2006 PUP electricity deliveries metric instead of CARROT default emission factor.

General Information:

Obtain SCE metric from public CARROT report:
<http://www.climateregistry.org/CARROT/public/reports.aspx>

Save Cancel

CARROT Calculation Tool

Emission Category: Purchased Electricity * GH Gas: CO2

Step 4: Calculated Emission Amount

Emission Amount: 2.90875536 Unit: metric ton

To use the calculated emission amount, click the OK button. To discard the results, click the Close button.

5) Best practice: Enter notes about the emission factor and notes about how to obtain the information.

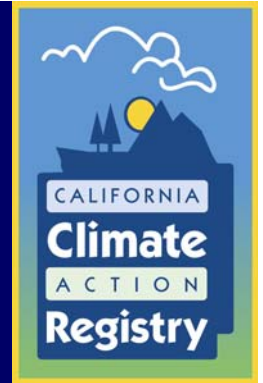
6) Remember to SAVE!

Stationary & Mobile Sources: the Basics



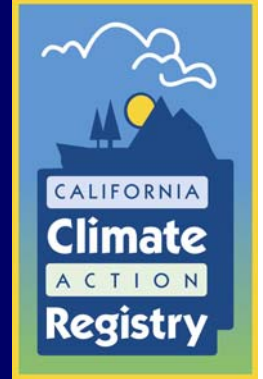
- Stationary = Non-mobile sources emitting GHGs from fuel combustion (Boilers, turbines, internal combustion engines, flares, back-up generators, etc.)
- Mobile = Non-fixed sources (Autos, boats, airplanes, forklifts, off-road vehicles, etc.)

Stationary & Mobile Sources: the Issues



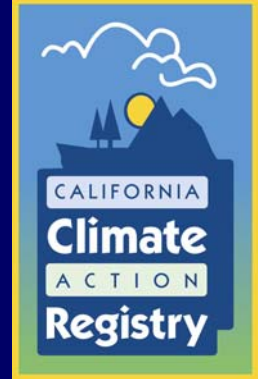
- Tricky to calculate CH_4 and N_2O emissions for off-road mobile vehicles!
 - Using GRP 2.2 members used stationary EFs in Table C.6, but then needed to change source type in CARROT after using built-in calculator
 - GRP 3.0 & CARROT update now enables users to input gallons for off-road vehicles that do not log miles travelled
 - Reporting biodiesel fuel use & optional reporting
- Emission Factors for Stationary Combustion:
 - In GRP 3.0 & CARROT updated default fraction of carbon oxidized to 1.00 following the recommendation IPCC, Guidelines for National Greenhouse Gas Inventories (2006).

Process vs. Fugitive: the Basics



- **Process** = physical or chemical processing rather than combustion
(via compressors, vented CO₂ for oil & gas sector, cement manufacturing, PFC from aluminum smelting, etc.)
- **Fugitive** = unintentional release of GHG
(via production, T&D, storage, use of fuels or other chemicals, joints, seals, packing, gaskets, etc.)

Process vs. Fugitive: the Issues



- Oil & Gas Sector
 - New sector for the California Registry with novel sources
- Area of development for the California Registry
 - Natural Gas T&D Protocol
 - Oil Exploration & Production Protocol
- API Compendium, SANGEA, and California Registry's GRP
 - Use alternate sources only if more accurate and/or if the GRP does not address source
 - Alternate EFs must be verified by your verifier

Fugitive Emissions



- In GRP 3.0 & CARROT HFCs and PFCs updated
 - Added HFC-32 and removed C_5F_{12}
- Reporting all 6 GHGs means reporting HFCs and/or PFCs
 - These calculations must be done off-line
 - Using resources in the GRP help estimate emissions
 - Using HFC/PFC worksheet (PUP Reporting Form)
 - Reporting the appropriate GHGs in CARROT
 - CARROT automatically converts to CO_2e
- Any HFCs or PFCs not in our list can be reported **optionally**

GRP – Chapter 11: Direct Fugitive Emissions



Table III.11.1. HFCs and PFCs to be Reported

HFC-23	HFC-143a	HFC-4310mee	C_4F_{10}
HFC-32	HFC-152a	CF_4	C_6F_{14}
HFC-125	HFC-227ea	C_2F_6	
HFC-134a	HFC-236fa	C_3F_8	

Source: U.S. Environmental Protection Agency, Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2003, Table 1-2 (April 2005).

Table III.11.3: Composition of Refrigerant Blends

Blend	HFC 32	HFC-125	HFC-134a	HFC-143a
R404A	NA	44%	4%	52%
R407C	23%	25%	52%	NA
R507	NA	50%	NA	50%
R507	NA	50%	NA	50%

Table III.11.4: Base Inventory

Inventory	Amount (kg)
A Beginning of year	
B End of year	

Table III.11.5: Inventory Changes

Inventory	Amount (kg)
Additions to Inventory	
1 Purchases of HFCs (including HFCs in new equipment)	
2 HFCs returned to the site after offsite recycling	
C Total Additions (1+2)	
Subtractions from Inventory	
3 Returns to supplier	
4 HFCs taken from storage and/or equipment and disposed of	
5 HFCs taken from storage and/or equipment and sent offsite for recycling or reclamation	
D Total Subtractions (3+4+5)	
Change to Full Charge/Nameplate Capacity	
6 Total full charge of new equipment	
7 Total full charge of retiring equipment	
E Change to nameplate capacity (6-7)	

HFC/PFC Worksheet

PUP Reporting Form (third tab/worksheet)



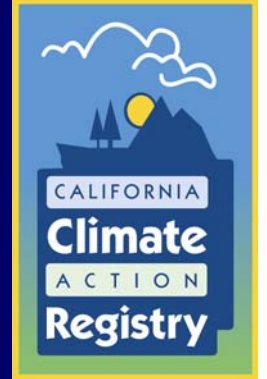
FUGITIVE EMISSIONS

Gas	Unit	Unit	GWP	CO ₂ e	Unit
HFC-23	0.00 lbs.	0.0000 metric tons	11700	0	metric tons
HFC-32	0.00 lbs.	0.0000 metric tons	650	0	metric tons
HFC-125	0.00 lbs.	0.0000 metric tons	2800	0	metric tons
HFC-134a	0.00 lbs.	0.0000 metric tons	1300	0	metric tons
HFC-143a	0.00 lbs.	0.0000 metric tons	3800	0	metric tons
HFC-152a	0.00 lbs.	0.0000 metric tons	140	0	metric tons
HFC-227ea	0.00 lbs.	0.0000 metric tons	2900	0	metric tons
HFC-236fa	0.00 lbs.	0.0000 metric tons	6300	0	metric tons
HFC-43-10mee	0.00 lbs.	0.0000 metric tons	1300	0	metric tons
CF4	0.00 lbs.	0.0000 metric tons	6500	0	metric tons
C2F6	0.00 lbs.	0.0000 metric tons	9200	0	metric tons
C3F8	0.00 lbs.	0.0000 metric tons	7000	0	metric tons
C4F10	0.00 lbs.	0.0000 metric tons	7000	0	metric tons
C6F14	0.00 lbs.	0.0000 metric tons	7400	0	metric tons
TOTAL FUGITIVE HFC EMISSIONS		0.00 metrics tons of HFCs		0	metric tons of CO2e
TOTAL FUGITIVE PFC EMISSIONS		0.00 metric tons of PFCs		0	metric tons of CO2e

PROCESS EMISSIONS

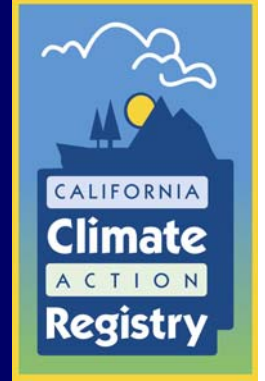
Gas	Unit	Unit	GWP	CO ₂ e	Unit
HFC-23	0.00 lbs.	0.0000 metric tons	11700	0	metric tons
HFC-32	0.00 lbs.	0.0000 metric tons	650	0	metric tons
HFC-125	0.00 lbs.	0.0000 metric tons	2800	0	metric tons
HFC-134a	0.00 lbs.	0.0000 metric tons	1300	0	metric tons
HFC-143a	0.00 lbs.	0.0000 metric tons	3800	0	metric tons
HFC-152a	0.00 lbs.	0.0000 metric tons	140	0	metric tons
HFC-227ea	0.00 lbs.	0.0000 metric tons	2900	0	metric tons
HFC-236fa	0.00 lbs.	0.0000 metric tons	6300	0	metric tons
HFC-43-10mee	0.00 lbs.	0.0000 metric tons	1300	0	metric tons
CF4	0.00 lbs.	0.0000 metric tons	6500	0	metric tons
C2F6	0.00 lbs.	0.0000 metric tons	9200	0	metric tons
C3F8	0.00 lbs.	0.0000 metric tons	7000	0	metric tons
C4F10	0.00 lbs.	0.0000 metric tons	7000	0	metric tons
C6F14	0.00 lbs.	0.0000 metric tons	7400	0	metric tons
TOTAL PROCESS HFC EMISSIONS		0.00 metrics tons of HFCs		0	metric tons of CO2e
TOTAL PROCESS PFC EMISSIONS		0.00 metric tons of PFCs		0	metric tons of CO2e

Biogenic Emissions: the Basics



- Biogenic Emissions: CO₂ emissions produced from combusting a variety of biofuels (biodiesel, ethanol, wood, wood waste, and landfill gas)
 - **Biogenic emissions**, i.e. combustion of biofuels should **NOT** be included as direct stationary or mobile emissions in your inventory!
 - **Biogenic emissions** can be reported **optionally** for most members, but are **REQUIRED for PUP reporters!**
- Anthropogenic Emissions: Direct result of human activities or are the result of natural processes affected by human activities.
 - Only anthropogenic emissions are **required**.

Biogenic Emissions: the Issues & Improvements



- In GRP 3.0 added some biogenic emission factors and in CARROT added 'Optionally Reported' emission category
 - Built-in calculator available for biodiesel, wood, and biogas
 - NOTE: if using biodiesel fuel refer to GRP 3.0, Chapter 7, Section III.7.4
 - Biodiesel fuels are usually blends of diesel and a biofuel
 - Report diesel portion as required mobile and biofuel portion under optionally reported.

Calculating CO₂: Biodiesel Example



Step 1: Identify biodiesel blend

i.e. (B20 = 20% biodiesel, 80% petroleum diesel)

Step 2: Identify annual biodiesel consumption

(12,000 gallons purchased of B20)

Step 3: Based on blend, calculate annual consumption of petroleum based diesel & biodiesel

(12,000 gallons × 20% = 2,400 biodiesel)

(12,000 gallons × 80% = 9,600 diesel)

Step 4: Select appropriate EF from App C, Table C.4 to calculate anthropogenic CO₂ emissions

CO₂ biodiesel EF = 9.46 kg/gallon

CO₂ diesel EF = 10.15 kg/gallon

Step 5: Multiply fuel consumed by EF to calculate total CO₂ and convert to metric tons

CO₂ from biodiesel = 9.46 × 2,400 × 0.001 = 22.70 mtCO₂

CO₂ from diesel = 10.15 × 9,600 × 0.001 = 97.44 mtCO₂

Optional Statements



- CARROT provides various fields for members to disclose emission reduction goals and achievements.

Emissions Efficiency metric:

Emissions Management Programs: Emissions inventory is entered in CARROT by Marie Massa and Robyn Camp, CEO of Marie's Trees has conducted an internal review of the data to verify its correctness. All data will be verified by approved-verification firm: First Environment.

Emissions Reduction Projects: We are installing more energy efficient equipment and switching to biodiesel. Please view our 2007 Sustainability Report for more details.

Emissions Reduction Goals: Our goal is to reduce our carbon footprint by 10% by 2010. Please see 2007 Sustainability Report for more information.

REFERENCE DOCUMENTS

Title	Author	Document Status	Publish Date
Sustainability Report 2007	Marie Massa	Public	10/28/2007 12:00:00AM

Are You Ready for Verification?



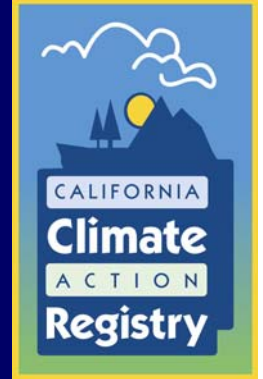
Collect documentation and data	2007 emissions (and/or prior years)
Calculate your emissions	January-May 2008
Report your emissions in CARROT	Deadline: June 30, 2008
Verify your emissions	Deadline: October 31, 2008

General Verification Protocol



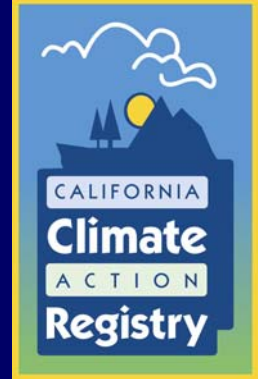
- Updated GVP in discussion, minor changes made should be released shortly
- Non-disclosure and Use of Information Agreement (NDA) in draft stages.
 - ARB approval pending
 - NDA is for the purpose of protecting confidential information and records from public disclosure to the maximum extent permitted by California law.

Verification Opinions



- For 2007 emissions data, opinions can be submitted with electronic signatures
- **REMEMBER:** the California Registry cannot begin its final review until it receives a fully executed hard-copy/PDF opinion!
- Member representative should sign the opinion **last** and submit fully-executed copy to the California Registry.

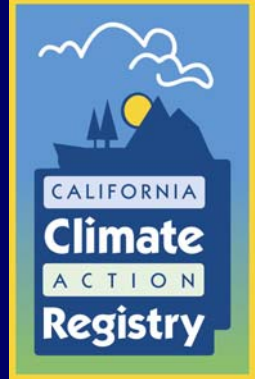
Identify Approved Verifiers



- Directory at www.climateregistry.org
 - Home Page < Tools < Verifiers
 - As of **May 31, 2009** our verifier's approval will expire!
 - ARB's approved-verifiers

- As of June 2009 more verifiers will be available:
 - The Climate Registry's approved-verifiers
 - ANSI pilot program candidates may be looking for clients! (July – December 2008)

DISCUSSION & QA TIME!



- Lessons learned?
- Questions, comments, feedback...

Thank You!



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