

**NativeEnergy**  
Bringing New Renewables To Market

## Carbon Footprint Report



## *Climate Change Leadership Summit*

November 8 - 9, 2010

Marriott Inn & Conference Center

Hyattsville, Maryland



November 5, 2010

Mr. Daniel Kreeger  
Executive Director  
Association of Climate Change Officers  
1900 K Street, NW  
Washington, DC 20006

Dear Mr. Kreeger:

*NativeEnergy* is pleased to provide this carbon footprint report for the ACCO Climate Change Leadership Summit and Gala in Hyattsville, Maryland on November 8-9, 2010. We are certain the gathering will be a productive and important gathering of leaders within business, government and institutions who are working together to slow climate change.

### **A Little About Us**

Founded in November 2000, *NativeEnergy* has helped thousands of individuals, businesses and also event planners to calculate, and then reduce, their carbon footprints. We leverage market demand for carbon offsets to bring online new Native American, family farmer and community-owned renewable energy projects. Through our novel approach of bringing upfront payment to renewable projects for the estimated future carbon offsets, we enable our clients to help directly finance the construction of specific new wind farms and other renewable energy projects.

*NativeEnergy* has calculated and offset events and tours ranging from NRDC concerts with the Rolling Stones and Willy Nelson, to UN Investor Summits on Climate Risks, Live Earth, The Clinton Global Initiative's 2005 Annual Meeting, two national presidential campaigns, the Green Inaugural Ball in 2009, and dozens more. In each case, the clients received the highest quality emissions analysis and carbon offsets.

*NativeEnergy* focuses on real, additional offsets that provide both an environmental and a social benefit. We employ the latest emissions databases from the International Energy Agency, EPA, U.S. Departments of Energy and Transportation, and GHG Protocol to establish the most accurate and complete carbon footprint for the event or operations based on data available.

We applaud the Association of Climate Change Officers' commitment to environmental responsibility, and look forward to helping you reach your carbon reduction goals for this event.

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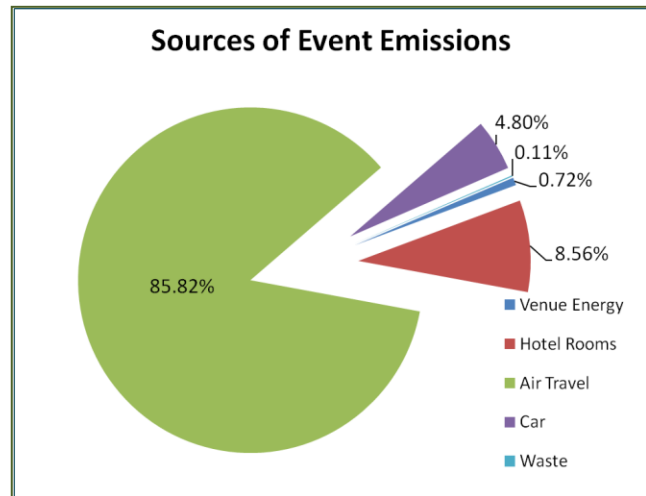


## Carbon Footprint Overview

Based on information you provided us, we estimate that the total green house gas emissions resulting from Venue Energy Use, Travel, Accommodations, and Waste for the November 8-9, 2010 event is 64.45 tons of CO<sub>2</sub>. Total attendance is 126 persons, including ACCO staff. Of these, 101 will attend for both days, with the remainder attending for 1 full day on average. The emissions from attendee accommodations are based on 146 hotel room nights associated with the event.

See Appendix I for assumptions used to estimate this ACCO carbon footprint.

Element	Short Tons CO <sub>2</sub>
Venue Energy	0.46
Hotel Rooms	5.52
Air Travel	55.31
Car	3.09
Waste	0.07
<b>Total Offsets</b>	<b>64.45</b>



## Travel Emissions

Emissions related to travel by attendees, event staff and guest speakers is always the primary contributor to an event's carbon footprint, especially if the audience includes a high percentage of international visitors. For ACCO's 2010 Climate Change Leadership Conference, air travel is the largest element with attendees from Spain, the United Kingdom, Canada and western US. *NativeEnergy* calculated the travel impact based on the originating destinations provided by you for 63 round trip flights to Dulles International and/or Washington National Airports – including airport shuttles and taxi's. Due to lack of sufficient data for mode of travel by the remaining 63 travelers, we assumed a worse case of each person driving alone, by car.

### Land Travel

Attendees	Avg Miles Daily	Trips	Total Miles	Means	Short Tons	Metric Tons
0	0	0	-	Local Train	0.0	0.0
0	0	0	-	Regional	0.0	0.0
63	2,583	159	7,750	Car	3.09	2.8

Car Mileage includes RT taxi or shuttles for all 63 air travelers.

### Air Travel

Air Miles	lbs CO <sub>2</sub> /Pass Mile	RFI	lbs CO <sub>2</sub>	lbs CO <sub>2</sub> -e	Short Tons	Metric Tons
63 Travelers						
133,870	0.4131	2 x CO <sub>2</sub>	55,306	110,611	55	50

Flight distances were based on Web Flyer data with departure from the airport nearest the attendees' origination city, to either Dulles Airport in Virginia (International and West Coast travelers) or Washington National Airport. *NativeEnergy* uses emission methodologies based on the GHG Protocol and IPCC standards for aviation, with inclusion of a radiative forcing factor for non-CO<sub>2</sub> gases associated with aircraft flying above 9000 meters. See Appendix for specific references, and list of travel locations included in the calculation.

## Facilities Energy

The ACCO Climate Change Leadership Conference is being held in the Marriott Inn and Conference Center, Hyattsville, MD and is utilizing a total of 10,303 square feet for general sessions and breakout meetings. *NativeEnergy* employs government databases based on energy intensities for electricity per square foot of hotels and conference facilities tied to specific state emissions factors, and combustion rates for natural gas heating. The breakout sessions, using 4,785 square feet are being held in a LEED-certified facility, with an energy intensity equal to 90% of the average EIA intensities based on factors from the US Green Building Council for LEED commercial buildings.

### Venue Emissions

Source	Rated In	kWh -CuFt	lbs CO <sub>2</sub> Rate	lbs CO <sub>2</sub>	Short Tons	Metric Tons
10,303 SqFt						
Electricity	kWh/sqft	531	1.4215176	754.1	0.38	0.34
Natural Gas	cubic feet	1,415	0.12059	170.6	0.09	0.08

Sources: US Department of Energy/Energy Information Administration:

<http://www.eia.doe.gov/emeu/cbecs/pba99/publicassembly/pubassemconstable.html#elec>

## Hotels

The hotel room nights are estimated based on data provided about attendee registration for either the Full Program and Gala, or a 1-day attendance only. We assumed that International and other long-distance travelers (Colorado and west) would arrive on November 7<sup>th</sup> and leave on November 10<sup>th</sup>, staying 3 nights. Attendees from Washington, DC and surrounding communities in Virginia and Maryland, within 40 miles, were assumed to be daily commuters without hotel rooms.

### Accommodations Emissions

Source	Rated In	kWh-CuFt	lbs CO <sub>2</sub> Rate	lbs CO <sub>2</sub>	Short Tons	Metric Tons
146 Hotel Nights						
Electricity	kWh/sqft	5,840	1.4215176	8,300.3	4.15	3.76
Natural Gas	cubic feet	22,674	0.12059	2,734.2	1.37	1.24

Hotel at 40 kWh/night stay with Maryland e-Grid emission factors and 155.3 CF per room night for natural gas.

Sources: US Department of Energy/Energy Information Administration:

<http://www.eia.doe.gov/emeu/cbecs/pba99/publicassembly/pubassemconstable.html#elec>

## Waste

### Waste Emissions

Tons Sent to	Disposal	MTCE	% Discard	lbs CO <sub>2</sub>	Short Tons	Metric Tons
126 Attendees.						
	<b>Recycled</b>		<b>35.48%</b>			<b>0</b>
0.099	Landfill	0.017	44.25%	123.83	0.06	0.06
0.000	Combustion	0.000	19.57%	-	0.00	0.00

The emissions from waste are based on the EPA 2007 “Discard rate” of 4.62 lbs for waste produced by an average US adult per day (considers recycling and composting) published in the EPA *Municipal Waste in the United States Report – 2008 Fact Sheet*, with specific ratios for Maryland disposal practices based on the *State of Garbage 2008* report by *BioCycle Magazine*. Ratios were further reduced based on data from Marriott Inn converging their recycling and composting practices.

Total tons of waste per disposal practice is multiplied by the Metric Tons Carbon Equivalents (MTCE) per tons of waste for Landfill and Combustion published in the EPA Waste Reduction Model (WARM). [http://www.epa.gov/climatechange/wycd/waste/calculators/Warm\\_home.html](http://www.epa.gov/climatechange/wycd/waste/calculators/Warm_home.html).

Of the 126 attendees, waste was calculated for 1-day participation by 25 persons, and 2-days waste for 101 persons.

### Offsetting

*NativeEnergy* is pleased to be the offset sponsor for this important inaugural Gala event of the Association of Climate Change Officers. The event’s carbon footprint is being neutralized by emission reductions create through the development of new advanced manure solids separation on the Laurelbrook Farm in East Canaan, Connecticut. This third generation family dairy farm is utilizing solids separated from its manure waste to create compost and bedding for its cows, while also removing a large percentage of the volatile solids which generate methane when stored in a slurry pit prior to field spreading for fertilizer.

This carbon offset project meets the requirements of the Voluntary Carbon Standard (VCS), and is based on UNFCCC CDM small-scale methodology AMS-III.Y, Version 02, “*Methane avoidance through separation of solids from wastewater or manure treatment systems.*”

A detailed description of the project is found in the Appendix.

### Summary

The greenhouse gas emissions associated directly with the facility energy use, attendee and speaker travel, hotel accommodations and waste for the ACCO 2010 Climate Change Leadership Conference totaled 64.45 short tons. Based on attendance of 126 persons, the average footprint impact per attendee was 0.511 short tons. This average is in line with other 1-2 day events that draw a multi-national attendance. *NativeEnergy* has been pleased to provide this report, as well as the carbon offsets needed to make carbon neutral this important climate change gathering. Thanks for the opportunity.

## Appendix – Assumptions

### How We Calculated Flights

The table below reflects travel origination for 126 attendees to the ACCO 2010 Climate Change Leadership Conference. All international flights were calculated as long haul. All other flights were classified as short, medium or long-haul based on 1-way distances registered on the WebFlyer calculator from the originating airport to either Dulles International in Virginia, or Washington National Airport in DC.

Shorter flights are more fuel intensive because of the significant amount of altitude gain relative to the length of the flight itself. On a short trip, a large portion of the energy per mile is devoted to climbing and landing, compared to cruising. That means shorter trips are more carbon intensive.

Depending on whether your travel fits into the short (0-280 miles), medium (281-994 miles) or long haul (>994) category, we apply a CO<sub>2</sub> emissions factor of 0.64, 0.44 or 0.40 lbs of CO<sub>2</sub> per passenger mile, respectively. This gives us the direct CO<sub>2</sub> emissions from your flight. [These factors are from the GHG Protocol Commuting Emissions Tool v 1.2]. Without specific flight itineraries, we assumed all flights were single segments, in accordance with the available Protocol tools.

In addition, we apply an RFI (radiative forcing index) of 2.0 to the direct CO<sub>2</sub> emissions from air travel, resulting in total CO<sub>2</sub> equivalent emission factors of 1.28, 0.88 or 0.8 for short, medium and long haul flight segments. By doubling the direct CO<sub>2</sub> emissions, our goal is to account for the overall global warming impact of air travel for all air emissions - not just the CO<sub>2</sub> - such as the warming effect of contrails. In its 1999 Special Report on Aviation in the Global Atmosphere, the Intergovernmental Panel on Climate Change (IPCC) estimated the RFI from air travel in 1990 to be between 2 and 4, averaging 2.7 times the carbon impact alone. More recently, the TRADEOFF project of The Fifth Framework Programme of the European Commission of the EU, suggested an RFI of 1.9. The Climate Neutral Network recommends use of a 2.0 times factor on the short haul rate for all flight miles.

### How We Calculated Driving:

Average MPG estimate for passenger cars DOE & EIA Annual Energy Review 2009. Energy Perspectives. Figure 30. Motor Vehicle Indicators. (Year 2009 values) Average fuel efficiency is 24.3 mpg for Light Duty Vehicles.

Pounds CO<sub>2</sub> per gallon gasoline burned = 19.56. Pounds CO<sub>2</sub> per gallon diesel burned = 22.38. (GHG Protocol Direct Emissions Tool v 1.0.)

City	State	Country	Summit	Gala	Role	Airport	1-Way Air	Factor	Lbs CO2-e	Car RT	Hotel Nights	Food Days	RT's
Springfield	Virginia	USA	Full	Yes	Attendee	-	0	0	0	110	0	2	2
McLean	Virginia	USA	Full	-	Attendee	-	0	0	0	90	1	2	2
Pisburgh	Pennsylvania	USA	Full	Yes	Attendee	PIT	205	1.2776	524	20	2	2	1
San Diego	California	USA	n/a	Yes	Attendee	San Diego	2250	0.7806	3513	20	2	2	1
Sacramento	California	USA	Full	Yes	Award Winner	Sacramento	2350	0.7806	3669	20	2	2	1
Sturtevant	Wisconsin	USA	Nov. 8	-	Facilitator	Milwaukee	633	0.8944	1132	30	1	1	1
Golden	Colorado	USA	Full	Yes	Facilitator	Denver	1470	0.7806	2295	0	2	2	1
Washington	District of Columbia	USA	Nov. 8	-	Plenary	-	0	0	0	40	0	1	1
Washington	District of Columbia	USA	Nov. 8 Session	-	Plenary	-	0	0	0	40	0	1	1
HARTFORD	Connecticut	USA	Full	Yes	Attendee	Hartford	312	0.8944	558	20	2	2	1
Westlake Village	California	USA	Full	-	Sponsor	LAX	2230	0.7806	3481	150	2	2	1
Richfield	Minnesota	USA	Nov. 9	-	Facilitator	Minneapolis	928	0.8944	1660	20	1	1	1
Washington	District of Columbia	USA	Nov. 8	-	Facilitator	-	0	0	0	40	0	1	1
Washington	District of Columbia	USA	Full	-	Facilitator	-	0	0	0	80	0	2	2
Hinckley	Maine	USA	Full	-	Plenary	Bangor	590	0.8944	1055	110	2	2	1
Washington	District of Columbia	USA	Full	-	Attendee	-	0	0	0	80	0	2	2
Madrid	-	Spain	n/a	Yes	Award Winner	Madrid	3800	0.7806	5933	100	3	2	1
Washington	District of Columbia	USA	Nov. 8 Session	-	Plenary	-	0	0	0	40	0	1	1
Redmond	Washington	USA	Full	Yes	Attendee	Seattle	2300	0.7806	3591	100	3	2	1
Washington	District of Columbia	USA	Full	-	Press	-	0	0	0	80	0	2	2
Modesto	California	USA	?????	-	Plenary	Oakland	2400	0.7806	3747	250	3	2	1
Boca Raton	Florida	USA	Nov. 8	Yes	Facilitator	Boca Raton	880	0.8944	1574	20	1	1	1
Washington	District of Columbia	USA	n/a	Yes	Attendee	-	0	0	0	80	0	2	2
Washington	District of Columbia	USA	Full	-	Unregistered Facilitator	-	0	0	0	80	0	2	2
San Francisco	California	USA	Full	Yes	Attendee	San Fran	2410	0.7806	3762	150	3	2	1
Chantilly	Virginia	USA	Full	-	Attendee	-	0	0	0	160	2	2	2
Washington	District of Columbia	USA	Full	-	Partner	-	0	0	0	80	0	2	2
Raleigh	North Carolina	USA	Full	-	Partner	Raleigh	227	1.2776	580	40	2	2	1
Evanston	Illinois	USA	Full	-	Facilitator	Chicago	610	0.8944	1091	20	2	2	1
Washington	District of Columbia	USA	Full	-	Partner	-	0	0	0	80	0	2	2
Portland	Oregon	USA	Nov. 8	Yes	Award Winner	Portland	2320	0.7806	3622	20	1	1	1
HOUSTON	Texas	USA	Full	-	Attendee	Houston	0	0	0	20	3	2	1
Washington	District of Columbia	USA	Full	Yes	Facilitator	-	0	0	0	80	0	2	2
Washington	District of Columbia	USA	Full	-	Attendee	-	0	0	0	80	0	2	2
Allentown	Pennsylvania	USA	Full	Yes	Attendee	Allentown	151	1.2776	386	20	2	2	1
Kohler	Wisconsin	USA	Full	-	Attendee	Sheboygan	655	0.8944	1172	20	2	2	1
London	-	United Kingdom	Full	-	Facilitator	London	3670	0.7806	5730	20	3	2	1
Arlington	Virginia	USA	?????	-	Plenary	-	0	0	0	100	2	2	2
Pembroke Pines	Florida	USA	Full	-	Staff	Miami	921	0.8944	1647	90	2	2	1
Washington	District of Columbia	USA	Nov. 9	-	Attendee	-	0	0	0	40	0	1	1
Cambridge	Massachusetts	USA	Full	Yes	Award Winner	Boston	398	0.8944	712	20	2	2	1
Memphis	Tennessee	USA	Full	-	Facilitator	Memphis	760	0.8944	1359	20	2	2	1
Montpelier	Vermont	USA	Full	-	Partner	Burlington	437	0.8944	782	40	2	2	1
Arlington	Virginia	USA	Full	Yes	Attendee	-	0	0	0	100	0	2	2
Sacramento	California	USA	Nov. 8	-	Plenary	Sacramento	2350	0.7806	3669	20	1	1	1
Washington	District of Columbia	USA	Full	Yes	Facilitator	-	0	0	0	80	0	2	2
Santa Clara	California	USA	Full	Yes	Plenary	Santa Clara	1150	0.7806	1795	150	3	2	1
McLean	Virginia	USA	Full	-	Staff	-	0	0	0	110	0	2	2
Pembroke Pines	Florida	USA	Full	-	Staff	Miami	921	0.8944	1647	100	2	2	1
New York	New York	USA	Full	-	Facilitator	JFK	213	1.2776	544	20	2	2	1
Washington	District of Columbia	USA	Full	Yes	Attendee	-	0	0	0	80	0	2	2
Washington	District of Columbia	USA	?????	-	Unregistered Facilitator	-	0	0	0	80	0	2	2
Washington	District of Columbia	USA	Nov. 9	-	Plenary	-	0	0	0	40	0	1	1
Miami Gardens	Florida	USA	Nov. 8	-	Facilitator	Miami	921	0.8944	1647	100	1	1	1
Alexandria	Virginia	USA	Nov. 8	-	Facilitator	-	0	0	0	35	0	1	1
McLean	Virginia	USA	Full	-	Attendee	-	0	0	0	100	0	2	2
Raleigh	North Carolina	USA	Full	-	Facilitator	Raleigh	227	1.2776	580	20	2	2	1
Chicago	Illinois	USA	Full	-	Plenary	Chicago	610	0.8944	1091	20	2	2	1
Boston	Massachusetts	USA	Nov. 8	-	Partner	Boston	398	0.8944	712	20	1	1	1
Toronto	Ontario	Canada	Full	Yes	Facilitator	Toronto	359	0.8944	642	20	2	2	1
Herrdon	Virginia	USA	Full	Yes	Attendee	-	0	0	0	130	2	2	2
New Castle	Delaware	USA	Full	Yes	Attendee	-	0	0	0	220	2	2	1

Washington	District of Columbia	USA	Full	-	Partner	-	0	0	0	80	0	2	2
Boston	Massachusetts	USA	Full	Yes	Partner	Boston	398	0.8944	712	20	2	2	1
Washington	District of Columbia	USA	Full	Yes	Facilitator	-	0	0	0	80	0	2	2
Mclean	Virginia	USA	Full	Yes	Facilitator	-	0	0	0	50	0	2	2
Arlington	Virginia	USA	Full	-	Facilitator	-	0	0	0	70	0	2	2
Vancouver	British Columbia	Canada	Nov. 8 Session	-	Plenary	Vancouver	2340	0.7806	3653	20	1	1	1
East Rutherford	New Jersey	USA	Full	-	Sponsor	Newark	199	1.2776	508	20	2	2	1
Pittsburgh	Pennsylvania	USA	Full	-	Attendee	PIT	205	1.2776	524	20	2	2	1
Washington	District of Columbia	USA	Full	Yes	Attendee	-	0	0	0	80	0	2	2
Montpeller	Vermont	USA	Full	Yes	Plenary	Burlington	437	0.8944	782	40	2	2	1
Cambridge	Massachusetts	USA	?????	-	Plenary	Boston	398	0.8944	712	20	2	2	1
Westlake Village	California	USA	Full	Yes	Sponsor	LAX	2280	0.7806	3560	20	3	2	1
Washington	District of Columbia	USA	Nov. 8	Yes	Facilitator	-	0	0	0	40	0	1	1
Pittsburgh	Pennsylvania	USA	Full	Yes	Facilitator	PIT	205	1.2776	524	20	2	2	1
Washington	District of Columbia	USA	Full	-	Plenary	-	0	0	0	80	0	2	2
Washington	District of Columbia	USA	Nov. 8 Session	-	Plenary	-	0	0	0	40	0	1	1
Chicago	Illinois	USA	Full	-	Attendee	Chicago	610	0.8944	1091	20	2	2	1
Arlington	Virginia	USA	Nov. 8	Yes	Facilitator	-	0	0	0	35	0	1	1
Washington	District of Columbia	USA	Full	-	Facilitator	-	0	0	0	80	0	2	2
Wickliffe	Ohio	USA	Full	-	Attendee	Cleveland	309	0.8944	553	60	2	2	1
Denver	Colorado	USA	Full	Yes	Facilitator	Denver	1450	0.7806	2264	20	3	2	1
Washington	District of Columbia	USA	Nov. 8	Yes	Attendee	-	0	0	0	40	0	1	1
Calgary	Alberta	Canada	Full	Yes	Attendee	Calgary	1950	0.7806	3044	20	3	2	1
Boston	Massachusetts	USA	Nov. 9 Session	-	Plenary	Boston	398	0.8944	712	20	1	1	1
Moorpark	California	USA	n/a	Yes	Sponsor	Oxnard	2320	0.7806	3622	145	3	2	1
Baytown	Texas	USA	Full	Yes	Attendee	Houston	1220	0.7806	1905	60	3	2	1
Denver	Colorado	USA	Full	Yes	Plenary	Denver	1470	0.7806	2295	20	3	2	1
Washington	District of Columbia	USA	Nov. 8 Session	-	Plenary	-	0	0	0	40	0	1	1
Chicago	Illinois	USA	Full	Yes	Plenary	Chicago	610	0.8944	1091	20	2	2	1
Washington	District of Columbia	USA	Full	-	Attendee	-	0	0	0	80	0	2	2
Albany	New York	USA	Full	Yes	Unregistered Facilitator	Albany	318	0.8944	569	20	2	2	1
Fairfax	Virginia	USA	Full	-	Attendee	-	0	0	0	120	1	2	2
Orange	Connecticut	USA	n/a	Yes	Award Winner	Hartford	312	0.8944	558	20	2	2	1
Washington	District of Columbia	USA	Full	Yes	Partner	-	0	0	0	80	0	2	2
Washington	District of Columbia	USA	Full	Yes	Partner	-	0	0	0	80	0	2	2
Bethlehem	Pennsylvania	USA	n/a	Yes	Attendee	-	0	0	0	330	2	2	1
Washington	District of Columbia	USA	Full	-	Attendee	-	0	0	0	80	0	2	2
New York	New York	USA	Nov. 9	-	Attendee	JFK	213	1.2776	544	20	1	1	1
Reston	Virginia	USA	Full	Yes	Facilitator	-	0	0	0	130	1	2	2
Washington	District of Columbia	USA	Full	Yes	Facilitator	-	0	0	0	80	0	2	2
Washington	District of Columbia	USA	Full	Yes	Sponsor	-	0	0	0	80	0	2	2
Sacramento	California	USA	n/a	Yes	Award Winner	Sacramento	2350	0.7806	3669	20	3	2	1
Washington	District of Columbia	USA	Nov. 8	Yes	Facilitator	-	0	0	0	40	0	1	1
White Plains	New York	USA	Full	-	Attendee	White Plains	233	1.2776	595	20	2	2	1
Washington	District of Columbia	USA	Nov. 8	-	Attendee	-	0	0	0	40	0	1	1
Dalton	Georgia	USA	Full	-	Attendee	Atlanta	547	0.8944	978	20	2	2	1
New York	New York	USA	n/a	Yes	Attendee	JFK	213	1.2776	544	20	2	2	1
Columbus	Indiana	USA	?????	-	Plenary	Indianapolis	497	0.8944	889	100	2	2	1
Washington	District of Columbia	USA	Full	-	Partner	-	0	0	0	80	0	2	2
Arlington	Virginia	USA	Full	Yes	Attendee	-	0	0	0	100	0	2	2
College Park	Maryland	USA	Full	-	Staff	-	0	0	0	60	0	2	2
Irwindale	California	USA	Full	Yes	Attendee	Pasadena	2270	0.7806	3544	35	3	2	1
Washington	District of Columbia	USA	Full	-	Staff	-	0	0	0	80	0	2	2
Dalton	Georgia	USA	Full	-	Attendee	Atlanta	547	0.8944	978	20	2	2	1
Washington	District of Columbia	USA	?????	-	Unregistered Facilitator	-	0	0	0	80	0	2	2
Lansdowne	Pennsylvania	USA	Full	Yes	Sponsor	-	0	0	0	300	2	2	1
Old Greenwich	Connecticut	USA	Nov. 9	Yes	Attendee	Stamford	260	1.2776	664	20	1	1	1
Portland	Oregon	USA	Full	Yes	Facilitator	Portland	2320	0.7806	3622	150	3	2	1
						<b>Totals</b>	<b>66935</b>	<b>1.652515</b>	<b>110611</b>	<b>7750</b>	<b>146</b>	<b>215</b>	<b>159</b>



**Project Name:** Laurelbrook Farm

**Project Type:** Help Build™ Farm Methane— Composting

**Project Location:** East Canaan, Connecticut

**Project Overview:** In today's economy small, family owned farms need additional help and support in order to operate successfully. Operational costs, including energy and bedding for animals are increasing environmental concerns, like manure runoff. Odor and pathogens can be problems. And agriculture accounts for an estimate 6% of US greenhouse gases.



Laurelbrook is a dairy farm located in East Canaan, Connecticut. The farm is a third-generation dairy farm started in 1948 by the Jacquier family. They have approximately 800 milking cows, 240 heifers, and 50 dry cows. The farm includes 275 acres, which is not enough land to field spread the manure generated by the herd. The farm began some limited composting of manure three years ago as an alternative to trucking manure to other farms. The compost was made by separating manure solids with a simple separator. Wood chips were added to the material to achieve the correct balance of ingredients for effective composting. As the mix heated up and decomposed, it was turned several times.

Unfortunately, this separator broke down last year and could not be repaired economically. Learning of the opportunity to sell the greenhouse-gas reductions that would result from restored operations, the Jacquiers decided to restore this composting operation with a more efficient, multi-stage, solids-separating system. Robert Jacquier, who oversees the farms said: "We believe the composting operation is the best way to take full advantage of the nutrients in the waste stream while significantly reducing the environmental threat posed by manure decomposition and nutrient run-off. It's a difficult time to operate a dairy farm, but we take pride in taking the best care of our animals and being good stewards of the land." This advanced process allows the farm both to compost a higher percentage of the manure and produce better compost. "We're not the only dairymen who are composting, but it is this sort of innovation that farmers need to consider. We're proud to have figured out how to get the composting up and running again, and we're pleased to be working with NativeEnergy," Jacquier said. With the promise of upfront revenues from NativeEnergy's Help Build™ carbon offsets sales, the new separating equipment was installed and the system went into operation in early summer 2010.



**Sustainable Development Benefits:** There are several benefits associated with the development of this project. The reduced cost of running the farm supports its continuing operation and helps maintain the traditional community. Local gardeners have access to natural fertilizer and need not rely on chemical ones. The project will produce all of the bedding needed for the cows, greatly reducing the cost of animal bedding. Finally, the separator removes a large portion of the volatile solids before going to the manure storage, thus less methane will be created.



**How it Fights Climate Change:** When volatile solids in the waste stream break down anaerobically (without oxygen) in the manure slurry storage tank, they produce methane, a greenhouse gas 21 times more powerful than carbon dioxide. The separation of the solids and aerobic decomposition largely eliminates methane gas formation, resulting in an important reduction in the greenhouse gases produced by the animal waste.

**Project Participants:** The project is a collaborative effort among *NativeEnergy*, the Jacquier family at Laurelbrook Farm, and everyone who purchases *NativeEnergy's* Help Build™ carbon offsets from the Laurelbrook Farm project.

**Validation and Verification:** To be validated by an accredited third party to the Voluntary Carbon Standard. Emissions reductions to be third party verified following its first year of operations and again following its 9th and 10th year of operations. Project to be registered with the Markit Registry.

Climate Action Reserve (CAR)	Gold Standard	Social Carbon Standard	Voluntary Carbon Standard (VCS)	UNFCCC/CDM Methodology	Contract Representation
CRT	GS VER	VCU+SCM	VCU ✓	✓	✓

