MONITORING, REPORTING AND VERIFICATION PROTOCOL FOR THE SEESA PV PROJECT IN EL SALVADOR

July 1, 2008

Prepared for
E+Co

by

ERT-Winrock
Arlington, Virginia

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A. Introduction

E+Co is a not-for-profit US 501(c)(3) organization that invests in clean energy enterprises in developing countries with a mission to empower small and medium sized enterprises that supply clean and affordable energy to households, businesses, and communities in the developing world. The SEESA PV project is being developed and implemented by one such enterprise in El Salvador.

Suministros Eléctricos y Electrónicos, SA de CV (SEESA) is an electrical engineering and services company headquartered San Salvador that has delivered over 400 solar photovoltaic electrical systems since the beginning of 2004, mostly for rural homes. With an investment from E+Co, SEESA is expanding its renewable energy business to increasingly supply the energy needs of rural areas of El Salvador with electrical energy from photovoltaic (PV) solar electric systems. In addition to substantially elevating living conditions in rural homes, SEESA's solar-based rural electrification activities generate real and verifiable reductions in greenhouse gas emissions by replacing traditional lighting sources, such as kerosene lanterns, with solar powered electric lights.

Protocol Objectives

The primary objective of this protocol is to define the methodology, data collection, data quality control, and data preservation procedures for quantifying, monitoring, reporting, and verifying the greenhouse gas emission reductions from the installation and operation of small-scale PV systems in El Salvador. The ultimate objective is to establish guidelines to provide a "true and fair" representation of the project's net emissions impact through a process that can be audited.

In order to be verified, emission reductions must meet the following criteria:

- The project must result in a reduction of greenhouse gas emissions due to specific and identifiable actions such as changes in equipment, technologies, processes, or operations
- Emission reductions must be quantifiable by acceptable, transparent, and replicable measurements and calculation tools and techniques
- Data must be available to verify the relevant measurements and calculations and, where applicable, statistical information provided to support the level of certainly/significance of the data
- Baseline emissions determinations must be explained and specified
- Actual reductions beyond the baseline emissions level must be specified
- Emission reductions must be additional (i.e., surplus) to that which would have occurred in the absence of the project activity, or in a "business as usual" scenario
- Ownership of the emission reductions must be clearly demonstrable by virtue of established ownership of the equipment that causes the reductions, operation of a program that results in the equipment's dissemination, or by a contract or written agreement.

Given those criteria, this MRV Protocol shall:

- Describe the project
- Identify the project's owners
- Identify relevant emissions sources
- Address issues of additionality and leakage
- Specify a project baseline against which emission reductions will be determined
- Specify monitoring and data collection techniques and procedures
- Specify emission factors & calculation methods, where applicable
- Identify supporting data for emissions quantification
- Describe data management and quality control procedures
- Specify reporting and documentation requirements, including frequency
- Address uncertainty
- Describe procedures for verification and registration of emission reductions
- Specify an attestation statement by project participants

Applicability

This protocol is applicable to greenhouse gas emission reductions resulting from the installation and operation of small-scale solar photovoltaic systems in El Salvador supplied by SEESA.

Periodic Reviews and Revisions

The Environmental Resources Trust, a business unit of Winrock International (ERT-Winrock) may require revisions to this protocol to ensure that the monitoring, reporting, and verification system adequately addresses changes in the project's activities or industry standards.

E+Co should submit a report on the SEESA project's PV system installation and maintenance activities to ERT-Winrock for review at least once per year. The contents and information to be included in that report are specified in the sections of this protocol addressing data collection and reporting. ERT-Winrock will:

- Review the report and prepare adjustments or corrections
- Verify the data, applying audit-sampling methods when appropriate
- Register verified emission reductions in E+Co's account in ERT-Winrock's GHG Registry (www.ecoregistry.org) in accordance with the terms of ERT's Registry Users Agreement.

B. General Description of Project Activity

In rural areas of El Salvador, according to data from a 2003 World Bank report, only 61% of households had access to electricity from the electric grid.[1] That situation has left more than 300,000 households, or about 1.5 million Salvadoran people, without access to distributed electricity. In the absence of distributed electricity, many households rely on kerosene lamps for lighting. Kerosene lamps provide a poor quality of light, are a fire hazard, and emit pollutants that are harmful to breath. Kerosene lamps also emit CO_2, at a quantity per-lamp that is quite small, although significant when viewed in aggregation.

SEESA promotes and supplies renewable energy systems in El Salvador. SEESA's most commonly supplied renewable energy products are small PV systems comprised of PV modules in a range of sizes (e.g., 30Wp, 50Wp, 75Wp, 85Wp, and 125Wp) that supply the electricity needs of households and small businesses in rural areas.

Since 2004, the company has gained significant experience in selling, installing, and servicing small decentralized PV systems. With a recent loan from E+Co, SEESA is now ramping up its renewable energy business activities, and will increasingly focus on building its expertise and in and marketing of small PV systems.

The energy provided by the PV systems improves the quality of life of rural families through improved lighting. In addition, the energy access may stimulate economic activities by enabling the creation of new small businesses and by enhancing the productivity of existing ones.

Boundary Conditions

The project boundaries include the homes, buildings, and installation sites that have directly benefited from solar PV electrification by SEESA. For purposes of emission reduction quantification, the project boundaries will not include upstream emissions related to the manufacturing, transportation, and installation of the PV systems or the extraction, refinement, and transportation of the fossil fuels that the PV systems replace. A study prepared for the World Bank found that, for solar lanterns, which are smaller than, but otherwise similar to, household PV systems, the associated upstream emissions are

[1] United Nations, World Bank, Joint UNDP World Bank Energy Sector Management Assistance Programme, *Power Sector Reform and the Poor in Central America* (July 2003), at p. 35.

comparable to upstream emissions savings from displaced kerosene refining and transportation.[2] Another study that examined embedded energy in solar home systems (SHSs) suggests that upstream emissions for the kerosene displaced by SHSs will generally exceed those associated with the SHS components (PV modules and lead-acid batteries) for a range of system sizes.[3] It is therefore assumed that the upstream emissions will cancel each other out.

Emission Points and Pathways

The solar PV systems themselves have no associated emission points once they are installed. In the base case, however, there are emissions associated with combustion of kerosene, mostly for lighting.

C. Baseline Methodology

This protocol uses a baseline calculation methodology that has been approved for small-scale CDM projects involving renewable energy systems that supply electricity to users, AMS-I.A. The applicability section of that CDM methodology specifies "[t]his category comprises renewable energy generation units that supply individual households or users or groups of households or users with electricity. The applicability is limited to households and users that do not have a grid connection except when a group of households or users are supplied electricity through an isolated mini-grid where the capacity of the generating units shall not exceed 15 MW. These units include technologies such as solar power, hydropower, wind power, and other technologies that produce electricity all of which is used on-site by the user, such as solar home systems, and wind battery chargers."[4] SEESA's off-grid PV applications are consistent with these applicability conditions.

The CDM methodology AMS-I.A provides three options for determining the energy baseline for the project activity. Option 1 sets the energy baseline as the average annual energy consumption by rural grid-connected users belonging to the same group as the users supplied by the renewable energy technology, giving as examples of users "residential, rural health centre, rural school, mills, water pump for irrigation, etc." Option 2 uses the estimated annual output of the renewable technologies as the energy baseline. Under both options 1 and 2, the energy baseline is adjusted by a factor for average technical distribution losses that would be expected if the electricity had been supplied to the user through a mini grid supplied by a diesel generator. Option 3 sets the energy baseline as a "trend adjusted projection of historic fuel consumption" which may be used in cases where an existing technology is replaced.

Due to data limitations, of the three options under AMS-I.A, it is currently only possible to apply Option 2 for the SEESA PV project. The CDM methodology AMS-I.A Option 2 specifies the following formula to calculate the annual energy baseline:

"EB = ΣiOi /(1 - l)

Where:

EB annual energy baseline in kWh per year

Σi the sum over the group of "i" renewable energy technologies (e.g. solar home systems, solar pumps) implemented as part of the project.

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[2] Alternative Energy Development, Inc., India Non-Conventional Energy Projects for Global Environment Facility Funding, Vol. I: Main Report, prepared for the World Bank, 1991.

[3] Rural Electrification with Solar Energy as a Climate Protection Strategy**,** footnote 22, Kaufman et. al. Renewable Energy Policy Project, 1999.

[4] AMS-I.A version 12, downloaded 21 March 2008. The latest version of this methodology and all previous versions are available from http://cdm.unfccc.int/methodologies/SSCmethodologies/approved.html.

Oi the estimated annual output of the renewable energy technologies of the group of "i" renewable energy technologies installed (in kWh per year)
l average technical distribution losses that would have been observed in diesel powered mini-grids installed by public programmes or distribution companies in isolated areas, expressed as a fraction."

To calculate baseline emissions, AMS-I.A specifies that a "default value 0.8 KgCO2e/kWh which is derived from diesel generation units, may be used. A small-scale project proponent may, with adequate justification use a higher emissions factor from Table I.D.1 under category I.D."

Table I.D.1[5] Emission factors for diesel generator systems (in kg CO2e/kWh*) for three different levels of load factors**

Cases:	Mini-grid with 24 hour service	i) Mini-grid with temporary service (4-6 hr/day) ii)Productive applications iii) Water pumps	Mini-grid with storage
Load factors [%]	25%	50%	100%
<15 kW	2.4	1.4	1.2
>=15 <35 kW	1.9	1.3	1.1
>=35 <135 kW	1.3	1.0	1.0
>=135<200 kW	0.9	0.8	0.8
> 200 kW***	0.8	0.8	0.8

*) A conversion factor of 3.2 kg CO_2 per kg of diesel has been used (following revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories)
**) Figures are derived from fuel curves in the online manual of RETScreen International's PV 2000 model, downloadable from http://retscreen.net/
***) default values

To date, one off-grid PV project has been registered with the CDM, using AMS-I.A. That project, a solar home lighting project in Morocco, also used Option 2, and selected an emissions factor of 1.9 kgCO2e/kWh. The project's proponents explained that the households supplied by the project are dispersed, and that larger villages in Morocco are connected to the national grid. They assumed that 50% of households served by the project would be supplied by a mini-grid servicing groups of less than 20 homes, and 50% would be supplied by a mini-grid servicing groups of 20 and 40 homes. Using the example of these groups of homes being supplied by a generator of less than 6 kW, with electricity consumption the same as what would be supplied by the PV systems, where energy demand is concentrated on 6 – 8 hours per day, the diesel generators would operate at a load factor of between 20% and 40%. To be conservative, they selected a load factor between 25 and 50%. From I.D.1, for a 6 kW diesel generator, they obtained figures of 2.4 and 1.4 kg CO_2/kWh respectively, and used an average value of 1.9 kg CO_2/kWh for their baseline calculations.[6]

As with the CDM-registered Morocco PV project, the emissions factor applied to calculate the SEESA PV project's baseline emissions in the MRV protocol is also set at 1.9 kg CO_2/kWh. The dispersed, small loads supplied by SEESA's off-grid PV systems would typically be met by a diesel generator with a

[5] This table appears in the approved Small-scale CDM Methodology AMS-I.D, available from http://cdm.unfccc.int/methodologies/SSCmethodologies/approved.html.
[6] See http://cdm.unfccc.int/Projects/DB/TUEV-SUED1134746545.91/view for the Project Design Document and other documentation for the "Photovoltaic kits to light up rural households in Morocco" CDM project.

capacity of far less than 15 kW, even if the applications were substantially aggregated and supplied by a mini-grid. Approximately 95% of SEESA's systems are estimated to supply households for lighting, etc. A 15 kW diesel generator would produce enough electricity to supply up to 100 homes with a higher level of electricity service than that supplied by the PV systems. Since electricity from the household PV systems is available 24 hours per day, equivalent service from a diesel mini-grid would also be 24 hour service. Selecting from Table I.D.1, this reflects an emissions factor of 2.4 kgCO2/kWh for the vast majority (95%) of SEESA's installations. An estimated 5% of the PV systems supplied by SEESA provide electricity for other off-grid applications such as water pumping and refrigeration, which would be met with a diesel generator operating at a higher load factor. Therefore, to be conservative, an emissions factor of 1.9 kgCO2/kWh is selected for estimating the emissions baseline.

For comparison purposes, it is possible to draw on studies of PV applications for rural home applications in several countries, conducted by a team led by the Energy Research Centre of the Netherlands (ECN), which produced a formula that can be used to estimate a generic emissions baseline for rural solar electrification activities that would reflect emissions from previously-used fuel, mainly for lighting.[7] Based on evidence suggesting that the introduction of a PV home system of any size will reduce the use of lighting fuels, but that the magnitude of the reduction changes somewhat depending on the size of the installation, the ECN team's formula calculates baseline emissions for PV home lighting systems based on 75 kg CO_2 per solar installation plus 4 kg CO_2 per watt (peak) of installed solar capacity per year.: $CO_2(kg) = 75 + 4 \cdot W_P$ [8]

Using the ECN team's global formula, the estimated baseline emissions are similar to, but somewhat higher than, ones calculated based on the application of AMS-I.A Option 2 (see below under sample calculations). The application of AMS-I.A Option 2 is therefore considered to be more conservative.

D. Sample Calculations

CDM AMS-I.A Option 2						
Electricity Production			CO2 Emission			
System Installed Watts Peak	kW/m2/Yr.	KWh/Yr.	KWh/Yr. Plus Line Losses	Factor kgCO2/kWh	Annual kgCO2	Annual tCO2
60	2,008	120.45	150.56	1.9	286.07	**0.29**

ECN Team (Martens, et. al.) PV SHS Baseline Calculation Methodology	
SHS System	CO2 Emission Formula: CO2 (kg) = 75 + 4 * Wp
Watts Peak	Annual tCO2
60	**0.32**

7 Streamlining CDM Procedures for Solar Home Systems - A Review of Issues and Options, Jan-Willem Martens, Steven Kaufman, John Green, & Frans Nieuwenhout, 2001, http://www.ecn.nl/docs/library/report/2001/c01098.pdf.

8 Ibid., p. 6

E. Additionality and Leakage

The primary tests as to whether SEESA's PV sales and installation activities lead to additional (i.e., surplus) emission reductions that would not occur in the absence of the project activity relate to the lack of any governmental or other regulations requiring the installation of solar photovoltaic equipment in the host country, and to whether such installations are the business-as-usual approach to rural energy applications in the project location. There are no regulatory or other governmental requirements for the installation of PV systems in El Salvador, and the use of photovoltaic technology is not a business-as-usual approach to rural energy supply.

The use of kerosene lamps represents the entrenched business-as-usual approach to lighting in Salvadoran homes that are not connected to an electricity distribution grid. To date, photovoltaic systems occupy a very small percentage of the Salvadoran rural energy market, and the installation of such systems faces significant barriers. The barriers to PV system dissemination and use include a lack of widespread knowledge about the technology, and limitations with respect to available sources of equipment and qualified installation and maintenance technicians. The project activity plays a key role in making the technology known and available, and is considered additional.

There are no significant sources of leakage (i.e., indirect increases in greenhouse gas emissions outside of the project's boundaries).

F. Start Date and Crediting Period

ERT is currently verifying emission reductions related to installation activities from January 1, 2004 to the end of 2007.

The operational life of each installed PV system is expected to be at least 10 years; the PV modules carry manufacturers' guarantees of 20 to 25 years. The initial crediting period, however, will be set at five years since some systems may not be maintained and may no longer be used once their battery fails, which is common after five years, if it is not replaced. When evidence is available showing that a system is being maintained, probably in the form of a battery replacement, it will be eligible for an additional crediting period of five years.

G. Monitoring Methodology and Plan

The monitoring plan is structured to provide the data inputs required by the baseline model to quantify emission reductions, and for verification. To quantify emission reductions the baseline model requires knowledge of the size of each PV system. For verification, financial records and transaction documents are used to confirm system sales. According to the methodology used here, those data inputs will be sufficient to quantify and verify emission reductions for an initial five year crediting period.

As explained above, due to the possibility that systems may fail or stop being used, this protocol sets an initial crediting period of five years per system. To enable crediting for a second five-year period, ERT will require evidence of maintenance (i.e. purchase of a new battery or light bulbs) or direct evidence that the system is still in operation. Evidence of a new battery purchase will qualify the system for an additional five years of credit, since this is generally the most expensive system component that must be

regularly replaced, and it is unlikely that a new battery would be purchased if the system were no longer in operation.

On a periodic basis for future verifications, ERT will conduct onsite inspections of a statistically significant portion of reported installations to confirm the installation and the operational status of the systems. ERT will apply an adjustment factor to reduce subsequent crediting to reflect the observed percentage of operational systems.

Data to be Collected

SEESA will maintain records of each PV panel it sells and installs, including the panel size and, where possible, the location of the system. SEESA will also maintain records on purchases of replacement parts, especially batteries and light bulbs. This data from all of SEESA's branch offices will be archived via a centralized, computerized invoicing and accounting system at SEESA"s headquarters office in San Salvador. This data will also be transmitted to ERT during the annual review process.

H. Third Party Verification

ERT conducted a desk review in February and March, 2008 to gather data on SEESA's PV sales, and conducted random checks to confirm adequate documentation of the reported sales. For future emission reduction verifications, sites visits will occasionally be conducted by a third party to assess the ongoing status of the project. Between site visits, off-site desk reviews will be performed on an annual basis to determine the status of the project and the magnitude of emission reductions to be credited from that year. Annual verification statements will be issued as data is reviewed and verified.

The emission reductions achieved by SEESA's activities will be registered in E+Co's account in ERT's GHG Registry (www.ecoregistry.org) in accordance with the terms of ERT's Registry Users Agreement.

Attestation Statement

The attestation statement in Appendix B has been signed by management of E+Co. Similar statements shall be submitted annually to ERT, along with the project report, following each year of the project's lifetime, or upon submittal of periodic emission reduction documentation for verification and registration.

I. Appendices

APPENDIX A – 2004 - 2007 VERIFICATION STATEMENT FROM ERT
APPENDIX B – ATTESTATION STATEMENT
APPENDIX C – CALCULATIONS AND DATA

APPENDIX A
VERIFICATION STATEMENT
FROM ERT

Participant Data

Project Name:	**SEESA PV Project in El Salvador**
Owner Name:	**E+Co**
Period	**Vintage Year 2004, 2005, 2006, and 2007**
Contacts:	**Gina Rodolico**
Prepared by:	**Steven Kaufman, for ERT-Winrock**
MRV Protocol:	**MRV SEESA 2008_1**

Summary

Based on its review, ERT has verified the information submitted by E+Co as being consistent with the attached monitoring, reporting, and verification ("MRV") protocol. ERT has registered a total of 169 metric tons of CO_2 equivalent emission reductions, conditioned on the followings findings and adjustments.

Key Findings[9]

Project Boundaries & Dates:	The project boundaries are consistent with those described in the MRV protocol. The project dates associated with the emission reductions verified in this statement are 1 January 2004 through 31 December 2007.
Additionality & Leakage:	The emission reductions were determined to be additional, given existing regulatory requirements and the business-as-usual situation for rural energy supply. No leakage of emissions outside the project boundaries was identified.
Baseline:	The baseline conditions mainly include the use of kerosene lanterns and similar products for lighting. The baseline emissions calculation methodology is based on estimates of electricity produced by the photovoltaic systems and a diesel mini-grid baseline, as specified in CDM-approved AMS-I.A, Option 2.
Monitoring, Data Collection, & Methodology:	Procedures were in keeping with the MRV protocol. A selection of reported financial documentation was inspected in March 2008 and found to be in good order. Data on sales of solar products was collected in El Salvador, and transmitted electronically by E+Co's Central America office for review by ERT. The data itself is collected and managed by SEESA. Emission reductions were calculated in keeping with the methodology outlined in the MRV protocol. The baseline methodology was applied to each photovoltaic panel supplied by SEESA, based on the panel's rated capacity.

[9] Applicable to this verification statement versus entire project lifetime.

Quality Control, Reporting, Documentation, & Uncertainties:	Quality control, reporting, and documentation procedures were in keeping with the MRV protocol.

Incremental Account Adjustment

Valid as of:	**July 1, 2008**

Vintage	Credits	Debits	Serial Numbers: Start / End	
2004	5	-	205,152,360	205,152,364
2005	18	-	205,152,365	205,152,382
2006	52	-	205,152,383	205,152,434
2007	94	-	205,152,435	205,152,528

Attachments/Exhibits

A	**Calculation Summary from spreadsheet File: "SEESA PV ERs 2004-2007"**
B	**Signed attestation statement**

Special Notes

None

Disclaimer: While ERT-Winrock believes that all allocations in its GHG Registry® result from a true and fair representation of participants' emissions performance, ERT assumes no liability for the allocations in the GHG Registry or the uses to which they are put. Use of the GHG Registry is governed under the terms and conditions of the GHG Registry user agreement.

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APPENDIX B
ATTESTATION STATEMENT
FROM E+Co

Attestation Statement

Reporting Entity: E+Co
Reporting Time Period: January 2004 – December 2007

To: Environmental Resources Trust

As an officer of E+Co, I hereby certify that the operational data provided to document the emissions reductions achieved in connection with the sale and operation of solar photovoltaic systems by SEESA have been collected and reported to ERT in accordance with the methods and procedures described in the Monitoring, Verification, and Reporting Protocol and are a true representation of the actual performance of the project.

Verification Statement Reference Number: VS SEESA 2008.1

Name: Gina Rodolico

Title: COO

Signature: Gina Rodolico

Date: 7/1/08

APPENDIX C
CALCULATIONS AND DATA

Assumptions:

Insolation kW/m2/day: 5.5
Line Losses(1): 20%
Emissions Factor tCO2/MWh(2): 1.9

Summary of Monthly Installations and Calculated VERs by Vintage Year

2004

Date	Wp	kWh Per Day	Annual Credit tCO2(3)	Vintage 2004 tCO2	Vintage 2005 tCO2	Vintage 2006 tCO2	Vintage 2007 tCO2
Jan. 04	75	412.5	0.358	0.328	0.358	0.358	0.358
Feb. 04	720	3,960.0	3.433	2.861	3.433	3.433	3.433
Mar. 04	335	1,842.5	1.597	1.198	1.597	1.597	1.597
May 04	80	440.0	0.381	0.222	0.381	0.381	0.381
Jul. 04	125	687.5	0.596	0.248	0.596	0.596	0.596
Sep. 04	350	1,925.0	1.669	0.417	1.669	1.669	1.669
Nov. 04	100	550.0	0.477	0.040	0.477	0.477	0.477
Total	**1,785**	**9,817.5**	**8.511**	**5.314**	**8.511**	**8.511**	**8.511**

2005

Date	Wp	kWh Per Day	Annual Credit tCO2(3)	Vintage 2004 tCO2	Vintage 2005 tCO2	Vintage 2006 tCO2	Vintage 2007 tCO2
Feb. 05	313	1,721.5	1.492		1.244	1.492	1.492
Mar. 05	430	2,365.0	2.050		1.538	2.050	2.050
Apr. 05	968	5,324.0	4.615		3.077	4.615	4.615
May 05	231	1,270.5	1.101		0.642	1.101	1.101
Jun. 05	388	2,134.0	1.850		0.925	1.850	1.850
Jul. 05	356	1,958.0	1.697		0.707	1.697	1.697
Aug. 05	153	841.5	0.729		0.243	0.729	0.729
Sep. 05	475	2,612.5	2.265		0.566	2.265	2.265
Oct. 05	203	1,116.5	0.968		0.161	0.968	0.968
Nov. 05	650	3,575.0	3.099		0.258	3.099	3.099
Dec. 05	500	2,750.0	2.384			2.384	2.384
Total	**4,667**	**25,668.5**	**22.251**		**9.362**	**22.251**	**22.251**

2006

Date	Wp	kWh Per Day	Annual Credit tCO2(3)	Vintage 2004 tCO2	Vintage 2005 tCO2	Vintage 2006 tCO2	Vintage 2007 tCO2
Jan. 06	10	55.0	0.048			0.044	0.048
Feb. 06	475	2,612.5	2.265			1.887	2.265
Mar. 06	1,585	8,717.5	7.557			5.668	7.557
Apr. 06	200	1,100.0	0.954			0.636	0.954
May 06	1,010	5,555.0	4.815			2.809	4.815
Jun. 06	325	1,787.5	1.550			0.775	1.550
Jul. 06	700	3,850.0	3.337			1.391	3.337
Aug. 06	2,170	11,935.0	10.346			3.449	10.346
Sep. 06	3,245	17,847.5	15.472			3.868	15.472
Oct. 06	170	935.0	0.811			0.135	0.811
Nov. 06	370	2,035.0	1.764			0.147	1.764
Dec. 06	655	3,602.5	3.123				3.123
Total	**10,915**	**60,032.5**	**52.041**			**20.808**	**52.041**

2007

Date	Wp	kWh Per Day	Annual Credit tCO2(3)	Vintage 2004 tCO2	Vintage 2005 tCO2	Vintage 2006 tCO2	Vintage 2007 tCO2
Jan. 07	20	110.0	0.095				0.087
Feb. 07	27	148.5	0.129				0.107
Mar. 07	150	825.0	0.715				0.536
Apr. 07	275	1,512.5	1.311				0.874
May 07	230	1,265.0	1.097				0.640
Jun. 07	1,985	10,917.5	9.464				4.732
Jul. 07	335	1,842.5	1.597				0.666
Aug. 07	495	2,722.5	2.360				0.787
Sep. 07	1,625	8,937.5	7.748				1.937
Oct. 07	895	4,922.5	4.267				0.711
Nov. 07	1,425	7,837.5	6.794				0.566
Dec. 07	870	4,785.0	4.148				
Total	**8,332**	**45,826.0**	**39.725**				**11.643**

Total, 2004 - 2007

Date	Wp	kWh Per Day	Annual Credit tCO2(3)	Vintage 2004 tCO2	Vintage 2005 tCO2	Vintage 2006 tCO2	Vintage 2007 tCO2
2004	1,785	9,817.5	8.511	5.314	8.511	8.511	8.511
2005	4,667	25,668.5	22.251	0.000	9.362	22.251	22.251
2006	10,915	60,032.5	52.041	0.000	0.000	20.808	52.041
2007	8,332	45,826.0	39.725	0.000	0.000	0.000	11.643
Total	**25,699**	**141,345**		**5**	**18**	**52**	**94**

1. Selected from AMS-I.D Table I.D.1. Generator <15kW, avg. load factors 25-50%.
2. Default figure from CDM AMS-I.A.
3. Based on total Wp per reporting period, for calculation purposes only.