

**CLEAN DEVELOPMENT MECHANISM  
PROJECT DESIGN DOCUMENT FORM (CDM-SSC-PDD)  
Version 03 - in effect as of: 22 December 2006**

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**Revision history of this document**

<b>Version Number</b>	<b>Date</b>	<b>Description and reason of revision</b>
01	21 January 2003	Initial adoption
02	8 July 2005	<ul style="list-style-type: none"><li>• The Board agreed to revise the CDM SSC PDD to reflect guidance and clarifications provided by the Board since version 01 of this document.</li><li>• As a consequence, the guidelines for completing CDM SSC PDD have been revised accordingly to version 2. The latest version can be found at <a href="http://cdm.unfccc.int/Reference/Documents">http://cdm.unfccc.int/Reference/Documents</a>.</li></ul>
03	22 December 2006	<ul style="list-style-type: none"><li>• The Board agreed to revise the CDM project design document for small-scale activities (CDM-SSC-PDD), taking into account CDM-PDD and CDM-NM.</li></ul>

**SECTION A. General description of small-scale project activity**
**A.1 Title of the small-scale project activity:**

>> Humphries Boerdery (Edms) Bpk, piggery methane capture and electrical generation.

**A.2. Description of the small-scale project activity:**

>>

The “Humphries Methane Recovery and Electricity Generation Project ” (hereafter, the “Project” or “Humphries”) is an anaerobic digestion (AD) swine wastewater treatment installation within the pig facility of Humphries Boerdery (Edms) Bpk. The project, hosted by Humphries Boerdery (Edms) Bpk and developed by EcoSecurities, is located between Bela Bela and Modimolle in the Limpopo Province of the Republic of South Africa.

There are three types of operations at the Humphries farms: farrowing, nursing, and finishing. The farrowing unit delivers pigs to the nursery unit. From the nursery unit, pigs are transferred to the finishing unit. The Humphries wastewater operation consists of transporting wastewater, which consists of fresh water mixed with manure and urine that accumulates in pits under the sheds, to a lagoon treatment systems- 1) treatment, 2) recycling and 3) evaporation. The organic material degraded in the primary treatment lagoon is digested under anaerobic conditions, thereby producing significant amounts of methane (CH<sub>4</sub>) gas.

The Project Activity consists of the construction of a new covered in-ground anaerobic reactor that will utilize the organic material currently treated in the wastewater ponds from the units listed above to produce biogas. The recycling lagoon from the site will be converted to accommodate the digester. As an enclosed unit, the anaerobic reactor system will reduce the amount of Chemical Oxygen Demand (COD) (representative of the amount of manure) in the wastewater prior to the wastewater reaching the open lagoon system. The biogas produced in the anaerobic digester will be captured and run through a biogas driven generator to generate electricity for on-site usage. Today, the operations covered under the Project rely on electricity from the South African grid. With the implementation of the project activity, electricity will henceforth be supplied by renewable biogas. Development of the Project will reduce greenhouse gas emissions produced by the release of methane from the lagoons, and by carbon dioxide generated from the use of electricity from the South African grid.

With annual projected volumes of methane carbon dioxide, the Project is estimated to reduce emissions by 11080 tCO<sub>2</sub>e per year (after project emissions are accounted for).

The Project is helping the Host Country fulfil its sustainable development goals in the following manner:

**Socio-Economic Sustainability**

- Improvement in air quality (e.g. – reduction of Volatile Organic Compounds [VOCs]) and worker safety;
- Elimination of odour in surrounding areas, which will improve living standards of neighbouring stakeholders.
- By improving the waste management system at the farm, the project will support the continued production of pork in order to meet the consumption needs of the growing global population.

**Economic Sustainability**

- Diversification of energy sources: South Africa is one of the biggest producers and consumers of coal. Using methane to generate clean electricity and/or heat on-site, will reduce dependence on a dirty

and non-renewable commodity and will show that energy can be produced at a competitive cost. There is also potential for this model to be replicated in other areas in the region if this project is successful;

- Increase in energy self sufficiency, thereby reducing the import of fossil fuel based power from the national grid;
- Introduction of a new and sustainable financial model that can be replicated for the funding of the renewable energy and waste management sector via the CDM.

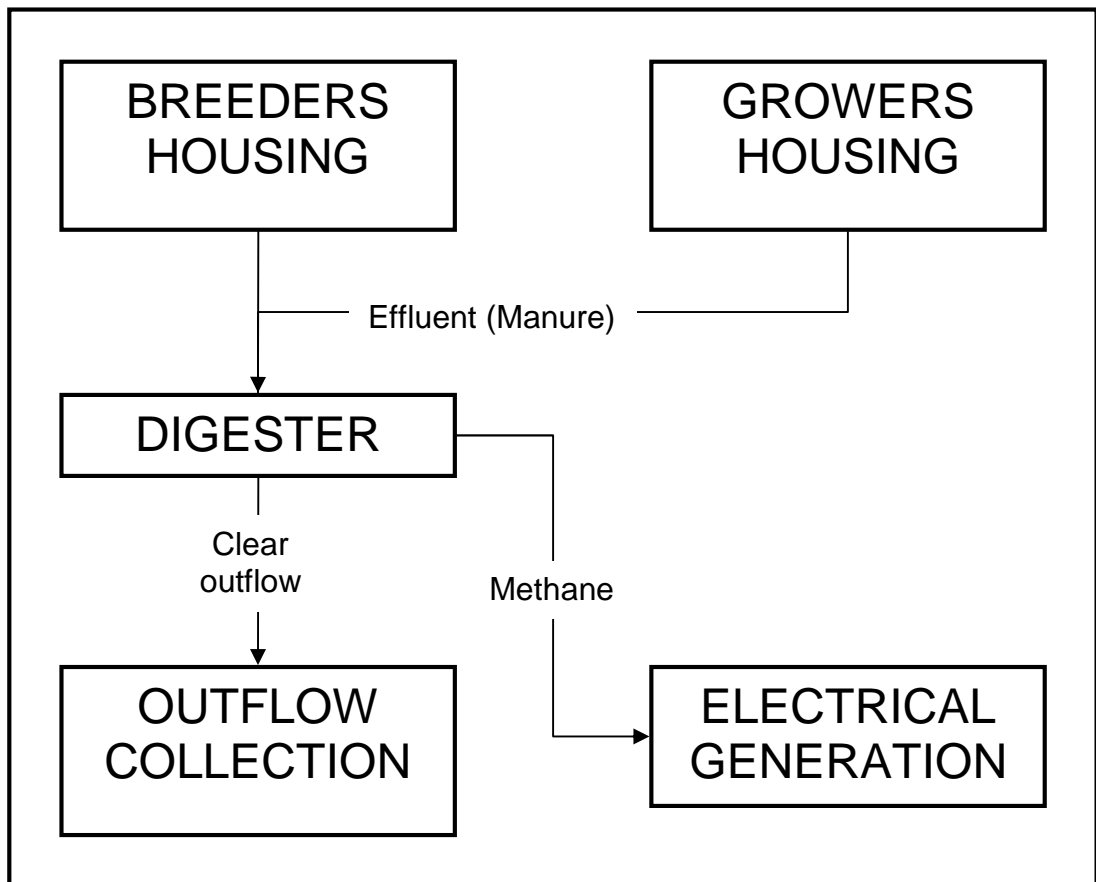
**Environmental Sustainability**

- An overall decrease in the amount of Greenhouse Gases (GHGs) emitted into the atmosphere;
- Improvement in the quality of the water used in the waste management system and its potential use as water for irrigation by the farms’ neighbours;
- Avoiding potential dumping of waste into clean sources of water
- Mitigation of odour creating a nuisance to neighbouring stakeholders

**Technological Sustainability**

This project will promote a model for the reduction of GHGs produced by swine farming in South Africa and promote a transfer of technology for methane production and capture through anaerobic digestion

The physical layout and boundary of the project is presented in a simplified flowchart below.



All project components are located on the farm “*Twefontein*” in the Limpopo Province of South Africa.

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**A.3. Project participants:**

&gt;&gt;

<b>Name of Party involved*</b>	<b>Private and/or public entity (ies) project participants (as applicable)</b>	<b>Kindly indicate if the Party involved wishes to be considered as project participant (Yes/No)</b>
South Africa	Humphries Boerdery Pty Ltd	No
South Africa	Cargill Incorporated	No

(\*). In accordance with the CDM modalities and procedures, at the time of making the CDM-PDD public at the stage of validation, a Party involved may or may not have provided its approval. At the time of requesting registration, the approval by the Party(ies) involved is required.

**A.4. Technical description of the small-scale project activity:****A.4.1. Location of the small-scale project activity:**

>> On the Humphries Boerdery Tweefontein piggery, between Bela Bela (formerly Warmbad) and Modimolle (formerly Nylstroom), Limpopo Province, Republic of South Africa (approximately 120km north of Pretoria).



Figure 1: Map of Limpopo Province indicating location of the project

<b>A.4.1.1. Host Party(ies):</b>
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>>South Africa

<b>A.4.1.2. Region/State/Province etc.:</b>
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>>Limpopo Province

<b>A.4.1.3. City/Town/Community etc:</b>
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>>Bela Bela (ex Warmbad)

<b>A.4.1.4. Details of physical location, including information allowing the unique identification of this <u>small-scale project activity</u> :</b>
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>> The physical location of the project is approximately 20km north of Bela Bela on the road to Modimolle (see Figure 1), on the Humphries Boerdery (Edms) Bpk farm “*Tweefontein*.”

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**A.4.2. Type and category(ies) and technology/measure of the small-scale project activity:**

>> According to Appendix B of Simplified modalities and procedures for small scale CDM projects version 12, of 18 May 2007, the project activity is type AMS- III.D (“*Methane recovery in agricultural and agro industrial activities*”) AND type AMS- I.A (“*Electricity generation by user*”).

The project involves the recovery of methane wastes from manure and other waste from agricultural (pig farming) activities. The emissions will be below the requirement of 60kt CO<sub>2</sub> per annum assigned to the corresponding project type AMS- III.D (“*Methane recovery in agricultural and agro industrial activities*”). Furthermore, the combustion of the methane gas will be used to generate an amount of electrical energy. The total capacity generated will be less than the stated maximum 15MW stated in the methodology AMS- I.A (“*Electricity generation by user*”).

**A.4.3 Estimated amount of emission reductions over the chosen crediting period:**

>> The Project activity will reduce GHG emissions by 11,080 tonnes of CO<sub>2</sub> per year, totalling 77,560 tonnes of CO<sub>2</sub> during the initial 7-year crediting period.

Please indicate the chosen crediting period and provide the total estimation of emission reductions as well as annual estimates for the chosen crediting period. Information on the emissions reductions shall be indicated using the following tabular format.

For type (iii) small-scale projects the estimation of project emissions is also required.

Years	Annual estimation of emission reductions in tonnes of CO <sub>2</sub> e
Year 1	11,080
Year 2	11,080
Year 3	11,080
Year 4	11,080
Year 5	11,080
Year 6	11,080
Year 7	11,080
*After the initial 7-year crediting period, the baseline will be reassessed, generating a new estimate of emissions reductions yet to be determined.	
<b>Total estimated reductions (tonnes of CO<sub>2</sub>e)</b>	<b>77,560</b>
<b>Total number of crediting years</b>	7 (renewable up to 21 years)
Annual average over the crediting period of estimated reductions (tonnes of CO <sub>2</sub> e)	11,080

**A.4.4. Public funding of the small-scale project activity:**

>> The project will not receive any public funding from Parties included in Annex I of the UNFCCC

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**A.4.5. Confirmation that the small-scale project activity is not a debundled component of a large scale project activity:**

Project is a stand alone project that will not be bundled with other components. The project developer has not registered any other CDM projects and there are no similar or associated CDM project activities in the vicinity.

**SECTION B. Application of a baseline and monitoring methodology**

**B.1. Title and reference of the approved baseline and monitoring methodology applied to the small-scale project activity:**

>> The project activity is applicable to small-scale project type III.D. - Methane recovery in agricultural and agro industrial activities AND type AMS- I.A – Electricity generation by user:

- Methodology AMS-III.D. (ver 10), - Methane recovery in agricultural and agro industrial activities
- Methodology AMS- I.A (ver 12), - Electricity generation by user

From *Appendix B* of Simplified Modalities and Procedures for small scale CDM projects version 12, 18 May 2007.

The dual methodology is allowable in accordance with paragraph 8 of methodology AMS III.d.

**B.2 Justification of the choice of the project category:**

>>The project involves the recovery of methane generated from manure based effluent on an agricultural activity (farm). This is in line with the requirements of the methodology AMD III.D. Furthermore, the methane will be combusted in a system that will generate electricity for the project owner, which falls under the category of AMS I.A.

**B.3. Description of the project boundary:**

>> The project boundary will be the Humphries Boerdery site including the manure collection and storage systems and all the methane combustion and electricity generating equipment associated therewith.

The project boundary is defined as the notional margin around a project within which the project's impact (in terms of carbon emission reductions) will be assessed. As referred to in Appendix B for small-scale project activities:

- The project boundary for Type III.D. projects is the physical, geographical site of the methane recovery facility.
- The project boundary for Type I.D. is the physical site of the generating unit and the equipment that uses the electricity produced.

For the purposes of this analysis, different boundaries were applied in relation to the elements contributing to project and baseline emissions.

- Electricity and Fuel Oil Displacement/ Emissions: The boundaries are assumed to be the geographical site of the generating unit and the equipment that uses the electricity produced at the Humphries facility.
- Wastewater Methane Emissions/ Mitigation: The boundaries are assumed to be physical, geographical site of the methane recovery facility at the Humphries facility.

**B.4. Description of baseline and its development:**

>> For baseline calculations the data used is the most recent possible. Date of completion of baseline development is September, 2007.

EcoSecurities Ltd is the entity determining the monitoring plan and participating in the project as the Carbon Advisor. EcoSecurities is not a project participant. The person in charge of its development is:

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EcoSecurities  
Twickenham Building  
The Campus  
Bryanston 2021  
South Africa  
Phone : +27 11 575 6842  
Email : [grant.little@ecosecurities.com](mailto:grant.little@ecosecurities.com)

**B.5. Description of how the anthropogenic emissions of GHG by sources are reduced below those that would have occurred in the absence of the registered small-scale CDM project activity:****B.6. Emission reductions:****B.6.1. Explanation of methodological choices:**

>>

The project meets all of the applicable requirements included in AMS-III.D. This category comprises “Methane Recovery Projects”. The project involves the capture of methane from sludge ponds on a swine farm. The recovered methane is less than the maximum allowed capacity of 60 kt CO<sub>2</sub> equivalent annually assigned to the corresponding project type AMS- III.D.

The choice of applicable baseline calculation for the project category is justified since the project activity meets the following applicability conditions:

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**Table B.1. – Methodology AMS-III.D. Requirements**

<b>Project Type</b>	Type III-Methane Recovery
<b>Project Category</b>	III.D. Methane Recovery in agricultural and agro industrial activities
<b>Technology/Measure</b>	<p>This category comprises the recovery and destruction of methane from manure and wastes from agricultural or agro industrial activities that would be decaying anaerobically in the absence of the project activity.</p> <p><i>Applicable to the Humphries Boerdery CDM project:</i> A methane recovery and combustion system is to be installed to an existing source of methane, in the form of anaerobic waste ponds. These waste ponds currently have no methane recovery systems installed and all gaseous emissions from the ponds vent directly to atmosphere.</p>
<b>Boundary</b>	The physical, geographical site of the methane recovery system delineates the project boundary.
<b>Baseline</b>	The baseline scenario is the situation where, in the absence of of the project activity, biomass and other organic matter (manure) are left to decay anaerobically within the project activity and methane is emitted into the atmosphere. The baseline emissions ( $BE_y$ ) are calculated ex ante using the amount of waste raw material that would decay anaerobically in the absence of the project activity, with the most recent IPCC tier 2 approaches. If the recovered methane is used for heat or electricity generation, the corresponding category of type I (see Table B.2) project activities can be applied.
<b>Leakage</b>	No leakage calculation is required for this methodology.
<b>Monitoring</b>	The emission reductions achieved by the project will be measured ex-post through direct measurement of the methane fuelled or flared. The amount of methane will be monitored using flow meters.

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**Table B.2. – Methodology AMS-I.A. Requirements**

<b>Project Type</b>	Type I-Renewable Energy Projects
<b>Project Category</b>	I.A. Electrical generation by the user.
<b>Technology/Measure</b>	This category comprises renewable energy technologies that supply individual households or users with a small amount of electricity  <i>Applicable to the Humphries Boerdery CDM project:</i> The renewable energy, from recovery and combustion of methane will be used to generate electricity. The capacity of the generator will be less than 15MW which this methodology lists as a maximum.
<b>Boundary</b>	The physical, geographical site of the renewable energy generating unit and the equipment that uses the electricity produced delineates the project boundary.
<b>Baseline</b>	For renewable energy technologies the energy baseline is the fuel consumption of the technology in use or that would have been used in the absence of the project activity.
<b>Leakage</b>	If the energy generating equipment is transferred from another activity equipment is transferred to another activity, leakage is to be considered.
<b>Monitoring</b>	Monitoring will consist of the measurement of the electricity generated by all systems in the project activity.

**B.6.2. Data and parameters that are available at validation:***(Copy this table for each data and parameter)*

<b>Data / Parameter:</b>	
Data unit:	Number of swine
Description:	Number of pigs on site
Source of data used:	Computer based farm management program used by Humphries.
Value applied:	
Justification of the choice of data or description of measurement methods and procedures actually applied :	This is an internationally and sector specific program used as an industry norm. The number of swine is required to calculate the amount of waste generated.
Any comment:	

<b>Data / Parameter:</b>	
Data unit:	Mass of swine
Description:	Mass in kg of various swine on the farm
Source of data used:	Computer based farm management program used by Humphries.

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Value applied:	
Justification of the choice of data or description of measurement methods and procedures actually applied :	This is an internationally and sector specific program used as an industry norm. The number of swine is required to calculate the amount of waste generated.
Any comment:	

<b>Data / Parameter:</b>	
Data unit:	Temperature
Description:	Maximum and Minimum ambient temperatures
Source of data used:	SA Weather Services
Value applied:	
Justification of the choice of data or description of measurement methods and procedures actually applied :	This is available from the SA Weather Services – and the value for Bela Bela (Warmbaths) was used.
Any comment:	

<b>B.6.3 Ex-ante calculation of emission reductions:</b>
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&gt;&gt;

Methane calculations – from tier 2 approach of the 2006 IPCC Guidelines for National Greenhouse Gas inventories – Chapter 10: Emissions from Livestock and Manure Management

$$BE_y = BE_{CH_4,y} + BE_{elec/heat,y}$$

where	Units
BE <sub>CH<sub>4</sub>,y</sub>	11,080.3 tCO <sub>2</sub> e/yr
BE <sub>elec/heat,y</sub>	0.0 tCO <sub>2</sub> e/yr
BE <sub>y</sub>	11,080.3 tCO <sub>2</sub> e/yr

$$BE_{CH_4,y} = GWP_{CH_4} \cdot D_{CH_4} * \sum_{j,LT} MCF_j * B_{0,LT} * N_{LT} * VS_{LT,y} * MS\%_{Bl,j}$$

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where

Parameter	Value	Unit	Source/Comment
$GWP_{CH_4}$	21		
$D_{CH_4}$	0.00067	t/m <sup>3</sup>	IPCC 2006

**Breeding swine**

$$\sum_{j,LT} MCF_j * B_{0,LT} * N_{LT} * VS_{LT,y} * MS\%_{Bl,j}$$

where

Parameter	Value	Unit	Source/Comment
$MCF_j$	0.79		Annual Default from IPCC 2006 Tier II
$B_0$	0.45	kg CH <sub>4</sub> /Kg VS	Default from IPCC 2006 Tier II function of genetics
$N_{breeding}$	1,600	head	Site data
$VS_{breeding}$	152.6	Kg VS/head*yr	Default from IPCC 2006 Tier II and site data
$MS_{breeding}$	100%		Site data

$\Sigma_{breeding\_BE}$	86,819.6
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 **$VS_{breeding}$** 

$$VS_{LT,y} = \left( \frac{W_{site}}{W_{default}} \right) \cdot VS_{default} \cdot nd_y$$

where

Parameter	Value	Unit	Source/Comment
$W_{site\_breeding}$	180	kg/head	weighted average of sow and boar weights from site data
$W_{default\_breeding}$	198	kg/head	IPCC default value, function of genetics
$VS_{default\_breeding}$	0.46	Kg VS/head*day	IPCC default value, function of genetics
$nd_{breeding}$	365	days/yr	treatment plant is operational

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$VS_{\text{breeding}}$	152.6	Kg VS/head*day
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**Market Swine**

$$\sum_{j,LT} MCF_j * B_{0,LT} * N_{LT} * VS_{LT,y} * MS\%_{Bl,j}$$

where

Parameter	Value	Unit	Source/Comment
$MCF_j$	0.79	%	Annual Default from IPCC 2006 Tier II
$B_o$	0.45	kg CH <sub>4</sub> /Kg VS	Default from IPCC 2006 Tier II function of genetics
$N_{\text{market}}$	12,500	head	Site data
$VS_{\text{market}}$	157.7	Kg VS/head*yr	Default from IPCC 2006 Tier II and site data
$MS_{\text{market}}$	100%		Site data

$\Sigma_{\text{market\_BE}}$	700,690.5
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**$VS_{\text{market}}$**

$$VS_{LT,y} = \left( \frac{W_{\text{site}}}{W_{\text{default}}} \right) \cdot VS_{\text{default}} \cdot nd_y$$

where

Parameter	Value	Unit	Source/Comment
$W_{\text{site\_market}}$	72	kg/head	weighted average all swine subcategories based on weight from site data
$W_{\text{default\_market}}$	50	kg/head	IPCC default value, function of genetics
$VS_{\text{default\_market}}$	0.3	Kg VS/head*day	IPCC default value, function of genetics
$nd_{\text{market}}$	365	days/yr	treatment plant is operational

$VS_{\text{market}}$	157.7	Kg VS/head*day
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$BE_{CH_4,y}$	11,080.3	tCO <sub>2</sub> e/yr
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### Electricity and Heat-Baseline

$$BE_{elec/heat,y} = EG_{Bl,y} \cdot CEF_{Bl,elec,y} + EG_{d,y} \cdot CEF_{grid} + HG_{BL,y} \cdot CEF_{Bl,therm,y}$$

where

Parameter	Value	Unit	Source/Comment
$EG_{Bl,y}$	0	MWh/yr	site data
$CEF_{Bl,y}$	0	tCO <sub>2</sub> /MWh	
$EG_{d,y}$	0	MWh	site data, from EPC provider
$CEF_{grid}$	0	tCO <sub>2</sub> /MWh	Based on national or regional grid
$HG_{Bl,y}$	0	MJ	site data, from EPC provider
$CEF_{Bl,therm,y}$	0	tCO <sub>2</sub> /MJ	

$BE_{elec/heat,y,y}$	0.0	tCO <sub>2</sub> e/yr
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#### B.6.4 Summary of the ex-ante estimation of emission reductions:

>> The ex-ante emission estimate is based on a figure of 12500 head of swine at a weighted average of 72 kg per animal. The methane generated from this was calculated using the IPCC Tier II calculation method and an annualised figure of 10,080 was obtained for the baseline emission.

#### B.7 Application of a monitoring methodology and description of the monitoring plan:

##### B.7.1 Data and parameters monitored:

<b>Data / Parameter:</b>	<b>E</b>
Data unit:	KWh
Description:	Electricity Generation of the Project
Source of data to be used:	Continuous
Value of data	
Description of measurement methods and procedures to be applied:	Electricity will be metered through the use of an electricity meter
QA/QC procedures to be applied:	Electricity meter will be subject to regular maintenance, calibration and testing regime to ensure accuracy.
Any comment:	Will be stored electronically.

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<b>Data / Parameter:</b>	<b>M</b>
Data unit:	m <sup>3</sup> /day (cubic metres per day)
Description:	Biogas recovered and used as fuel or flared
Source of data to be used:	Continuous.
Value of data	Biogas will be monitored through the use of a gas flow meter
Description of measurement methods and procedures to be applied:	Will be stored electronically.
QA/QC procedures to be applied:	A gas flow meter will be subject to regular maintenance, calibration and testing regime to ensure accuracy
Any comment:	Periodic calibrations to be conducted on metering system.

<i>(Copy this table for each data and parameter)</i>	
<b>Data / Parameter:</b>	<b>MC</b>
Data unit:	%
Description:	Methane content of biogas
Source of data to be used:	External specialist.
Value of data	
Description of measurement methods and procedures to be applied:	The methane content (%) of the captured biogas will be analysed quarterly using a gas analyzer on a gas sample. In the event that the methane content of the quarterly.
QA/QC procedures to be applied:	The methane content of the combusted gas will be analysed with quarterly samples. In the event that the methane content of the quarterly samples varies significantly, monthly samples will be taken. A gas analyser will be used to sample the biogas and measure the CH <sub>4</sub> fraction of biogas.
Any comment:	Will be stored electronically.

<i>(Copy this table for each data and parameter)</i>	
<b>Data / Parameter:</b>	<b>F<sub>ef</sub> or (Fef)</b>
Data unit:	%
Description:	Flare efficiency
Source of data to be used:	The flare efficiency is defined as the fraction of time in which the gas is combusted in the flare, multiplied by the efficiency of the flaring process. Flare efficiency is assumed to be 90% to estimate ex-ante CERs. Measurement of flare efficiency will be attempted ex-post. If attempted, this will be done annually.
Value of data	

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Description of measurement methods and procedures to be applied:	
QA/QC procedures to be applied:	The methane content of the combusted gas will be analysed with quarterly samples. In the event that the methane content of the quarterly samples varies significantly, monthly samples will be taken. A gas analyser will be used to sample the biogas and measure the CH <sub>4</sub> fraction of biogas.
Any comment:	Will be stored electronically

<i>(Copy this table for each data and parameter)</i>	
<b>Data / Parameter:</b>	<b>G<sub>ef</sub> or (Gef)</b>
Data unit:	%
Description:	Generator efficiency
Source of data to be used:	The generator efficiency is defined as the fraction of time in which the gas is combusted in the generator, multiplied by the efficiency of the generating process. For the purpose of the PDD CER estimates, an ex ante 90% efficiency is assumed. Direct measurements will be attempted, in which case the actual monitored % generator efficiency would be monitored and used to calculate CERs.. If attempted, this will be done annually.
Value of data	
Description of measurement methods and procedures to be applied:	
QA/QC procedures to be applied:	The methane content of the combusted gas will be analysed with quarterly samples. In the event that the methane content of the quarterly samples varies significantly, monthly samples will be taken. A gas analyser will be used to sample the biogas and measure the CH <sub>4</sub> fraction of biogas.
Any comment:	Will be stored electronically.

<i>(Copy this table for each data and parameter)</i>	
<b>Data / Parameter:</b>	<b>E<sub>p</sub> or Ep</b>
Data unit:	kWh
Description:	Electricity consumption of the project equipment
Source of data to be used:	If none or not enough electricity is generated during a year, the CO <sub>2</sub> emissions associated with this electricity use will be estimated based on the calculated electricity consumption of the project equipment This electricity consumption associated with project equipment will be monitored by an electricity meter. The emissions from the monitored electricity usage will be subtracted from the gross electricity generation from biogas (if any), or from the total project emissions reductions (if no electricity is generated).
Value of data	
Description of	

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measurement methods and procedures to be applied:	
QA/QC procedures to be applied:	The electricity meter for the project equipment energy consumption will also be subject to regular maintenance, calibration and testing regime to ensure accuracy.
Any comment:	Will be stored electronically.

**B.7.2 Description of the monitoring plan:**

&gt;&gt;

The monitoring plan will involve the monitoring of the following parameters on a regular basis.

- Percentage methane in gas
- Volume of biogas from digester
- Amount of electricity generated
- Flare Efficiency (possible calculation)
- Generator Efficiency (possible calculation)
- Electricity consumption of project equipment

**B.8 Date of completion of the application of the baseline and monitoring methodology and the name of the responsible person(s)/entity(ies)**

>> Date of completion of the application of the baseline and monitoring methodology is September, 2007.

EcoSecurities Ltd is the entity determining the monitoring plan and participating in the project as the Carbon Advisor. EcoSecurities is not a project participant. The person in charge of its development is:

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**SECTION C. Duration of the project activity / crediting period**
**C.1 Duration of the project activity:**
**C.1.1. Starting date of the project activity:**

>> The project is planned to start operation in January 2008.

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**C.1.2. Expected operational lifetime of the project activity:**

>> The operational lifetime of the technology is in excess of 25 years; however, the crediting period will be limited to a maximum of 21 years.

**C.2 Choice of the crediting period and related information:**

**C.2.1. Renewable crediting period**

The 21-year renewable crediting period (three 7-year renewable periods) has been opted for the proposed project.

**C.2.1.1. Starting date of the first crediting period:**

>> January 2008.

**C.2.1.2. Length of the first crediting period:**

>>7y-0m

**C.2.2. Fixed crediting period:**

Not applicable

**C.2.2.1. Starting date:**

>> Not applicable

**C.2.2.2. Length:**

>> Not applicable

**SECTION D. Environmental impacts**

>>

**D.1. If required by the host Party, documentation on the analysis of the environmental impacts of the project activity:**

>> A Record of Decision (ROD) was obtained from the relevant government authorities approving the continuation of the project with the information submitted. A full independent environmental impact assessment (EIA) was not required by the authorities.

**D.2. If environmental impacts are considered significant by the project participants or the host Party, please provide conclusions and all references to support documentation of an environmental impact assessment undertaken in accordance with the procedures as required by the host Party:**

>> The environmental impacts of this project were considered insignificant and were approved as such by the relevant authorities too.

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**SECTION E. Stakeholders' comments**

>>

**E.1. Brief description how comments by local stakeholders have been invited and compiled:**

>> The local neighbours to the farm have been contacted with details of the project. Mr Humphries had let the neighbours know about the project after complaints had been received about odour from the farm effluent.

**E.2. Summary of the comments received:**

>>The comments were all related to the excessive odour emanating from the effluent and that any action to minimise and mitigate this would be welcomed and the project proposal was received with acceptance.

**E.3. Report on how due account was taken of any comments received:**

>>Comments on the odour initiated a way to prevent the odour. A quick fix had been undertaken with the introduction of odour reducing additive into the ponds. This was always seen as a temporary solution. The project activity was a more permanent and sustainable option to satisfy the stakeholders.

CDM – Executive Board

**Annex 1****CONTACT INFORMATION ON PARTICIPANTS IN THE PROJECT ACTIVITY**

Organization:	Humphries Boerdery Pty Ltd
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Country:	South Africa
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URL:	
Represented by:	
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Salutation:	
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Middle Name:	
First Name:	Lourens
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**Annex 2**

**INFORMATION REGARDING PUBLIC FUNDING**

**-- NOT APPLICABLE --**