

(Revised 5/12/07)

MONITORING REPORT

(31/08/2006 to 30/09/2007)

Methane Capture and Combustion from Swine Manure

Treatment Project at

PT Indotirta Suaka Bulan Farm in

Indonesia

Reference no. UNFCCC 0450

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INTRODUCTION

PT Indotirta Suaka (PT ITS) farm is a large-scale swine husbandry farm located in Bulan island, Riau province, Indonesia, with approximately 230,000 pigs standing population on a steady basis.

Ever since PT IndoTirta Suaka (PT ITS) started its pig farm operations in 1986 the company have been fully aware of the environmental impact that a large scale pig operation can have on Bulan island and the surrounding islands.

During its period of operation PT ITS have implemented different systems for its waste management including open anaerobic and aerobic lagoons, installing sedimentations ponds to existing systems and also fan separators to remove the sludge from the effluent discharge before entering the lagoons.

In April 2005, PT ITS the largest swine producer in Indonesia, completed a feasibility study to improve the waste management systems by installing HDPE sheets to the anaerobic and sedimentation ponds to create covered “anaerobic digesters”. This technology has many advantages including reduction of the odour from effluent discharges, improvement to the quality of the waste water discharge and mitigating climate change through reduction of methane gas emissions from the waste lagoons. At around the same time, PT ITS formed a Special Purpose Company (PT Agro Green Asia) together with Mitsui & Co., Ltd from Japan as an Annex I Project Participant to progress this Project under the Clean Development Mechanism of the Kyoto Protocol. Greenhouse gas (GHG) emissions reduction is achieved by flaring the captured methane using flare burners approved under methodology AM0006 (this methodology has since been revised).

The covered anaerobic lagoons digesters technology has approved additionality and is an improvement to the common practice of swine waste treatment in Indonesia where methane is emitted directly into the atmosphere from open lagoons.

The covered “anaerobic digester” technology is being implemented in stages in PT ITS farm with the target to eventually install this technology to all the waste management systems on Bulan island.

PT ITS initiated Stage I of the Project in early 2007 with the construction and operation of covered “anaerobic digesters” systems in six locations around the farm. The next Stage is scheduled to start construction in March 2008 for completion by end of 2008 and the last Stage scheduled for completion in early 2009.

STATUS OF CDM PROJECT UNFCCC-0450 IN PULAU ISLAND

The following table shows the schedule of construction of the Project under Stages I, II & III.

Table 1: Current Status and Schedule of Completion

LOCATION	UNIT No	SYSTEM TYPE	FLARE	STARTING DATE
STAGE I				
Zone 1	Unit 1-7	Anaerobic Digester	Yes	Under Construction. Nov 07 Completion
Zone 2	Unit 8-9	Anaerobic Digester	Yes	Construction completed. Started flaring gas 17th April 07
Zone 3	Unit 10-14	Anaerobic Digester	Yes	Construction completed. Started flaring gas 29th May 07
Zone 4	Unit 15-16,25	Anaerobic Digester	Yes	Construction completed. Started flaring gas 24th Sept 07
Zone 5	Unit 18	Anaerobic Digester	Yes	Construction completed. Started flaring gas 14th May 07
Zone 6	Unit 20	Anaerobic Digester	Yes	Construction completed. Started flaring gas 25th June 07
STAGE II				
				Proposed construction 2009. To Commence after Stage 3 completion.
Zone 7	Unit 17,19,21,22	Anaerobic Digester		
Zone 8	Unit 23,23,26	Anaerobic Digester		
STAGE III				
				Proposed construction Start March 2008.
Zone 9	Unit 27,28,28,30	Anaerobic Digester		
Zone 10	Unit 31,32,33	Anaerobic Digester		
Zone 11	Unit 34,35,36	Anaerobic Digester		
Zone 12	Unit 37,38,39	Anaerobic Digester		

IMPLEMENTATION OF PROJECT

The construction of the Project is scheduled to be built in three Stages (see Table 1). Stage I of the construction of the Project involved constructing six “anaerobic digester” treatment ‘Zones’ in various farm Units located around Phase 1, 2 and 3 of the farm (the barn units are located in either Phases 1, 2, 3 or 4 around Bulan island).

Five of the six Zones scheduled under Stage I have been constructed and completed as planned and described in the Project Design Document (PDD) while a remaining Zone (located in Phase 1 of the farm) to be completed by November 2007.

Zones 2, 3, 4, 5, 6 have been operating continuously and as designed since starting their operations.

Stage III (located in Phase 4) will start construction and be implemented from March 2008 with a targeted completion date of December 2008.

Conversely, Stage II (located in Phase 3) of the Project will be implemented after the completion of Stage III. Projected target for completion of Stage II is 2008/2009.

Apart from some brief stops for some small mechanical problems with the flare systems, the Project has been operating within the parameters described in the PDD.

The commencement and progress of construction of Project was delayed from original PDD timeline due to several reasons namely:

- delays in approvals from Indonesian DNA and foreign investments authorities resulting in delays in formation and registration of Project Special Purpose Company (SPC);
- Economic financial reasons causing delays in equity injection and in ordering of equipments;
- Supply chain problems arising from delays by equipment supplier and import regulatory requirements;
- Unusually wet weather conditions during earthwork and concrete laying stages.

PARAMETERS MONITORED ACCORDING TO MONITORING PLAN

In order to implement a precise and accurate monitoring plan PT IndoTirta Suaka has established systems to record and monitor each parameter as part of its management systems.

The following description details the operational and management structure put in place by PT ITS for monitoring the emission reductions during the project period.

Table 2: Monitored Information based on the Monitoring Plan

DATA VARIABLE	DATA UNIT	DATA ORIGIN
Swine Population	Head	Daily animal stock count including mortality and born alive. Information managed by PT ITS farm administration with software programs PigChamp and GrowScan
Average weight of swine.	Kg	Pigs weighed in barns and at weighbridge.. Information managed by PT ITS farm administration.
Biogas Flow extracted by digester	SCFM	Recorded by electronic flow meter. Information managed by Monitoring manager and PT ITS
Co2 Concentration in Gas Flow	%	Recorded by Gas Analyzer. Information managed by Monitoring manager and PT ITS
Flare Efficiency	%	Design combustion efficiency. Provided by PT Organics.

MONITORING PERIOD AND EMISSION REDUCTIONS

This Monitoring Report covers the Period from 31/08/2006 to 30/09/07.

The following Table 3 shows emissions for Baseline scenario in Zones 1-6 systems

Table 3: BASELINE EMISSIONS ZONES 1-6

M/Y	DAYS	Baseline Emmissions / TonsCO2e						TOTAL
		ZONE 1	ZONE 2	ZONE 3	ZONE 4	ZONE 5	ZONE 6	
Aug-06	31	0	0	0	0	0	0	0
Sep-06	30	0	0	0	0	0	0	0
Oct-06	31	0	0	0	0	0	0	0
Nov-06	30	0	0	0	0	0	0	0
Dec-06	31	0	0	0	0	0	0	0
Jan-07	31	0	0	0	0	0	0	0
Feb-07	28	0	0	0	0	0	0	0
Mar-07	31	0	0	0	0	0	0	0
Apr-07	30	0	428	0	0	0	0	428
May-07	31	0	935	231	0	898	0	2,064
Jun-07	30	0	909	2,355	0	1,550	239	5,053
Jul-07	31	0	971	2,492	0	978	1,539	5,980
Aug-07	31	0	1,005	2,528	0	1,450	1,517	6,500
Sep-07	30	0	943	2,442	241	1,550	1,215	6,391
	TOTAL	0	5,191	10,048	241	6,426	4,510	26,416

The following Table 4 shows emissions for Project scenario in Zones 1-6 systems


Table 4: PROJECT EMISSIONS ZONES 1-6

M/Y	DAYS	Project Emmissions / TonsCO2e						TOTAL
		ZONE 1	ZONE 2	ZONE 3	ZONE 4	ZONE 5	ZONE 6	
Aug-06	31	0	0	0	0	0	0	0
Sep-06	30	0	0	0	0	0	0	0
Oct-06	31	0	0	0	0	0	0	0
Nov-06	30	0	0	0	0	0	0	0
Dec-06	31	0	0	0	0	0	0	0
Jan-07	31	0	0	0	0	0	0	0
Feb-07	28	0	0	0	0	0	0	0
Mar-07	31	0	0	0	0	0	0	0
Apr-07	30	0	48	0	0	0	0	48
May-07	31	0	104	26	0	100	0	230
Jun-07	30	0	101	262	0	173	27	563
Jul-07	31	0	108	277	0	109	171	665
Aug-07	31	0	112	281	0	161	169	723
Sep-07	30	0	105	272	27	173	135	712
	TOTAL	0	578	1,118	27	716	502	2,941

The following Table 5 shows the Emission Reductions for Zones 1-6 during the Monitoring Period.

Table 5: EMISSION REDUCTIONS ZONES 1-6

M/Y	DAYS	Emission Reductions / TonsCO2e						TOTAL
		ZONE 1	ZONE 2	ZONE 3	ZONE 4	ZONE 5	ZONE 6	
Aug-06	31	0	0	0	0	0	0	0
Sep-06	30	0	0	0	0	0	0	0
Oct-06	31	0	0	0	0	0	0	0
Nov-06	30	0	0	0	0	0	0	0
Dec-06	31	0	0	0	0	0	0	0
Jan-07	31	0	0	0	0	0	0	0
Feb-07	28	0	0	0	0	0	0	0
Mar-07	31	0	0	0	0	0	0	0
Apr-07	30	0	380	0	0	0	0	380
May-07	31	0	831	205	0	798	0	1,834
Jun-07	30	0	808	2,093	0	1,377	212	4,490
Jul-07	31	0	862	2,215	0	869	1,368	5,314
Aug-07	31	0	893	2,247	0	1,289	1,348	5,777
Sep-07	30	0	838	2,170	214	1,378	1,079	5,679
	TOTAL	0	4,612	8,930	214	5,711	4,007	23,474



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