

# AGRICULTURE SUCCESS STORY

## K.O.S. Farm

### Ratchaburi Province, Thailand

#### OVERVIEW OF AGRICULTURE PROJECT:

This activity at the K.O.S. farm in the Ratchaburi province of Thailand is reducing greenhouse gas (GHG) emissions from swine manure. Open anaerobic lagoons were converted to continuous flow closed anaerobic treatment digesters (Channel Digester Plus or “CDP”) and biogas is captured to generate power.

**PROJECT START DATE:** August 2009

**ESTIMATED ANNUAL EMISSION REDUCTIONS: 3,394 TCO<sub>2</sub>E**



#### ESTIMATED METHANE EMISSIONS

Animal Type	Standing Animal Population (head)	Volatile Solids (VS), kg/hd/day	Total VS, kg/day	B <sub>0</sub> Ultimate Methane Yield, m <sup>3</sup> /kg	Ultimate Methane Yield, m <sup>3</sup> /day	Methane Conversion Factor (MCF)	Estimated Emissions, tCO <sub>2</sub> /year
Swine	Boars: 30 Sow: 900 Fattening I: 1,657 Fattening II: 1,973 Weanling: 1,262 Farrow: 1,105	Boars: 0.33 Sow: 0.23 Fattening I: 0.27 Fattening II: 0.48 Weanling: 0.15 Farrow: 0.09	1,900	0.45	815	0.8	3,394

# COST & REVENUE INFORMATION

Estimated Installed Cost: US\$ 267,262  
Operation & Maintenance (per year): US \$19,075  
Estimated electricity offsets (per year): US \$35,794

Estimated heating/other benefits (US\$/year): n/a  
Other revenue streams: n/a  
Estimated payback period: 8.6 years

## PROJECT HIGHLIGHTS

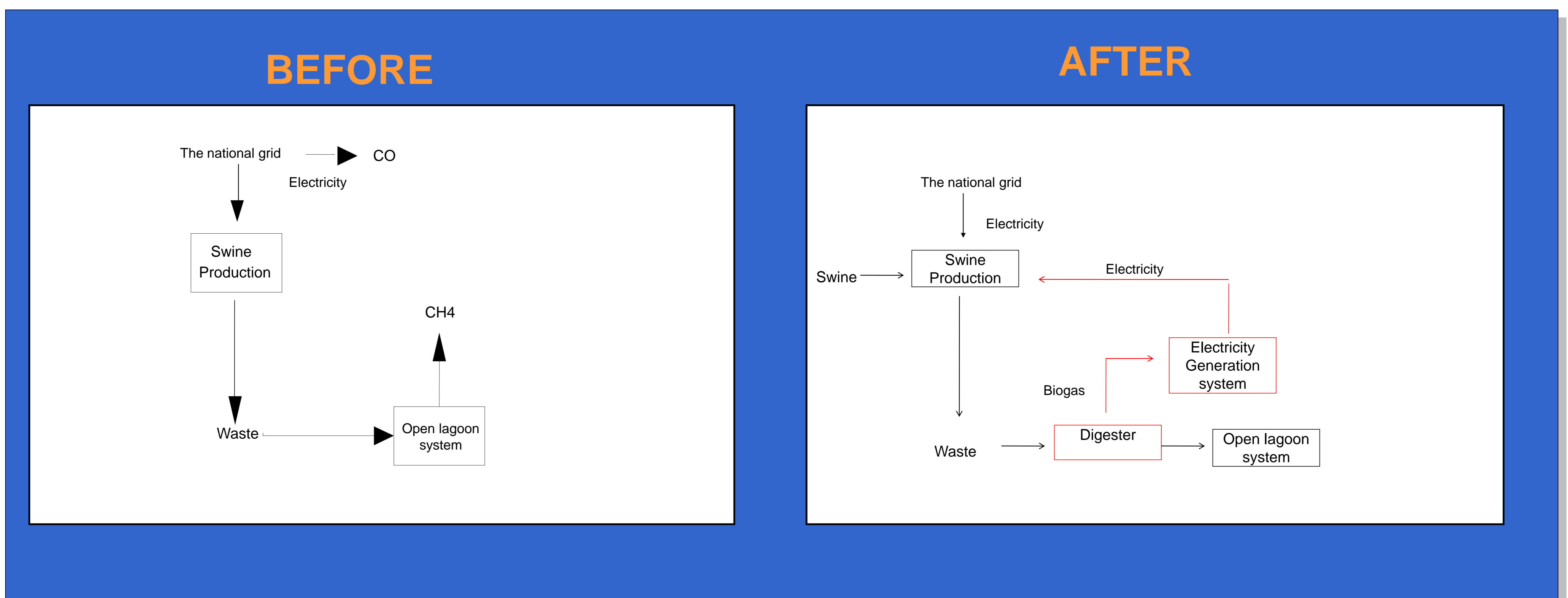
This project is a waste-to-energy activity and the farmer receives multiple benefits:

- 1) Solutions to waste management and
- 2) Monetary savings from electricity generation

## OTHER ENVIRONMENTAL AND HUMAN HEALTH BENEFITS

- The farm's wastewater is treated by the anaerobic treatment system and then treated by an existing open lagoon system before it is sent to nearby agriculture. As a result, untreated wastewater is not discharged to the public water bodies.
- The anaerobic treatment system is closed; therefore, it reduces unpleasant odors diffused to surrounding areas.
- Breeding sites for flies, other disease vectors, and other unsanitary conditions are reduced because all swine manure is collected and sent to the anaerobic treatment system.
- Agriculturists nearby can earn more money because of the plentiful amount of water provided by the farm.

## SYSTEM DIAGRAMS



## FOR MORE INFORMATION

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