

Location

Write a description for your map.

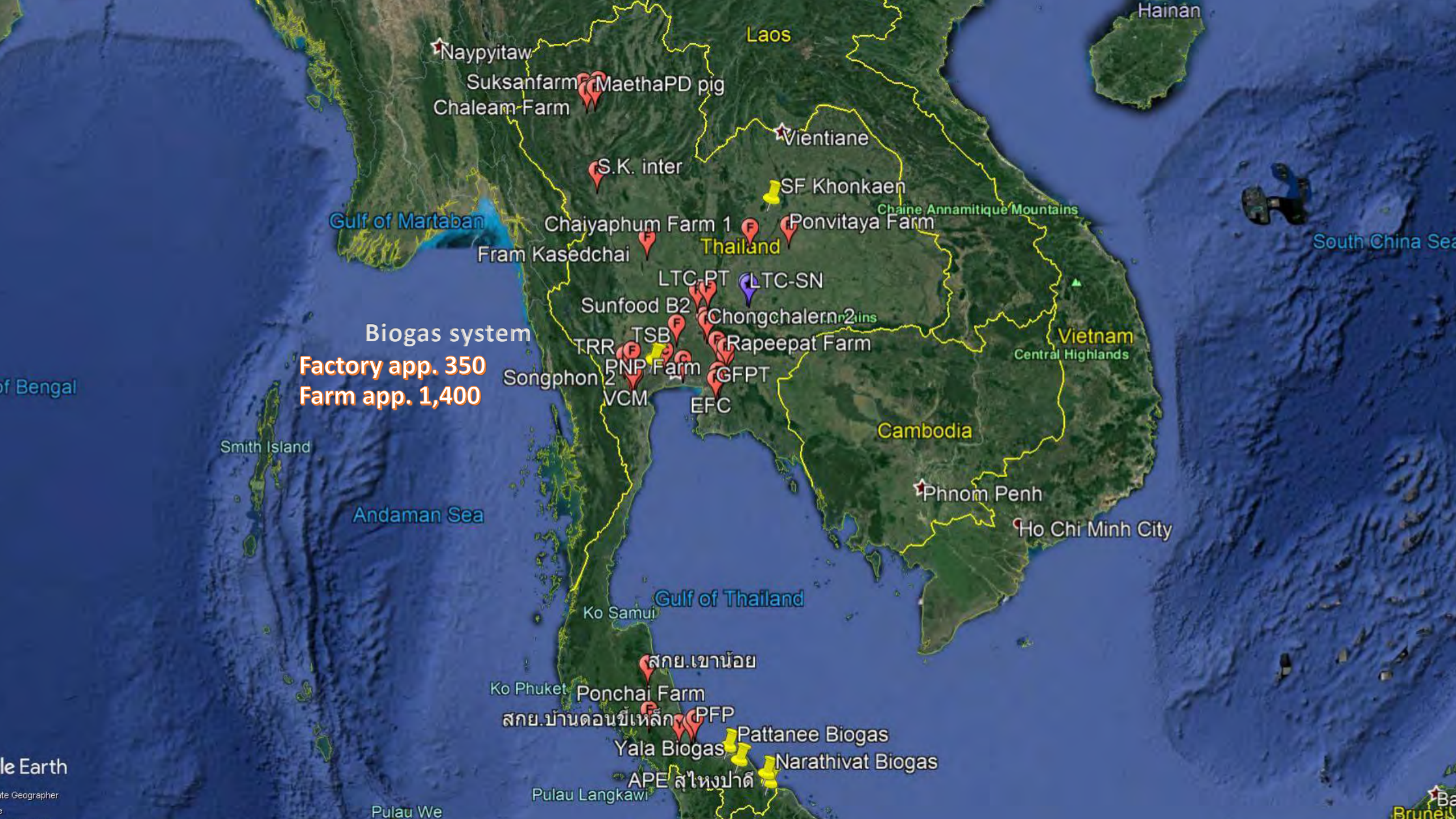
Legend



Unemployment rate

Goeie middagi

Data: SIO, NOAA, U.S. Navy, NGA, GEBCO



Biogas system
Factory app. 350
Farm app. 1,400

Naypyitaw
Suksanfarm
Maetha PD pig
Chaleam Farm

S.K. inter
Vientiane
SF Khonkaen

Gulf of Martaban
Chaiyaphum Farm 1
Ponvitaya Farm
Fram Kasedchai

Thailand
LTC-PT
LTC-SN
Sunfood B2
Chongchalern 2 ins

TRR
TSB
Rapeepat Farm
Songphon 2
GNP Farm
GFPT
VCM
EFC

Vietnam
Central Highlands

Cambodia

Phnom Penh
Ho Chi Minh City

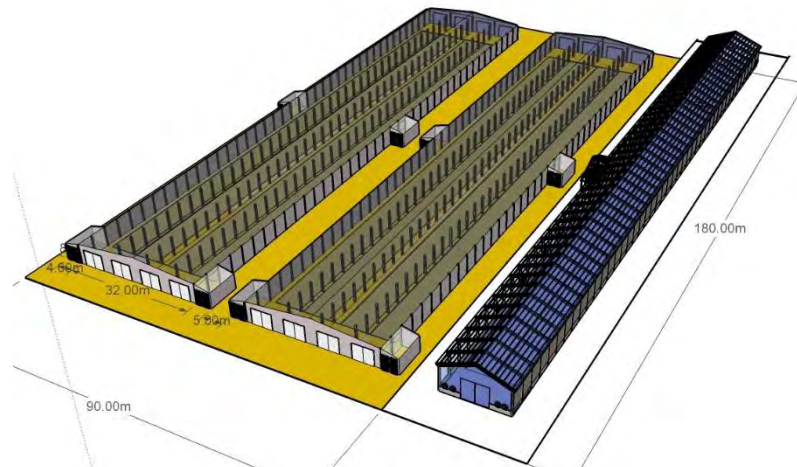
Gulf of Thailand

Ko Samui
สกย.เขาน้อย
Ko Phuket
Ponchai Farm
สกย.บ้านดอนขี้เหล็ก
PFP
Yala Biogas
Pattanee Biogas
Narathivat Biogas
APE สโห่งป่าด
Pulau Langkawi

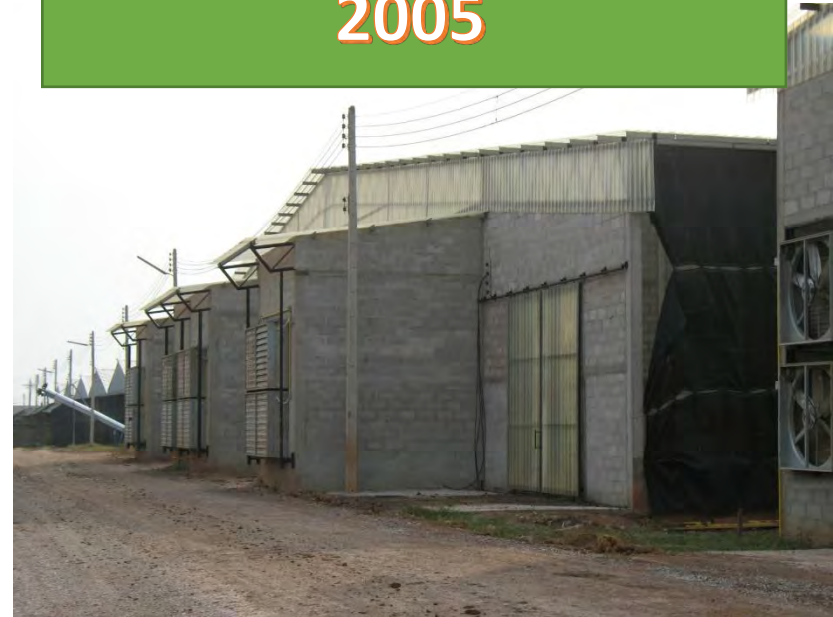
Pulau We



FEAT KKU : ZZ Solution in SA



SF KHONKAEN 2005



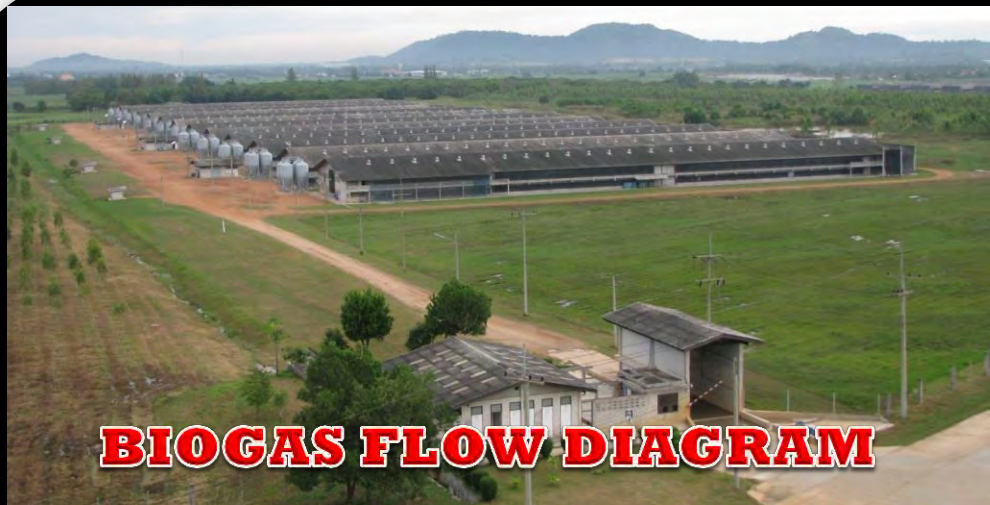


SF KHONKAEN
2005





FEAT KCU : ZZ Solution in SA



Digester



Gas storage



๑๓ พฤศจิกายน ๒๕๖๐

FEAT KKU : ZZ Solution in SA



Biogas Engine

Gas Flare

Tanker



SF KHONKAEN 2011
1,000,000 Birds







Cargill meat(Thailand)co.,Ltd Farm 13



Cargill meat(Thailand)co.,Ltd Farm 14



GFPT public company



Rapeepat Farm co.,Ltd







MTF co.,ltd



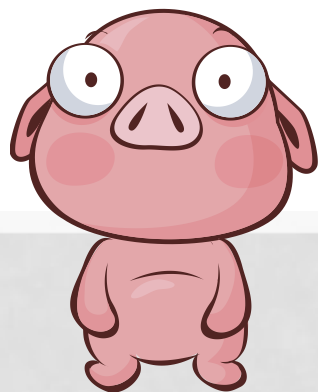
Soankaset 99 Farm co.,ltd



LTC Agriculture co.,ltd : PT



LTC Agriculture co.,ltd : SN

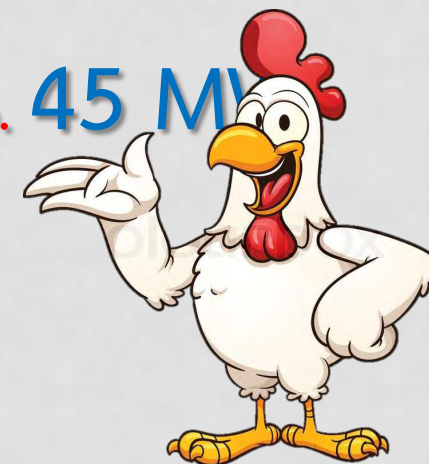


ANIMAL IN THAILAND

- Fattening Pig > 18,000,000 pigs/a app. 40 MW

- Chicken Layer > 50,000,000 Birds/a app. 50 MW

- Chicken Broiler > 1,500,000,000 Birds/a app. 45 MW





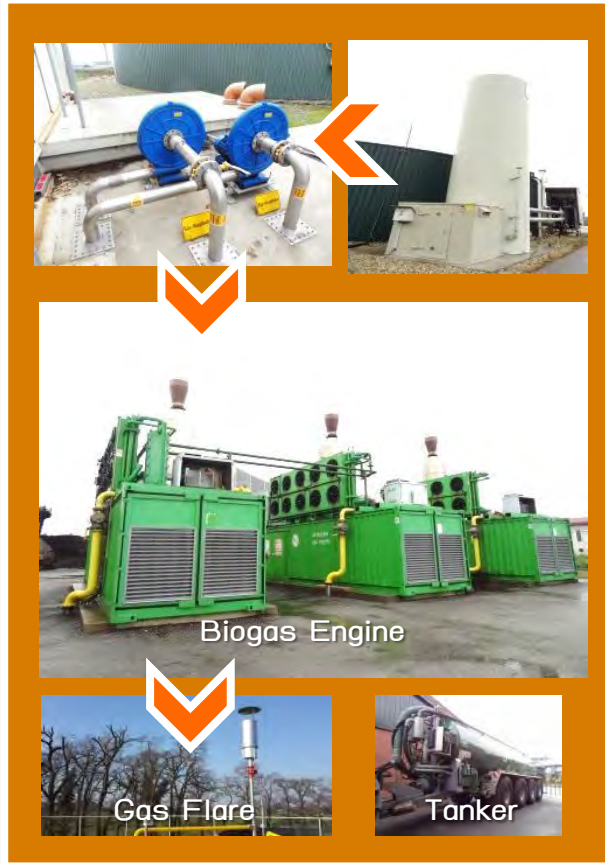
FLOW DIAGRAM



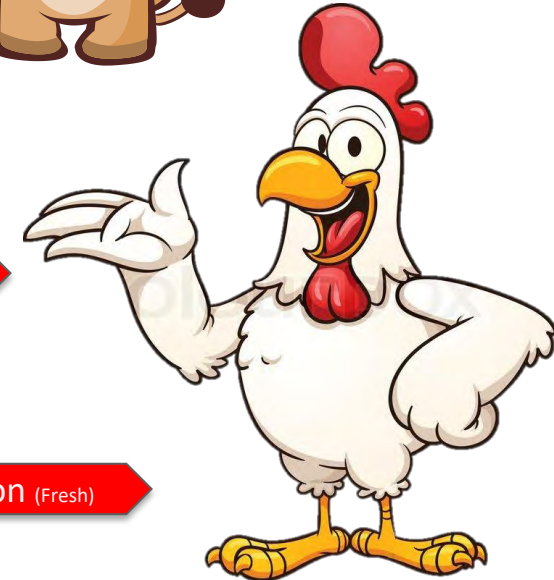
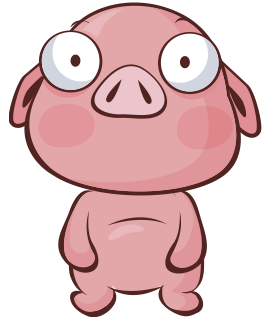
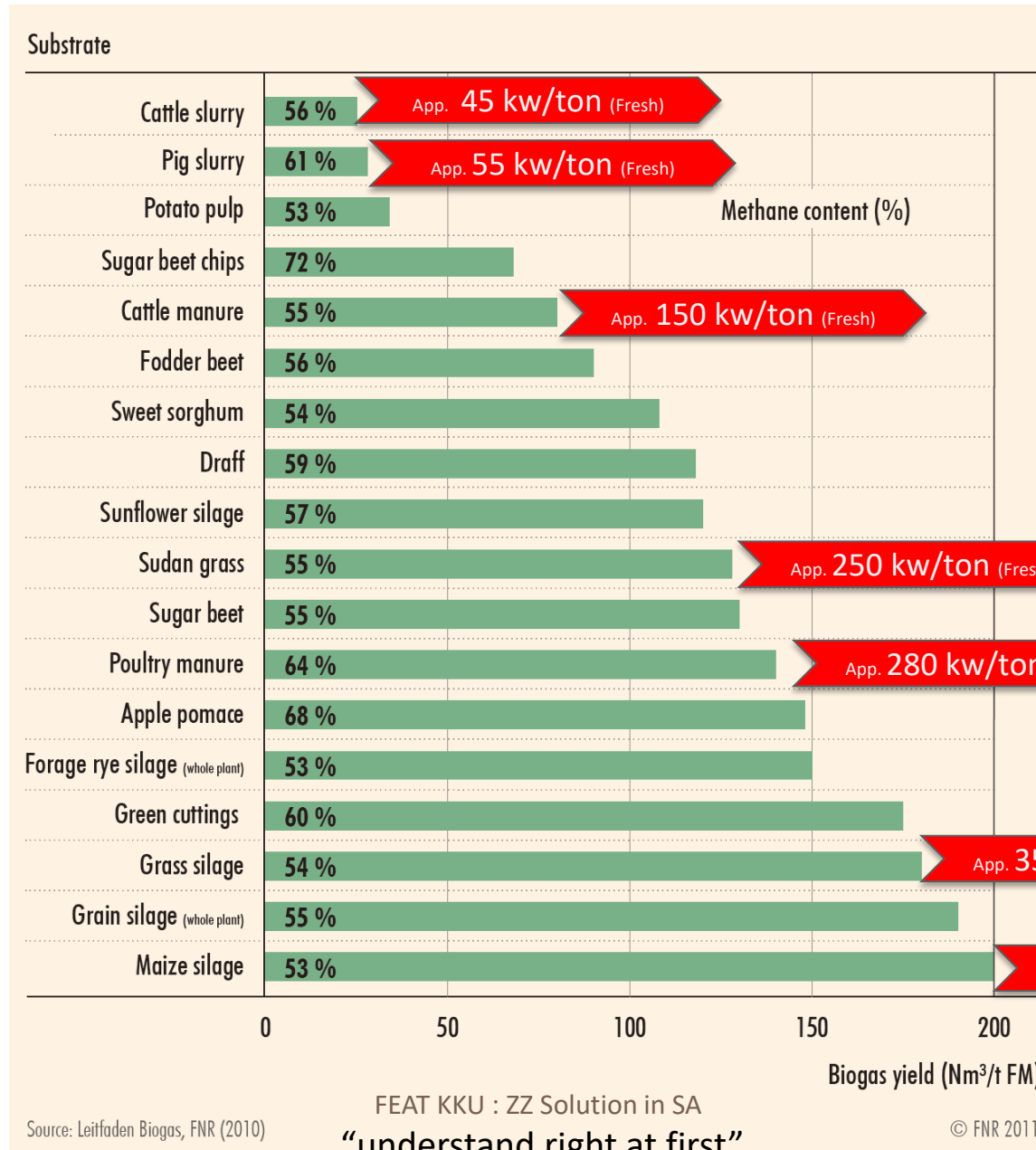
Digester



Gas storage



Biogas yield Nm3 per Nton Fresh Mamure



TECHNOLOGY SELECTION

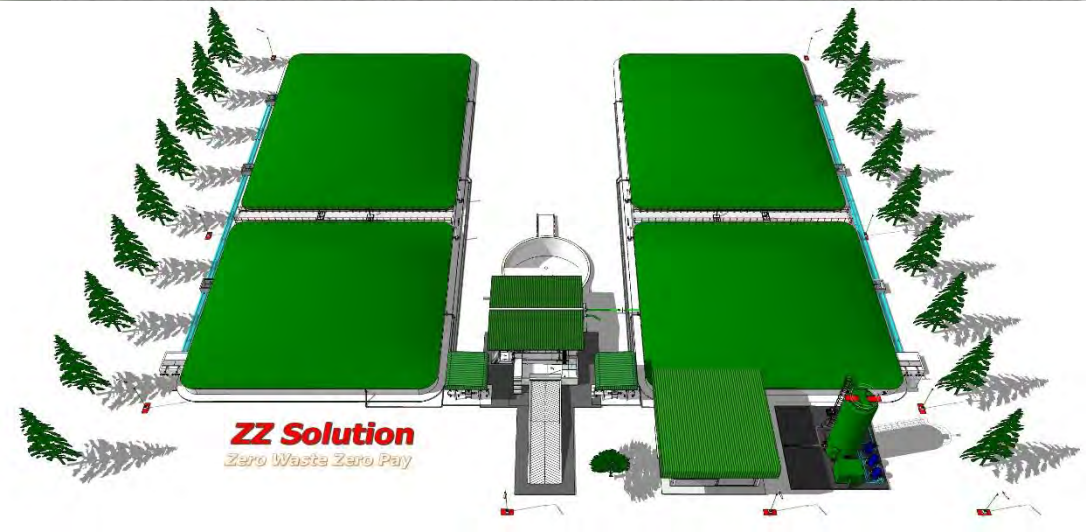


- **Volume of raw material**
- **Characteristic and type of raw material**
- **Pay back period**
- **Labor quantity, quality and managements**
- **Size of Land**
- **Future expandable of business**



MMT : MULTI MIXING TANK

**Faster construction and cost saving
good performance**





SW : SINGLE WALL DIGESTER





DW : DOUBLE WALL DIGESTER



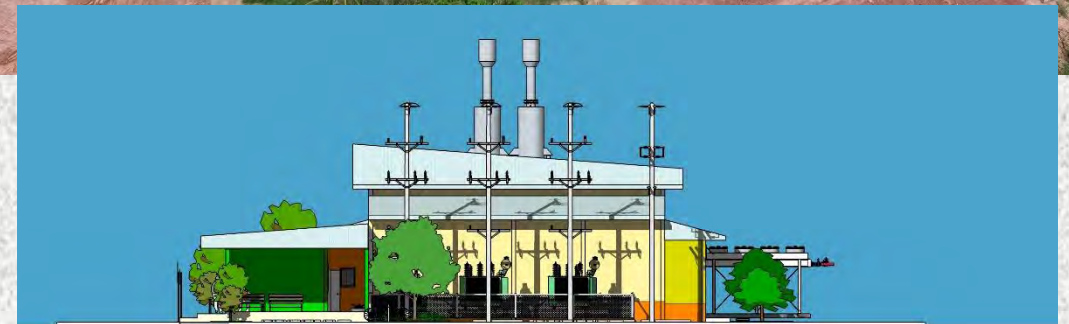
Space Saving 10-30%
Reduction of Pipe 20-40%
Reduction of Short circuit 30-50%
More Mixing Efficiency lower electric consumption



xDW : MULTI DOUBLE WALL DIGESTER



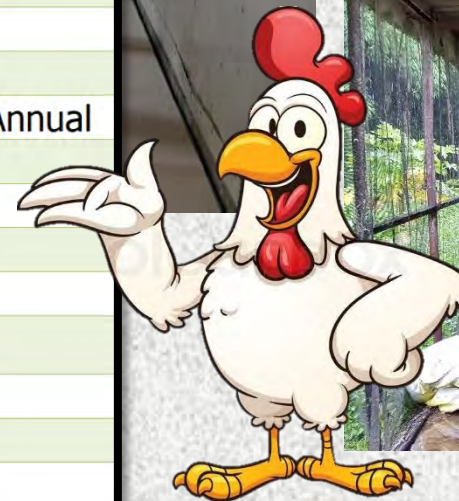
- **Maximum efficiency**
- **Space Saving 10-30%**
- **Reduction of Pipe 20-40%**
- **Reduction of Short circuit 30-50%**
- **More Mixing Efficiency lower electric consumption**



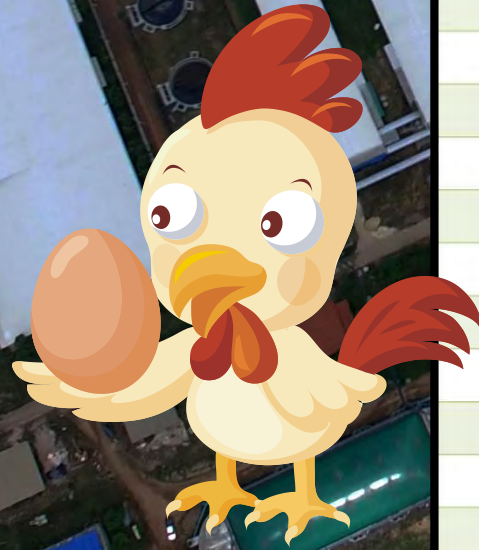
274,000 (2.3 KG) BROILER IN SA



Broiler	274,560	Birds
Weight	2.35	Kg.
FCR	1.70	
Cycle	6	Cycle/Annual
Manure/annual	1,766,794	Kg.
Biogas/annual	194,347	cu.m.
Estimate Electric/annual	320,673	kwh
Electric saving Cost/annual	327,086	ZAR
6Y Investmenr (electric)	1,635,432	ZAR
Or LPG Saving/annual	81,626	Kg.
Or CBG Saving/annual	979,510	ZAR
6Y Investment (CBG)	5,597,202	ZAR

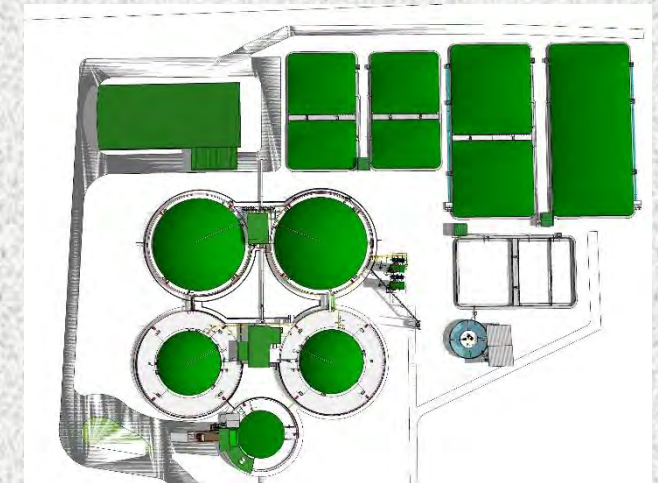


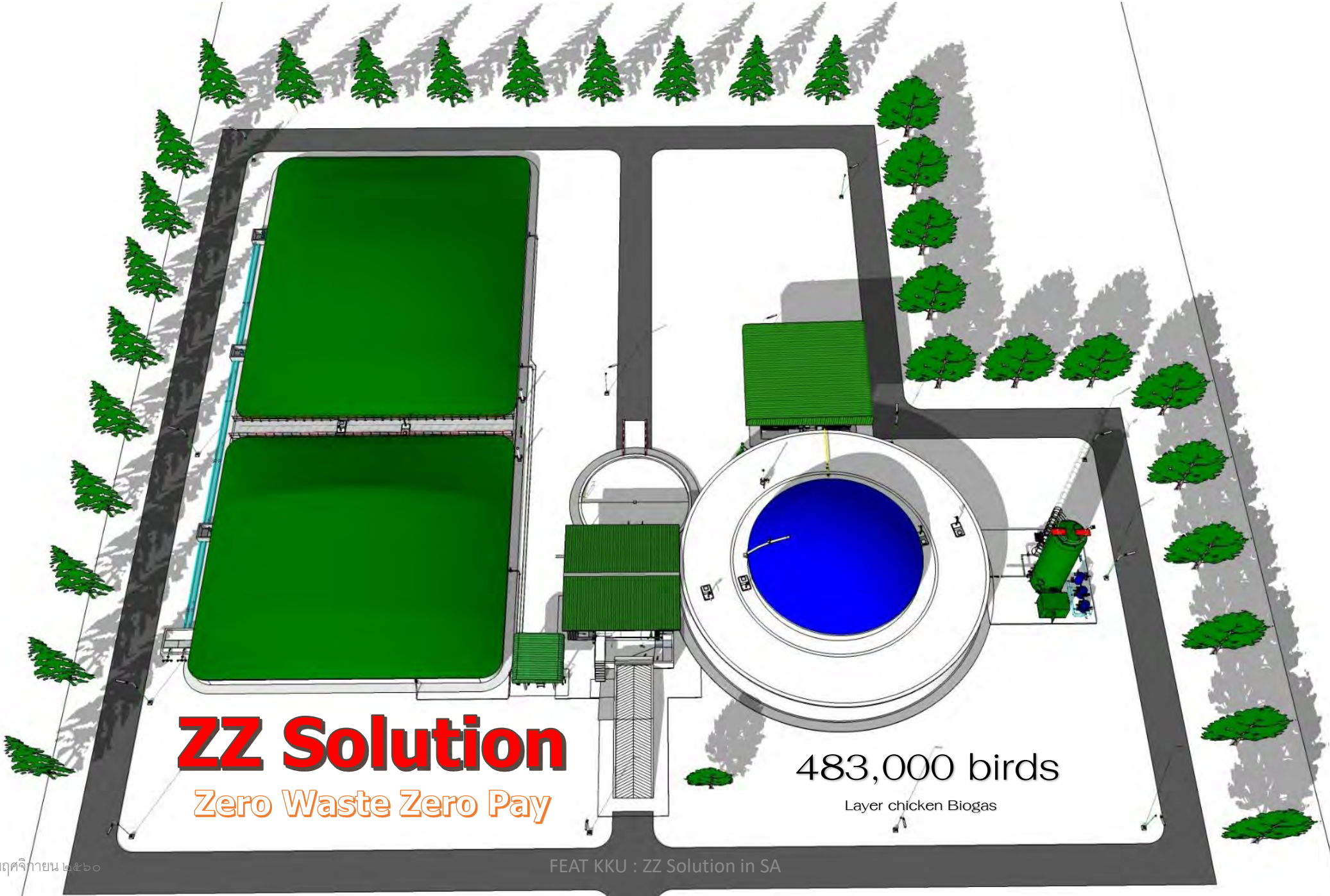
600,000 LAYER IN SA



Layer	604,800	Birds
Eggs Weight	0.061	Kg.
FCR	1.97	
Operation	365	Day/Annual
Manure/annual	22,793	TonF
Biogas/annual	2,279,264	cu.m.
Estimate Electric/annual	4,558,529	kwh
Electric saving Cost/annual	4,649,699	ZAR
6Y Investmenr (electric)	23,248,497	ZAR
Or LPG Saving/annual	911,706	Kg.
Or CBG Saving/annual	10,940,469	ZAR (12/kg.)
6Y Investment (CBG)	65,642,815	ZAR

UNDER CONSTRUCTION 2 X 3 MW 5.5 M BROILER MANURE AND ENERGY CROP



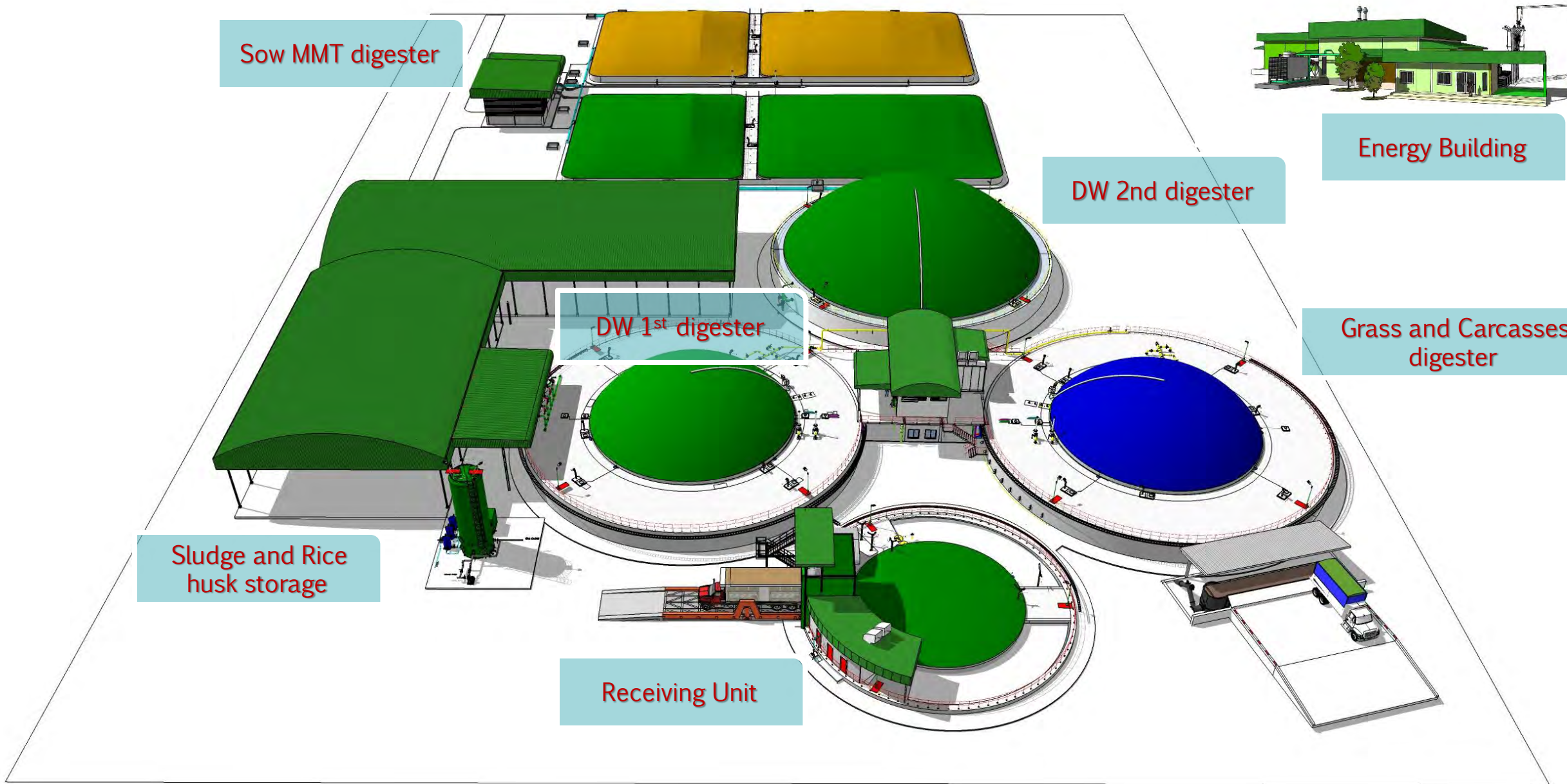


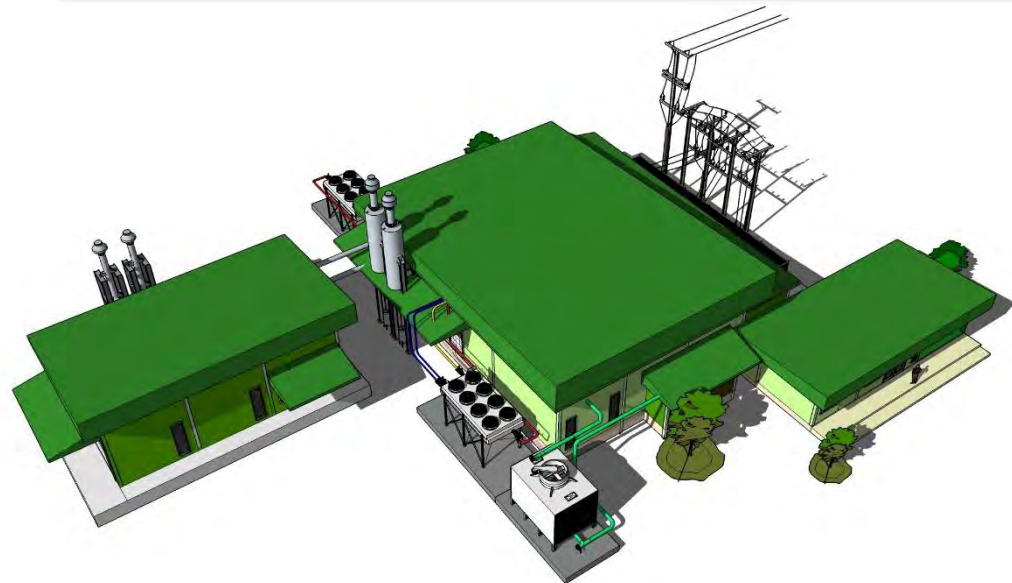
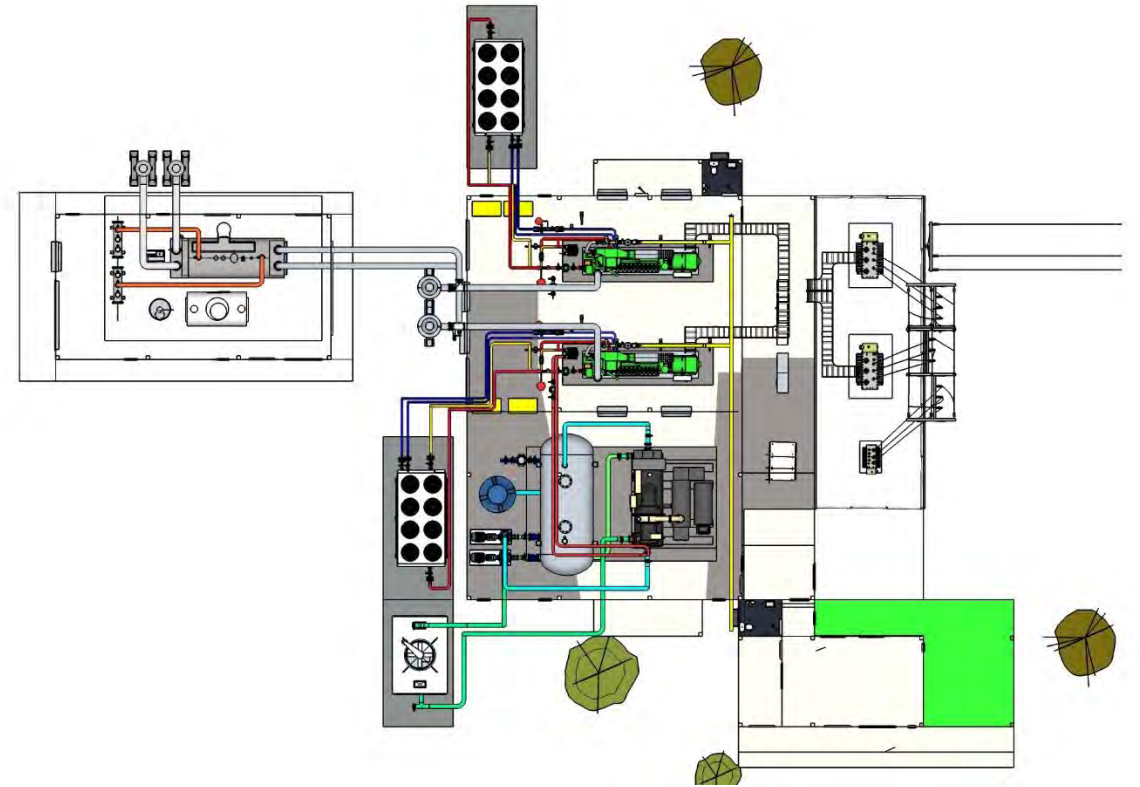
ZZ Solution

Zero Waste Zero Pay

483,000 birds

Layer chicken Biogas





ZZ 3 MW + CHP Building

ZZ Solution

Zero Waste Zero Pay

UNDER CONSTRUCTION 1 MW GRASS



1.5 MW CHICKEN MANURE + GRASS



UNDER CONSTRUCTION 4 MW GRASS



Solution step by step

- ✓ Find CBG+LBG customers >> negotiation and make selling contract or turn to be your share holder
 - ✓ Find Farm, Factory or landlord with wastewater and future energy field
 - ✓ Analyze the quantity ,type and cost of your biogas raw material
 - ✓ Select biogas technology , utilization technology and investments cost +++**optimize all**+++
 - ✓ Beware Transport and maintenance cost
-
- **5 year payback please do something immediately**



Baie dankie

“Start right way at first”