

## PROJECT OVERVIEW (Technical Summary, Location and Schedule)

<b>Name of the organization</b>	Climate Change Department
<b>State</b>	Delta State.
<b>Country</b>	Nigeria.
<b>Details of the project-site</b>	Urban/Semi Urban Town Across Delta State
<b>Project-time-period</b>	2015 -2020
<b>Project Manager:</b>	
<b>Name</b>	Dr. (Mrs.) Felicia Adun
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<b>Name of the project or Activity</b>	Installation of Biogas Technology Using Kitchen waste.
<b>Products</b>	Cooking gas for food  Bio-Fertilizer: The digested feedstock is after the digestion. A highly valuable fertilizer.
<b>Feedstock</b>	Kitchen waste Oil press cake Fish waste Agricultural waste Meat waste Saw dust Papers Rumen from cattle Crop residues- corn stalks, banana leaves, corncobs, water melon, paw paw etc. Sea weeds, water hyacinth, water lilies.
<b>System</b>	Two-stage digestion system with 1. Hydrolysis and acidification 2. Methanisation
<b>Digester volume</b>	1.0m <sup>3</sup>
<b>Average Biogas production per unit per day</b>	<b>0.5m<sup>3</sup> per day</b> Methane content: 55-60% Equivalent to 0.75kg per day of firewood or 0.4 liters of Kerosene per day.

<b>Firewood saved per year</b>	2,736kg
<b>Kerosene saved annually</b>	1,460 liters
<b>Emission Reduction per unit</b>	3,010t CO <sub>2</sub> / year
<b>Emission Reduction for 5000 unit</b>	15,050,000 tCO <sub>2</sub> / year
<b>Emission reduction for 5 years of the project</b>	75,250,000 t CO <sub>2</sub> reduction
<b>Temperature range</b>	29°C – 33°C (Average= 31°C)
<b>Bio-methanation process</b>	Mesophilic
<b>Storage system</b>	Floating type (Mild steel)
<b>Storage tank capacity per unit</b>	1.10 m <sup>3</sup>
<b>Biogas burner(designed by BDN)</b>	Household (single port)
<b>Efficiency of the burner</b>	25 %
<b>Capacity of the burner</b>	0.43 m <sup>3</sup> per hour (Max), 0.313m <sup>3</sup> /hr (avg)
<b>Safety device</b>	“Flame arrester” for blocking fire backstroke “Overpressure design on the floating tank” for regulating the gas pressure in the gas system.
<b>Filtration system (activated charcoal)</b>	Removing impurity from the system.
<b>Performance</b>	10 times higher than the manure biogas plants due to: 1. High calorific feedstock 2. Hydrolysis and acidification.