



PROJECT PROPOSAL

Integrated Waste Treatment System (IWTS)

**BIOGAS PLANT FOR HYGIENIC SUSTAINABLE
SEWAGE & WASTEWATER TREATMENT USING
ANEROBIC DIGESTION SOLUTION(ADS)**



HGSL Nigeria (Marketing Partner to Elfad Concept)

Dear Sir,

**PROPOSAL FOR THE USE OF INTEGRATED WASTE TREATMENT SYSTEM (IWTS) -
ORGANIC WASTE TO BIOGAS TECHNOLOGY.**

Elfad Concept Ltd is an indigenous Civil and Environmental Engineering company with operations in Nigeria and Ghana. The principal activity of the company is to process and recycle organic waste both solid and liquid on-site into reusable by-product. The treatment of sewage and biodegradable fractions of municipal solid waste is a response to the implementation of the Kyoto protocol (i.e. reduction in emission of greenhouse gases.)

Elfad Concept Ltd corporate mission is to provide a clean/safe environment by the use of IWTS which eliminates sewage dumping into our wetlands and poses a threat to our ecosystem. The IWTS is an Anaerobic Digestion System (ADS) which is a safer and cost effective sewage solution that will permanently stop evacuation of sludge as against the conventional septic tank system and Sewage Treatment Plant (STP). The IWTS is most suitable for highly Populated facilities and in conditions where there is a high ground water table which can cause Water ingress into the septic tanks especially in Coastal and Niger delta environment. No land is lost due to the installation of the IWTS since the structure is underground hence the used space is recovered.

IWTS consist of an Inspection chamber, Sewage Digester, Expansion chamber and a Filtration bed. The system operates via Gravity, Capillary action and Filtration. However the effluent generated from the system has good nitrogenic content, which can be used as liquid fertilizer and can also be discharged into the environment.

Some Distinct facts / Result from IWTS Installations

- ❖ *IWTS is completely an Anaerobic Digestion system.*
- ❖ *There will be **NO EVACUATION** of sludge.*
- ❖ *Create clean and healthy alternative water source to service green areas.*
- ❖ *Produce Biogas (Methane Gas) which could be utilized to power low mechanical systems and or used as direct source of energy for cooking.*
- ❖ *Super structure is not required to house IWTS as in the case of STP*
- ❖ *No Running cost incurred e.g. Energy cost associated with operating a STP.*
- ❖ *No land is lost as cars can park on the IWTS on completion.*
- ❖ *IWTS has a Life span of 40 years.*

- ❖ It is cost effective.
- ❖ It comes in varying capacity i.e. 10cu.m to 1000cu.m
- ❖ **IWTS** is an Hygienic sustainable sewage and waste water treatment system

IWTS has been tried and tested, proven effective and efficient in treating Organic waste. We have done installations in private Homes, Banks, Religious Houses, Estates, Shopping Malls, Hospitals, and Tertiary Institutions both in Nigeria and in Ghana. Therefore we highly recommend the IWTS to your management for installation. The biogas technology has been selected by clients based in both Ghana and Nigeria such as such as;

- ✓ The Elevation Church Lekki, Lagos
 - ✓ RCCG (City of David) Vitoria Island, Lagos,
 - ✓ Zenith Bank Plc. Nigeria
 - ✓ Protea Hotel Select - Owerri,
 - ✓ Protea Hotel Select - Takoradi-Ghana,
 - ✓ Ashaiman Polyclinic - Ghana
 - ✓ Onitsha shopping Mall,
 - ✓ Nairabet Head office Igbo-Efon Lekki,
 - ✓ Cooper 24 Towers, Ikoyi, Lagos
 - ✓ 8 Block of duplexes at Ikate Roundabout Lekki, Lagos State.
 - ✓ 10 Block of flats at Lekki County Estate, Ikota, Lekki, Lagos State.
 - ✓ Transparent Plaza Bayelsa State,
 - ✓ Ashesi University – Ghana
 - ✓ Central University – Ghana
- Several animal farms and domestic Homes.

The system thus offers a cost effective, climate-friendly solution for your estate operations that will meet the WHO 3Ps sustainable philosophy (Prosperity-People and Planet).

Yours Faithfully

For: **ELFAD CONCEPT**



FADIPE Oladele Elnathan MNSE
MD/ CEO

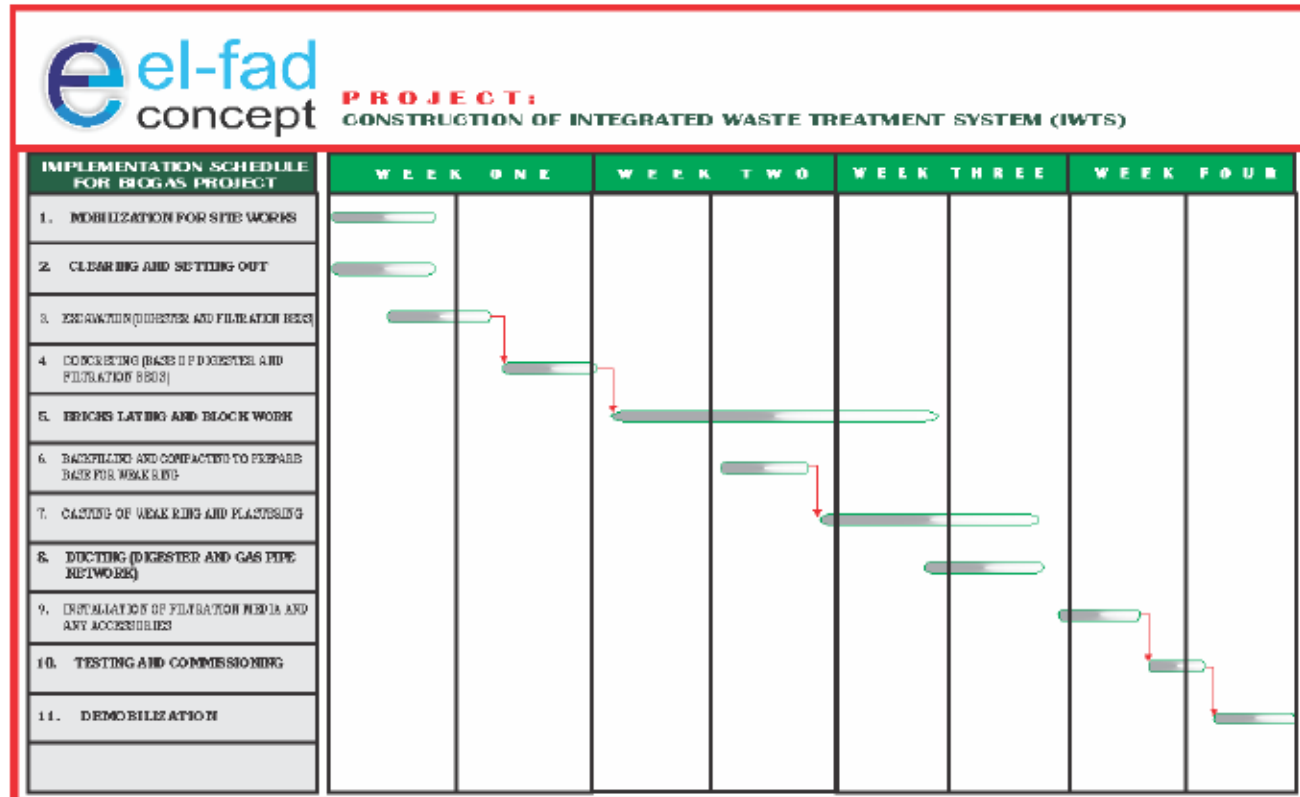
For: **HGSL Nigeria**



EGHO Sunny I.
ED, Sales & Marketing

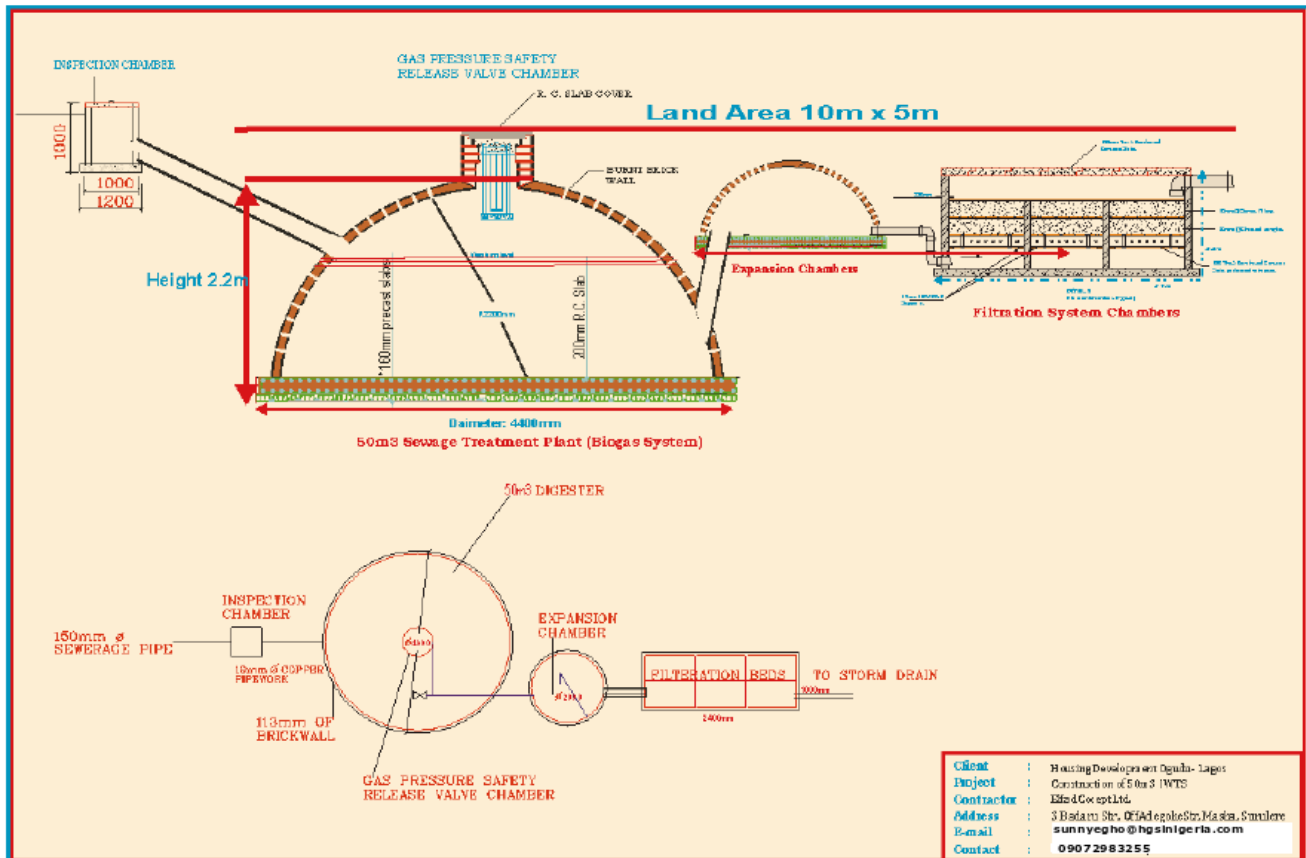
1. PROJECT ACTIVITIES

- The project activities involving pre-development (project presentation, meetings, data collection and project preparation), geodetic investigation, construction, testing and commissioning and demobilization for each system are outlined in the Table below.



2. TERMS OF PAYMENT

- a) 80% down payment on award of contract.
- b) On receipt of advance payment, the contract period begins
- c) Mobilization commences on receipt of advance payment for 1 week
- d) 15% shall be paid on completion of the work
- e) 5% Retention to be paid after three (3) months operation of the plant
- f) **Account Details:** **Elfad Concept Account numbers would be made available on request**







NAIRABET HEAD OFFICE



**ELEVATION CHURCH
AT LEKKI**



ASHESI UNIVERSITY - GHANA



**EIGHT UNIT DUPLEXES
AT IKATE OPPOSITE NIKE
ART GALLERY**



PROTEA HOTEL - GHANA



BIOGAS SYSTEM AT ELEVATION CHURCH, LEKKI

PERMANENT SOLUTION TO YOUR EVACUATION FOR ENERGY

Interested please contact Sunny Egho on 09072983255 or email sunnyegho@hgslnigeria.com.

HGSL Nigeria is a marketing partner of Elfad Concept for the Integrated Waste Treatment System.



EIGHT UNIT DUPLEXES AT IKATE, OPOSITE NIKE ART GALLERY

3. CONCLUSION

- 1) The implementation of this project will indeed exploit the residual energy and nutrient value of sewage and bio-municipal waste for use, while providing good sanitation and environmental performance for the facility's operations.
- 2) The project will provide nutrient water for landscaping and less critical applications.
- 3) Provide Biogas for cooking from a sustained source of daily raw material – Feces and 'controlled' kitchen waste.
- 4) The project will ensure that the facility meets the regulatory standards of the Environmental Protection Agency for wastewater discharge quality required under the environmental permit for the institution.
- 5) Super structure is not required to house IWTS as in the case of STP /Extended Aeration system.
- 6) No replacement of mechanic parts as IWTS is a completely Anaerobic Digester System.
- 7) ENERGY IS SAVED AS IWTS DOES NOT REQUIRE POWER TO OPERATE. ENERGY COST ASSOCIATED WITH OPERATING SEWAGE TREATMENT PLANT/AERATION SYSTEM IS REMOVED, THEREFORE TOTAL ENERGY CONSUMPTION COST IS REDUCED.
- 8) NO LAND IS LOST. CARS CAN PARK ON THE DIGESTERS.
- 9) NO MORE EVACUATION.

8. REFERENCE

BENEFIT OF INTERGRATED WASTEWATER TREATMENT (IWTS) - BIOGAS OPTION.

1. ELEVATION CHURCH, LEKKI-AJAH EXPRESS ROAD:

This type of sewage treatment system was introduced to my organization last year after the organization has spent several millions on sewage evacuation(5-7 trips evacuation weekly depend on the numbers of programs within the week). The biogas system was commissioned February 2018 at The Elevation Church.

The Elevation Church has really benefited from the system several ways, from providing permanent end to sewage evacuation **(Save almost 2.4M within last 8months)** to utilization of the final effluent water for landscaping purpose. Also the benefit of no maintenance cost has also been an added advantage.

Although we've not generated any gas due to the minimal amount of solid waste we produced because our major waste is mainly water but we have already plan to use biogas lamp for the gas that will be generated very soon.

I am recommending this new technology to all for because this is the best way to achieve cost saving with economic and environmental benefit.

Adesola Adegbite

Head of Facilities Management

The Elevation Church.

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2. PROTEA HOTELS – TAKORADI AND OWERRI SELECT (GHANA AND NIGERIA)

INTEGRATED WASTEWATER TREATMENT SYSTEM (IWTS) – BIOGAS OPTION

The Biogas System has been so beneficial to the hotel in a number of reasons; it has first of all **eliminated evacuation** since its operation about a year ago. It's given us return on investment for reusing the final water and the gas for non-critical application. It is a green technology that contributes to mitigation of gas emissions into the atmosphere thereby making the Hotel attain its foot print on green environment. I recommend this technology to all for economic benefits and to safe our environment.

ASIAN Joseph – Operational Supervisor

Protea Hotels

Capital Alliance Nigeria Limited

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3. NAIRABET HEAD OFFICE, IGBO EFON, LEKKI – AJAH, LAGOS

TESTIMONIAL OF EFFECTIVENESS ON INTEGRATED WASTEWATER TREATMENT SYSTEM (IWTS) – BIOGAS OPTION.

The Biogas System has being so beneficial to us in a number of ways;

- 1) It has eliminated evacuation since its operation over two years ago.
- 2) It has started given us return on investment as **we piped the gas to our kitchen.**
- 3) The technology has helped by making the sport bet arena Headquarters eco-friendly.
- 4 It has helped on the issue of water seepage which affected the former conventional septic tank we had constructed hereby increased frequency of evacuation

I recommend this technology to all, for economic benefits, and to saving our environment as it has been proven on our site.

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