



POWERING WASTE INTO PROFIT







WHO WE ARE

Green Lagoon Technology Sdn Bhd (GLT) is a Malaysian environmental solutions company that specializes in maximizing and turning waste into profit. The Company was established in May 2010 initially focusing on providing innovative and sustainable solutions for waste management, renewable energy, and environmental sustainability. In the early days, GLT saw the opportunity to participate in Clean Development Mechanism (CDM) projects for the palm oil mill industry, which formed the solid foundation for expanding into new green products and business models.

The Company's core focus today is on the design, construction, operation and management of biogas plants for various industries, including agriculture, palm oil and food processing. GLT has been able to generate substantial returns by converting the biogas which is a by-product of palm oil milling into multiple uses, including domestic consumption and sale of electricity to the national grid under the Feed-in-Tariff (FiT) program. Recently, GLT has started to explore the potential of upgrading biogas to bio-methane, which is more versatile and efficient and can be injected into gas pipelines or used in industrial applications.

By 2022, GLT had managed to be involved in over 60 projects nationally and internationally in various roles, including financing and owning more than 25MW of power assets, making GLT one of the top biogas developers in Malaysia. With the excellent track record in completing and managing various projects, GLT has earned substantial trust from its client and business partners, hence opening other business opportunities. GLT is looking to expand further into other services and products in the coming years as it aims to continue developing its brand in the national and international arena.



KEY ACCOMPLISHMENTS





MAY First FiAH secured under GLT Energy Sdn Bhd (2 x 1MW Biogas plants)

2015

FEB 2MW FiAH secured under **GLT** Renewable

2016

> **FEB** First EPCC

(Syarimo POM) MAR

GLT Eco Sdn Bhd

APR FiT-CD of first biogas power plant under GLT **Energy Sdn Bhd**

JUL First Greentech company in funds via equity crowdfunding

NOV 1MW FiAH secured under GLT Bio Sdn Bhd 2017

JUL FiT-CD of GLT Renewable Sdn Bhd 2MW biogas power

AUG

1MW FiAH

secured under

2MW biogas power plant GLT Climate Sdn

2018

DEC FiT-CD of GLT Eco Sdn Bhd

> Bhd (1.5MW) - GLT Agro Power Sdn Bhd (0.5MW)

> > **APR** First non-POME biogas (Landfill Leachate) project

> > > secured

MAY Relocation to a new office in Bukit Jalil

SEPT First centralised biogas power project and largest installed capacity (3.6MW) GLT BP Power Sdn Bhd

1.5MW FiAH secured under GLT Intan Power Sdn Bhd

OCT FiT-CD of GLT Bio Sdn Bhd 1MW biogas power plant



JAN First EPCC project in

First FiAH secured under SEDA E-bidding

OCT MyHljau Mark certification as green service - GLT Sustainable provider Sdn Bhd (1.5MW)

0.7MW FiAH secured under

NOV

2020

AUG

ISO 9001:2015

certification

FiT-CD of GLT Morib Power Sdn Bhd 1.5MW biogas power plant



MAY Second EPCC project in Sawit Makmur Jaya POM

JULY FiT-CD of GLT

Climate Sdn Bhd 1MW biogas power plant

DEC

First O&M services TNB Renewables Flemington and Hadapan biogas

FEB

crowdfunding campaign launched with over RM7 million

secured

APR

Acquisition of Advance Project Management Sdn Bhd 2MW biogas power plant

MAY

FiAH secured for GLT Kluang Gas Sdn Bhd (1MW) - GLT Maju Sdn Bhd - GLT Charuk Putting Sdn Bhd (3MW)

FiT-CD of GLT Agro Power Sdn Bhd 0.5MW biogas power

AUG

FiT-CD of GLT Sustainable Sdn Bhd 1.5MW biogas power plant

DEC

FiAH secured for - GLT Prosperity Sdn Bhd (1MW) - GLT Selaba Intan Sdn Bhd (1MW)

0.5MW FiAH secured for capacity increase each at **GLT Morib Power** Sdn Bhd and GLT Bhd

First livestock manure biogas project secured with Farm Fresh Berhad

REGIONAL PRESENCE

GLT has been involved in over 60 biogas-related projects in Malaysia and Indonesia. This impressive presence is a testament to the company's expertise and success in the renewable energy sector.

WEST MALAYSIA

PULAU PINANG 1. GLT Climate Sdn Bhd 6. GLT Sustainable Sdn Bhd 1MW Biogas Power Plant (Foong Lee POM) 1.5MW Biogas Power Plant (United Oil Palm Industries POM) 2. GLT Agro Power Sdn Bhd 1MW Biogas Power Plant (Topaz Emas POM) KEDAH 3 GLT Intan Power Sdn Bhd 7 GLT Eco Sdn Bhd 1.5MW Biogas Power Plant 2MW Biogas Power Plant (Seri Intan POM) (Setiakawan POM) 4. FutureAtlas Sdn Bhd 18. GLT Bio Sdn Bhd 2MW Biogas Power Plant 1MW Biogas Power Plant (Central POM) (Taclico POM) 5. Cenergi Pantai Remis Sdn Bhd 1.5MW Biogas Power Plant (Pantai Remis POM) 6. BAC Biogas (Kg. Gajah) Sdn Bhd 1.5MW Biogas Power Plant (PerakAgro POM) 7. Hock Soon Poultry Farm Sdn Bhd In-Ground Bio Reactor (Hock Soon Poultry Farm) 8. GLT Selaba Intan Sdn Bhd 1MW Biogas Power Plant (Selaba POM) 9. Tian Siang Oil Mill (Perak) Sdn Bhd 1MW Biogas Power Plant (Tian Siang (Perak) POM) 10. Sime Darby Plantations Bhd Operations & Maintenance (Flemington POM)

PAHANG

- 27. GLT Global Resources Sdn Bhd 1MW Biogas Power Plant (Sawira Makmur POM)
- 28. GLT Renewable Sdn Bhd 2MW Biogas Power Plant (Rompin POM)
- 29. GLT Lestari Sdn Bhd 0.7MW Biogas Power Plant (Merchong POM)
- 30. Lembing Power Sdn Bhd 1.5MW Biogas Power Plant (Sq. Lembing POM)
- 31. GLT Charuk Putting Sdn Bhd 3.12MW Biogas Power Plant (Charuk Puting POM)
- 32. GLT Kluang Gas Sdn Bhd 1.2MW Biogas Power Plant (Cenderawasih POM)
- 33. GLT Maju Sdn Bhd 12MW Biogas Power Plant (Tian Siang (Triang) POM)
- 34. GLT Endau Power Sdn Bhd 2MW Biogas Power Plant (Endau POM)

35. GLT Segar Sdn Bhd

In-Ground Bio Reactor (Farm Fresh Dairy)

- 36. Cenergi Cheekah Sdn Bhd 1MW Biogas Power Plant (Cheekah Kemayan POM)
- 37. Kilang Kosfarm Sdn Bhd In-Ground Bio Reactor (Kosfarm POM)
- 38. WZS Biogas Jerantut Sdn Bhd 1.5MW Biogas Power Plant
- In-Ground Bio Reactor (Bukit Sagu POM)
- 40. Cenergi Tanah Makmur Sdn Bhd 1.413MW Biogas Power Plant (Sri Jelutong POM)
- 41. Kema Development Sdn Bhd 0.5MW Biogas Power Plant (Kema Development POM)
- 42. Cenergi Palong Sdn Bhd (Havys POM)
- 43. Wujud Wawasan Sdn Bhd In-Ground Bio Reactor (Wujud Wawasan POM)

EAST MALAYSIA

SABAH

- 44.IOI Plantations Bhd 0.6MW Biogas Power Plant (Syarimo POM)
- 45. IOI Plantations Bhd 0.6MW Biogas Power Plant (Leepang POM)
- 46. IOI Plantations Bhd 0.6MW Biogas Power Plant (Mayvin POM)
- 47. IOI Plantations Bhd 0.6MW Biogas Power Plant (Morisem POM)
- 48. Taniung Paniang Palm Oil Mill Sdn Bhd
- 49. Kim Loong Power Sdn Bhd 2MW Grid Interconnection (Kim Loong Sabah POM)

(Tanjung Panjang POM)

- 50. Tamaco Plantation Sdn Bhd In-Ground Bio Reactor (Tamaco I POM)
- 51. Tamaco Plantation Sdn Bhd In-Ground Bio Reactor (Tamaco II POM)
- 52. Sook Oil Mill Sdn Bhd In-Ground Bio Reactor (Sook POM)
- 53. Desa Kim Loong Sdn Bhd 2MW Biogas Power Plant (Desa Kim Loong POM)
- 54. IOI Plantations Bhd 2MW Biogas Power Plant (Ladang Sabah POM)
- 55. PW Biotech Sdn Bhd In-Ground Bio Reactor (Sandakan Bay POM)



SELANGOR

PERAK

11. GLT Morib Power Sdn Bhd 2MW Biogas Power Plant

NEGERI SEMBILAN

- 12. GLT Prosperity Sdn Bdh 1MW Biogas Power Plant (Prosper POM)
- 13. Mawar Mentari Sdn Bhd In-Ground Bio Reactor (Mawar Mentari POM)
- 14. CyEn Resources Sdn Bhd In-Ground Bio Reactor (LandfillTanah Merah Cypark)

MELAKA

15. Sime Darby Plantations Bhd 1.5MW Biogas Power Plant (Kempas POM)

JOHOR

- 19. GLT BP Power Sdn Bhd 3.6MW Biogas Power Plant (Bukit Pasir POM + Pagoh POM)
- 20. KS Green Energy Sdn Bhd 3MW Biogas Power Plant (Muar POM)
- 21. Kim Loong Power Sdn Bhd 2MW Biogas Power Plant (Kim Loong POM)
- 22. IOI Plantations Bhd In-Ground Bio Reactor (Pamol Kluang POM)
- 23. Sime Darby Plantations Bhd Operations & Maintenance (Hadapan POM)

- 24. Kluang Oil Palm Processing Sdn Bho In-Ground Bio Reactor (Kluang POM)
- 25. Mahamurni Plantations Sdn Bhd In-Ground Bio Reactor (Palong Cocoa POM)
- 26. Sungei Kahang Power Sdn Bhd 2MW Biogas Power Plant (Sungai Kahang POM)

Consultancy

O&M

GLT Climate 1MW Biogas Power Plant

EPCC

Owned FiT

56%

24⁹

• 17 owned FiT sites

- · 26.5 MW export capacity
- · 8 under development
- 9 operational sales
- · 215,891 MWh exported (as at Dec 2022)

SARAWAK

- 56. Mukah Kilang Kelapa Sawit Sdn Bhd In-Ground Bio Reactor (Mukah POM)
- 57 Bijat Palm Oil Mill Sdn Bhd Tank Bio Reactor (Biiat POM)
- 58. **Rinwood Pelita (Mukah) Plantation Sdn Bhd** In-Ground Biogas Storage System (Rinwood Pelita POM)
- 59. Sime Darby Plantations Bhd In-Ground Bio Reactor (Lavang POM)

INDONESIA

60.PT Bina Mitra Makmur 2MW Biogas Power Plant (Bina Mitra Makmur POM)

SUMATRA

- 61. PT Evans Lestari In-Ground Bio Reactor + Co-firing
- 62. PT Asia Sawit Makmur Java 1.2MW Biogas Power Plant (Asia Sawit Makmur POM)

KALIMANTAN

- 63. PT Teguh Sempurna 1.4MW Biogas Power Plant (Pemantang POM)
- 64. PT Laguna Mandiri 1.4MW Biogas Power Plant (Rantau POM)
- 65. PT Kodeco Agrojaya Mandiri

ONE-STOP

ENVIRONMENTAL SERVICES SOLUTIONS CENTRE

GLT recognises the potential of transforming waste into profitable resources and sees environmental liabilities as a means for developing new products and services. GLT is committed to seeking the most efficient and comprehensive solutions for utilizing all manners of wastes, not only from the palm oil milling industries, but also from other sources.

As a One-Stop Environmental Services Solution Centre, GLT provides a range of sustainable solutions such as utilization of bio-methane from wastewater for energy, extraction of bio-CO₂ for industrial applications, bio-conversion of organic waste into bio-fertilizers and insect protein, transformation of biomass into reusable materials, and much more, with the purpose of generating quantifiable income stream and at the same time reducing the carbon footprint of our clients.



consumption



END-TO-END CONSULTANCY SERVICES

- Site assessment and feasibility study
- Determine the best solution for biogas utilization
- Regulatory application (SEDA quota, TNB REPPA, Suruhanjaya Licences, MIDA, Greentech, etc)

PROJECT SUPERVISION & MANAGEMENT

- Management of pre-construction,
- construction period and post-construction
- Manpower, materials and machinery management
- Health and safety
- Cost control and project cashflow management
- Testing and commissioning

OPERATIONS & MAINTENANCE

- Day-to-day operations and monitoring
- Manpower, spare parts and consumables management
- Regular scheduled service and maintenance

PROJECT INVESTMENT

- Providing financing on BOOT basis
- Long term recurring income from FIT or sale of biogas

DESIGN AND ENGINEERING

- Optimum design taking into consideration soil condition, groundwater table, land availability, topography, etc.
- Value engineering to reduce CAPEX and OPEX
- Long-term considerations for durability and cost-efficiency

GOING

BEYOND GREEN





The United Nations' Sustainable Development Goals are crucial in promoting global cooperation and action toward creating a sustainable future for all, tackling issues such as poverty, climate change, and inequality. GLT is dedicated to aligning its business practices with goals, thereby creating a positive impact on society and the environment.

GLT is committed to sustainability in all aspects of its business operations including governance of its supply chain, value design engineering and construction methodology. The company believes that sustainability is the key to creating a better future for all, and its solutions are designed to provide a sustainable approach to waste management and renewable energy.





Odours and the spread of diseases are reduced through the treatment and recycling of organic wastes.



Waste impact on water bodies is minimized through reduction of organic loading rate



fuel-based sources is reduced by replacing with biogas.



Job opportunities and economic growth for development made possible from biogas projects at rural areas.



Energy from selfgenerated wastes can be used to improve self-sufficiency and sustainability of industries



Wastes generated from operation sites are reduced or recycled for other use



Greenhouse gas emissions are reduced through capture and utilization of biogas into renewable energy.



Recirculation of nutrients and organic matter back into soil in the form of digestate biofertilizer.





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