BioGTS®

BIOREFINERY

Value from organic waste

BioGTS Ltd. has developed a new biorefinery concept for cost-efficient treatment of organic waste and its conversion into renewable energy, vehicle biofuels, chemicals and fertilizers. The concept is based on the integration of innovations in biodiesel and biogas technologies. The BioGTS® Biorefinery is based on a modular design which is cost-efficient and easily scalable. Hence, the new biorefinery concept is well suited for distributed energy production.

The competitive advantages of the BioGTS® Biorefinery, based on the BioGTS® Biogas and Biodiesel technologies, include the low investment and operating costs, compact reactor structure, high process efficiency, flexibility of the process towards the quality of the feedstocks, scalability, and plug-in installation.

Another major advantage is that the BioGTS® production process does not consume any clean water in the process, whereas the conventional biodiesel technologies consume a lot of water, typically 3-4 m^3 per m^3 biodiesel produced. Both the BioGTS® Biogas and Biodiesel technologies are based on fully automated continuous processes.

- Wide raw material base: Biodegradable waste from municipalities, industries and agriculture; biobased waste oils and greases from food industry, restaurants and municipalities
- Outputs: Biodiesel, biogas, biomethane, vehicle biofuels, electricity, heat/cool, glycerol, fertilizer/soil improvement medium

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BioGTS® Biogas Process*

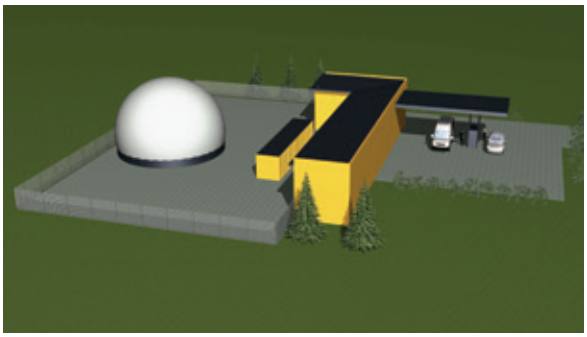
- Anaerobic digestion process based on plug-flow operation in horizontal container reactors
- Flexible process, which can be operated either as wet or dry anaerobic digestion process depending on the quality of the available feedstocks
- Wide raw material base
- High energy yield per reactor volume especially when operated as dry process

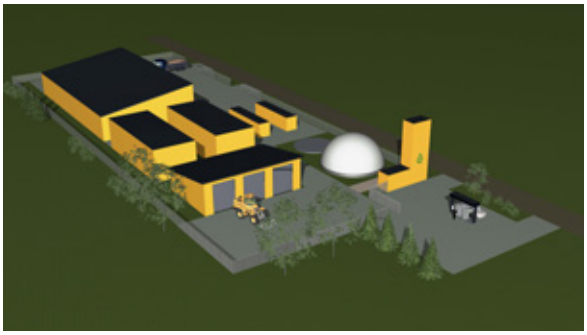
BioGTS® Biodiesel Process*

- Cost-efficient reactor structures, low production costs - Production cost of biodiesel is much lower than price of fossil diesel
- Short investment payback period, typically 1-3 years
- High capacity, easy to scale - Daily production 2,000-50,000 L biodiesel
- Based on a new biodiesel production method which has zero water consumption - Biodiesel production through the traditional esterification technology consumes 3-4 m^3 of clean water per m^3 biodiesel produced
- Wide raw material base – Possibility to use also waste oils and greases mixed with water

Reactor design of the BioGTS® Biorefinery is based on compact and cost-efficient container reactors, which are built from prefabricated modules. This kind of reactors require only a small surface area, enable quick "plug-in"-installation and start-up, and are easy to scale up. The processes are continuously operated and fully automated.

*International patent pending





BioGTS® Biorefinery – Synergy from parallel processes

- Closed cycle; possibility to utilize the residues in parallel processes
- 100% utilization of excess heat
- Treatment of oily waste in the biodiesel process improves the manageability of the biogas process
- High process efficiency
- Possibility to optimize the plant income from different end products
- Short investment payback period

Let us help turn your waste into valuable resources

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