

Eco

Solution

Consult Ltd.



Waste Management

Proposal

Decentralized Waste Management, the Basis of our Philosophy

- Our concept is future oriented. Due the traffic is increasing year by year it is nearly impossible and useless to transport waste over long Distances. As less, as better.
- To use existing places and bring those to a most effective level of Waste treatment is our Goal. The conditions are from place to place different, we analyze the needs for the different places and decide the kind of Waste treatment for each Place, using the following Tools mainly:



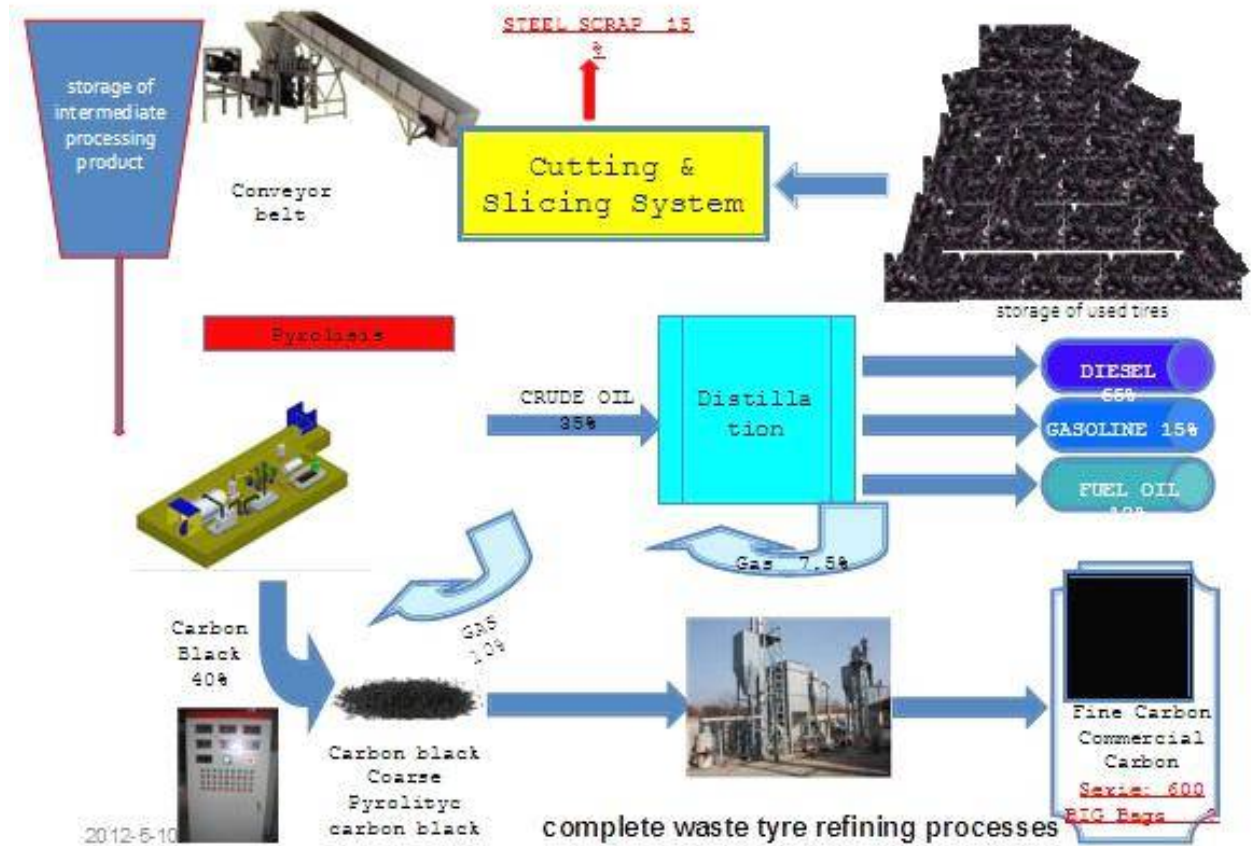
Tools

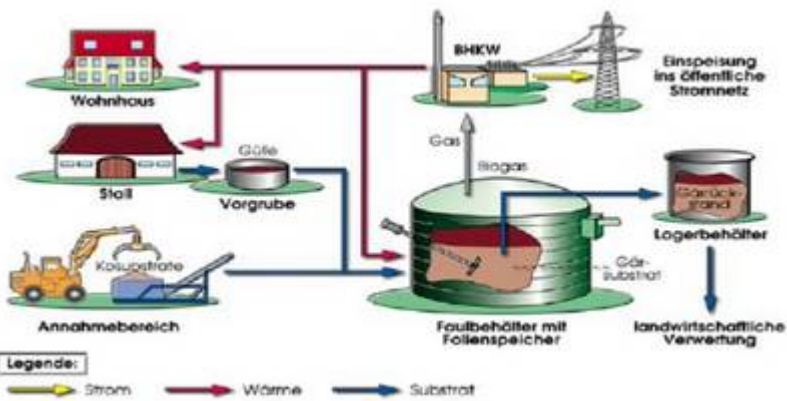
1 Gasification

Small scale Gasifier for Sewage sludge and any kind of Biomass. 100 kW electrical Power to support either the Plant with electricity, or to sell the Power to the grid. Heat (about 180 kW) can be converted for cooling purpose.

Gasifier, CHP and Silo in one 40 ft Container

2 Tire and Plastics to Oil





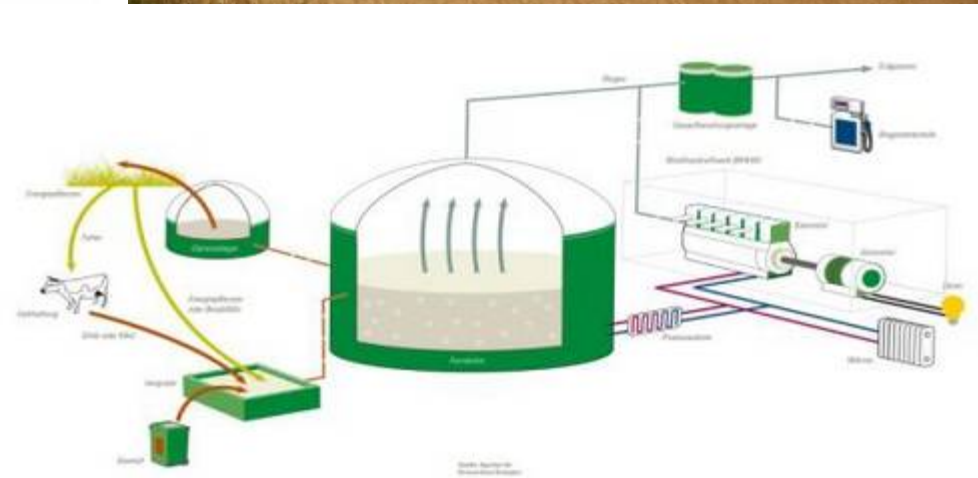
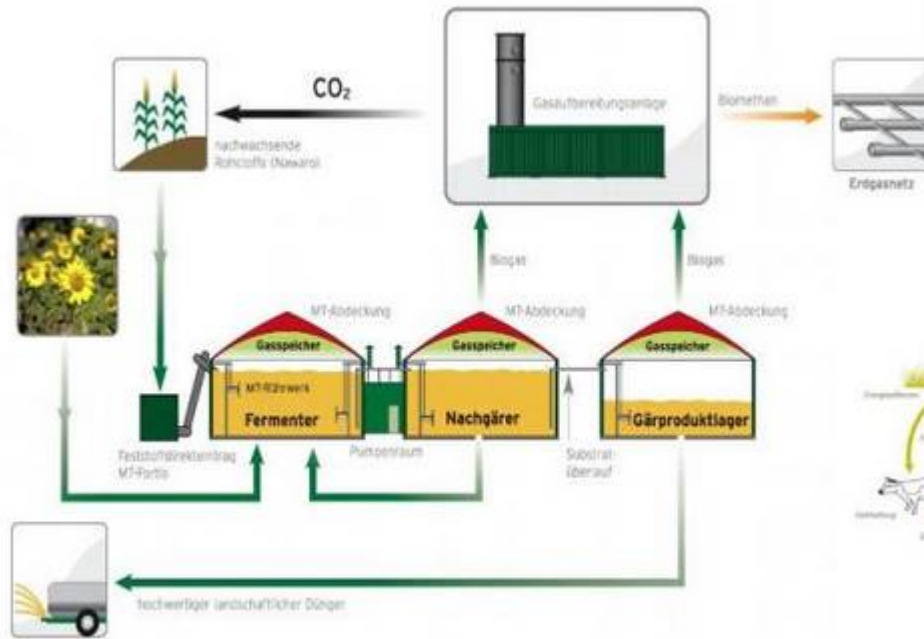
3 Biogas Production

- Size depending on the input material as well as the future calculations
- Economic
- Environmentally friendly
- Electric Power to the grid or other use
- Heat for cooling

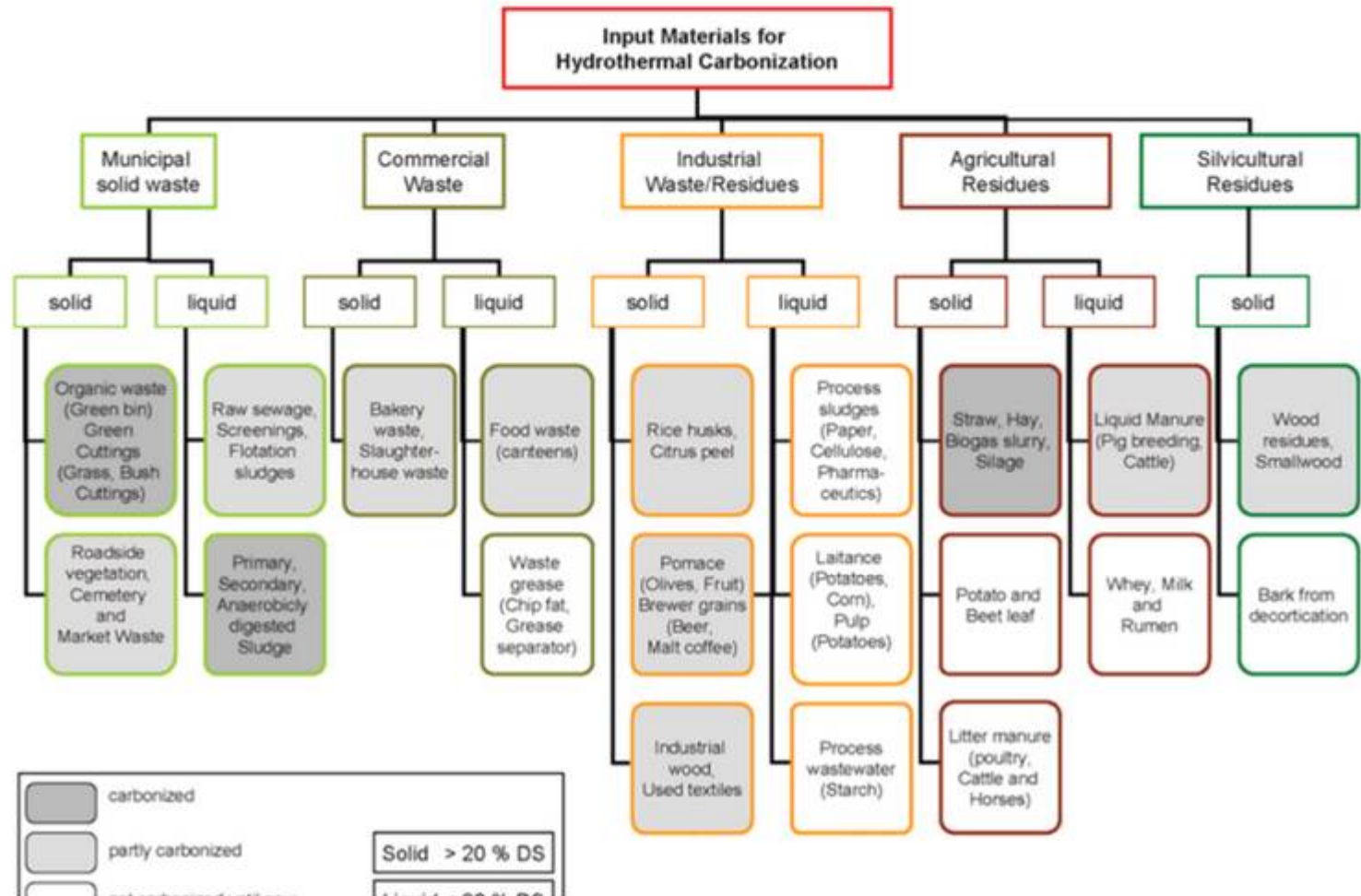


Biogas Production

- **Biogas** typically refers to a mixture of different [gases](#) produced by the breakdown of [organic matter](#) in the absence of oxygen. Biogas can be produced from raw materials such as agricultural waste, [manure](#), [municipal waste](#), [plant material](#), [sewage](#), [green waste](#) or [food waste](#). Biogas is a [renewable energy source](#).
- Biogas can be produced by [anaerobic digestion](#) with [methanogen](#) or [anaerobic organisms](#), which digest material inside a closed system, or [fermentation](#) of biodegradable materials.^[1]
- Biogas is primarily [methane](#) (CH₄) and [carbon dioxide](#) (CO₂) and may have small amounts of [hydrogen sulfide](#) (H₂S), moisture and [siloxanes](#). The gases [methane](#), [hydrogen](#), and [carbon monoxide](#) (CO) can be combusted or oxidized with oxygen. This energy release allows biogas to be used as a fuel; it can be used for any heating purpose, such as cooking. It can also be used in a gas engine to convert the energy in the gas into electricity and heat.^[2]
- Biogas can be compressed, the same way as [natural gas](#) is compressed to [CNG](#), and used to power [motor vehicles](#). In the [United Kingdom](#), for example, biogas is estimated to have the potential to replace around 17% of vehicle fuel.^[3] It qualifies for renewable [energy subsidies](#) in some parts of the world. Biogas can be cleaned and upgraded to natural gas standards, when it becomes bio-methane. Biogas is considered to be a renewable resource because its production-and-use cycle is continuous, and it generates no net carbon dioxide. Organic material grows, is converted and used and then regrows in a continually repeating cycle. From a carbon perspective, as much carbon dioxide is absorbed from the atmosphere in the growth of the primary bio-resource as is released, when the material is ultimately converted to energy.



4 HTC Hydrothermal Carbonisation



HTC

- **Hydrothermal carbonization** (HTC) (also referred to as "aqueous carbonization at elevated temperature and pressure") is a [chemical process](#) for the conversion of organic compounds to structured carbons. It can be used to make a wide variety of nanostructured carbons, simple production of [brown coal](#) substitute, [synthesis gas](#), liquid petroleum precursors and [humus](#) from [biomass](#) with release of energy. The process, which technically imitates the brown coal formation ("[coalification](#)" (in German)) taking place in nature within 50,000 to 50 million years within a few hours, was investigated by [Friedrich Bergius](#) and first described in 1913

TERRASYSTEM®

Compost

Fertile soil - Black gold



Our vision

From waste to fertile soil
From the desert to the fertile acreage



Compost is much more than Waste !

What to Compost

- Food Scraps
- Food-related Paper Products
 - *Paper towels, napkins, plates & paper cups*
- Waxed cardboard, milk and juice cartons
- Compostable Plastics (*only with green label*)
- Paper towels



Organic waste
valuable raw material for fertile soil
„Black gold“



A variety of ingredients — brown and green — are needed in the pile.

- Include
- Leaves
- Grass clippings
- Brush trimmings
- Manure (preferably organic)
- Any non-animal food scraps: fruits, vegetables, peelings, bread, cereal, coffee grounds and filters, tea leaves and tea bags (preferably minus the staples)
- Old wine
- Pet bedding from herbivores ONLY — rabbits, hamsters, etc.
- Dry cat or dog food
- Dust from sweeping and vacuuming
- Dryer lint
- Old herbs and spices

It is a treasure !

Compostable material is ground into small pieces and formed into piles.

The piles are covered with a breathable fabric that accelerates the natural cycle of decomposition with higher temperatures.



In 75 days food scraps and paper products are transformed into a nutrient rich soil amendment = "Black Gold"!



The finished product "Black gold" is used by fields and in organic farming applications to grow more food and trees.



Using compost means pesticides aren't required, soil fertility is increased, water is conserved, and soil erosion is mitigated.

