



Step-series diesel production plant is made by our Swedish colleagues at Swestep. We cooperate about sales in several areas of world. This is a very unique technology that converts biomass, MSW waste, rubber and plastics and oil waste to high quality standard diesel to be used in cars. The technology is based on **Catalytic Pressure less Depolymerisation (CPD)** well protected by a number of patents. This is a catalytic system that operates at medium temperatures and here breaks up molecules and converts to a standard approved diesel in some process steps. Technology is unique and no one else offers this solution.

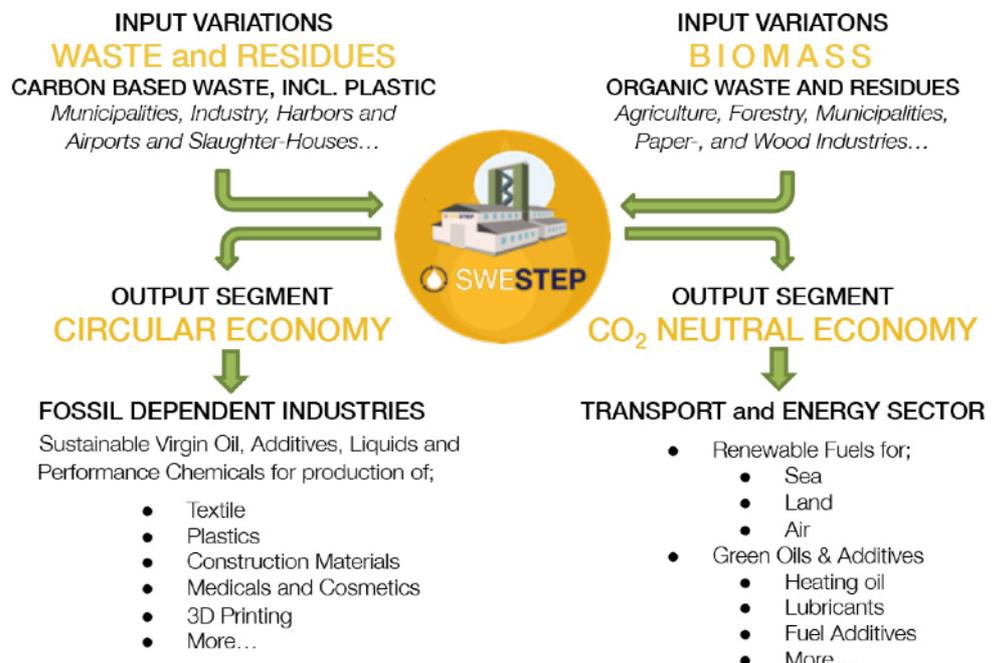
Environmentally correct and efficient.

CPD is unique, green and efficient in several ways. CO2 footprint is far better and when we have a low temperature combustion we have zero emissions of dangerous gases like dioxin etc. This is a large problem when MSW is used. As we also can make diesel directly from biomass, this opens up local production in countries that import diesel and they also get a CO2 neutral fuel in a simple way.

The factory is based on modules and can have large variations in output depending on demands. All from small systems to very large systems covering most applications. Range covers from 100 liter diesel / hour to 25000 liter / hour. We also make our own power.

Useable valuable materials

- * MSW city dump waste in a mix
- * Biomass like wood, grass, oil palm waste and whatever can grow anywhere
- * Oil sludge and polluted oil from
- * Medical remaining and medicine Etc etc. Flexibility is very large.





THE PRODUCTS



RENEWABLE FUELS

Variations of transport fuel for transportation on land, air and sea; Renewable fuels, lubricants, oil and additives for industry and heating oil for homes, offices and more.



SUSTAINABLE LIQUIDS

Variations of sustainable and circular liquids and oils to refine and develop to new polymers, fibers or other products for the fossil dependent industry.



PERFORMANCE CHEMICALS

Variations of new green performance chemicals for the petrochemical industry to refine into circular end products, materials and liquids.

Process of the factory.

Sorting and preparation of fuel to be processed. Here we have a standard system like a RDF process industry.

If we have city dump waste we may have 3 mills to get a mm-s sized fraction. Here we also have a sorting machine to remove undesired objects and a manual pick up at entrance. Car engines and ammunition, stones and metals etc. is not good for fuel and is sorted out.



The processed mix shall contain max 15% moisture content and if needed we have a drier system to see this get correct. Heat for the driers comes from heat out of the diesel generator we use and its waste hot water or we use RDF or diesel as fuel depending on site and what is best. All systems have a diesel gen set and we make all power ourselves independent of any grid. Rotational driers are easy to use and maintain and can work of solids and diesel fuel.



If we use RDF with a high plastic content we get more diesel fuel and if we have biomass only less. Still this is a perfect solution for many development countries that import costly fuel and have biomass available. Here they also get a CO2 neutral solution. There are often buyers for the hot water.



Catalytic Pressure less De-polymerisation (CPD)

This must not be compared to pyrolyse in any way as the process is totally different and 100% Unique. Here we get high quality diesel fuel that follow demands by all car producers in a reliable system with no high temperatures and strange emissions through the chimney.

Practical example

Typical example for city dump waste mix (MSW waste) and 200 ton / waste / day from a medium size city dump.

When cleaned and dried we have about 130 ton milled and dry substrate to process. The system is so fast that 6 minutes after start up the clean diesel comes out of the system in a stream. Catalytic operation use low temperatures so this helps a lot in efficiency and no emission operation.

130 ton dry substrate will give about 48 tons of diesel / 24 hour and system operates all time with about 7500 hours / year. This is unbelievable 17520 tons high quality diesel / year. 1 ton diesel is about 1200 liters as a comment.

Normally diesel is much over USD 1 / Liter in the gas station Investment is for sure substantial as technology is advanced but pay off for investment is often in the range of 2-3 years only.

Not many solutions have so ROI time and no-one else make diesel in this way from a problem like city dumps.

Sunnytek Sweden Glimmervägen 8 187 34 Täby, Sweden

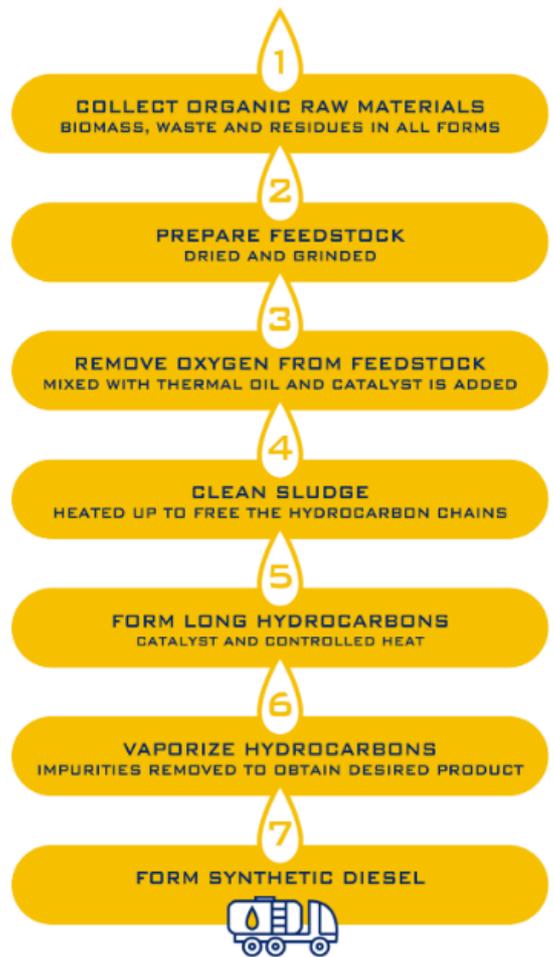
Web sites www.sunnytek.se

www.sunnytek.nu

E-Mail

sales@sunnytek.se

All Registered companies



Palm oil remaining is an excellent substrates to make diesel fuel. Wood chips and grass are also OK.

