



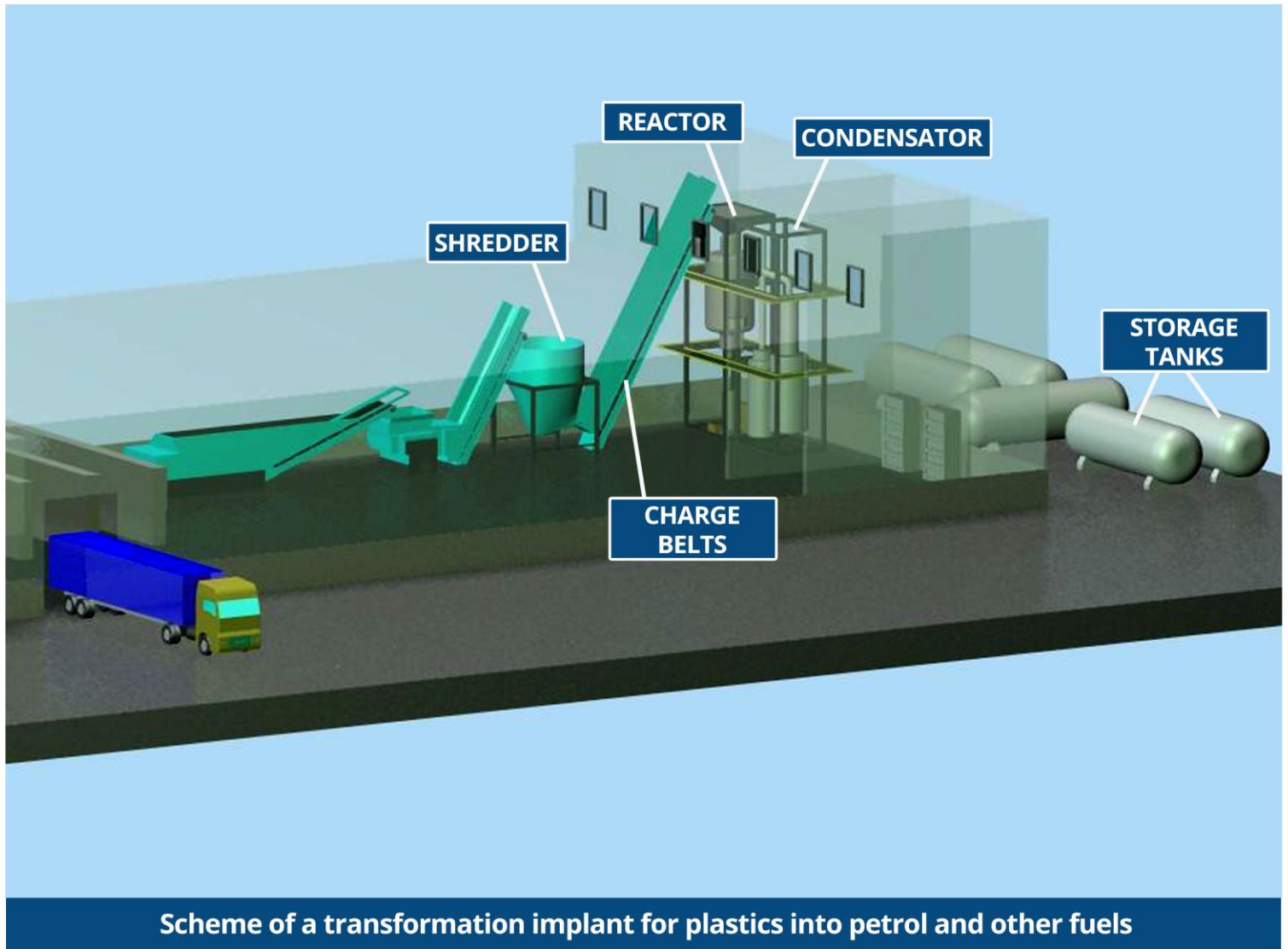
SUSTECH
Sustainable Technologies of America

P2P System

Transformation of plastics into petrol
and other fuels



TRANSFORMATION IMPLANT





POLYCRACK

SYSTEM DESCRIPTION

- Plastic materials are transformed into petrol and other high quality fuels.
- A transformation unit is made up of 2 columns – the reactor and the condensator– together with a refining implant and suitable storage tanks.
- AA transformation unit can treat 5, 7, 5, 25, 100 or 150 tons of plastic materials daily, depending on the model's capacities, producing abt.1.100 lt of fuel for every ton treated.
- The fuels produced have got a steady quality, independently from the kind of plastics introduced and/or from their degree of pollution.
- The transformation wastes are recovered under the form of coke, which is appropriately cleaned from all possible polluting agent, in order to be used for energy production or as raw material.
- A complete system is extremely profitable (minimum functioning costs, complete energetic autonomy) and payable – off in less than 3 years.
- Emissions are far inferior in comparison to the limit imposed by the current European legislations.
- Thanks to this system also many other types of wastes can be processed, as listed ahead.





Plastic materials (producing different hydrocarbons):

- Plastics of all kind (PP, PET, PE, HDPE, LDPE, PVC,...)
- Plastics coming from Segregation Job.
- Plastics coming from electronic wastes.
- Plastics coming from medical wastes.
- Car-Fluff (Plastics coming from cars demolition)

Organic materials (producing different gases and / or ethanol):

- Organic and vegetal wastes (wood, bunches, marc oil, straw, etc.)
- SOF Stable Organic Fraction
- Dry animal dejections
- «Pulp» (paper production wastes)
- Muds from depuration stations (after flocculation)

Other (producing other fuels and different quantities of coke):

- Tires
- Tar and bitumen
- Exhausted motor oils
- Exhausted vegetal oils
- Animal fats and carcasses
- Some muds coming from refineries and reclaims



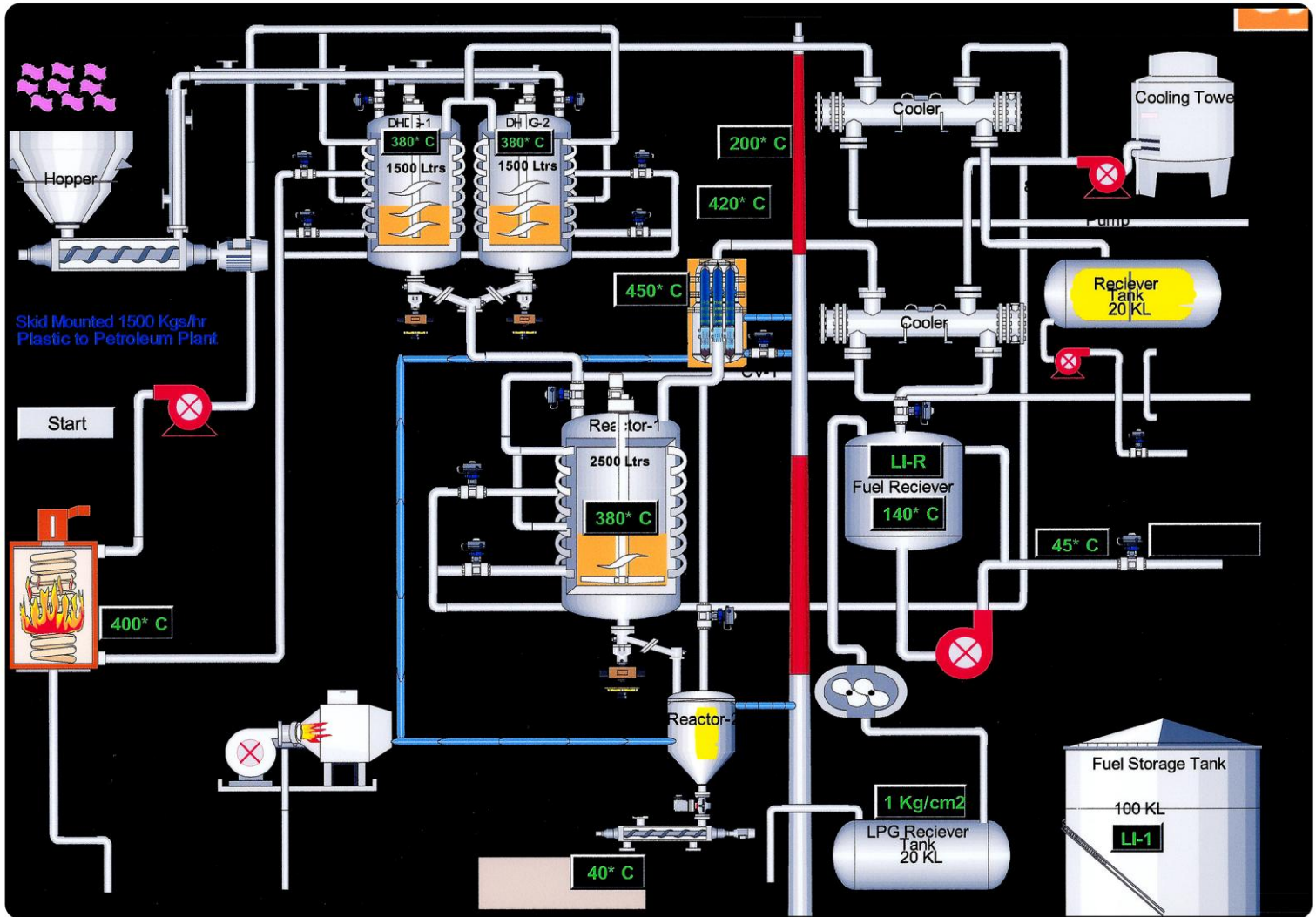
Detailed Procedure

- The wastes, properly shredded, are introduced in steady stream into the reactor full with nitrogen (flame-retardant gas).
- The reactor's temperature is automatically set on, varying between 160°C of pre-heating to 600°C, depending on the different materials treated.
- The gas produced react with the catalyst, which transforms the polymers into monomers through poly-cracking, producing some light gases.
- The light gases are then condensed in a mix of different liquid fuels (diesel oil, petrol, paraffin, heavy oils) which are then refined in order to be parted into the right tanks.
- Non condensable gases are filtered before be in re-used to feed the machinery.
- The residuals produced from the reactor under form of coke are recovered in view of their further use for energy production or as raw material.
- The installation of refining systems can be considered (if for instance You decide to transform all into energy).
- The several sensors inside of the system allow for a real time control and regulation of the processes, with minimum human intervention
- A complete installation requires a surface of abt. 2000m². and the presences of 2 workers for each 8h turn.
- Due to the system's modular conception, it is possible to review its characteristics to in prove them and better respond to an increasing demand.





TECHNICAL OVERVIEW



Por un planeta saludable / For a healthier planet.



Use of the fuels and the Coke

- The fuels produced are better in quality compared to their market equivalents (high heat power, very little presence of sulphur, etc.)
- The fuels produced from plastic materials have got an absolutely steady quality (guaranteed from contract) independently from the input quality: only quantity can change!
- The liquid/ gaseous fuels produced can be used in side of a generator to produce electricity and thermal energy. If they are used as fuels, instead, in some Countries there is a special excise tax, which is not due if the use is limited to the machinery owner's needs.
- The transformation wastes under form of coke are mainly made up of coal (when coming from plastics, the coke Kcal/Kg value is equal to 6.078).
- The coke can be re-used as air filter, as anti-radioactive shield, for production of tires not for high speed. After the needed chemical analyses assuring the absence of polluting agents, it can also be used as fertilizer and/or made compact in briquette and used as industrial fuel...at the end that can be used as charcoal or other uses, if duly shredded, you may to add to the diesel before to use it into the power generator!
- The P2P System has been recognized as one of the 7 best inventions for the year 2006 - 2007 from the Indian Commerce Chambers Federation (FICCI) and the IC² Institute of University of Texas, in Austin, though the {Indian Programme for Development and Innovation} of the aeronautic constructions society Lockheed Martin





SYNTHESIS DIAGRAM

