lar cells the theme, efficiency becomes really unimportant because the consumed solar energy comes at no cost and finally it will require no energy carrier. Yes still more. Also the cells themselves as stressed by Mr Luther, the life so to say will be endlessly long and in all cases the corrosion risky electrical terminals are to be renovated once in a decade... Often it is directed in Field by atomfans against solar energy, that the problem of storage is not solved. Here on the other hand emphasizes Mr Luther the stronger we possibly Joint Eurasian Power Network build, the lesser the storage is necessary. Because the net itself works as storage, it can certainly quickly in a second's time bring together excess production here with actual requirement.

The globally available free solar energy in order to use is intelligently instead of scant oil and gas to fire/ignite can rather mean paradoxically, man cools the building simply with the help of the sun. Therefore, the systems for the objective become presentable in a complete series of various techniques. So indicates Dr Edmund Stases of the firm CINergy. All these then have the complete special advantages that always when one urgently needs specially cold, then the sun specially straight also shines strongly, so is Stressed is happy that our systems already is used in hot Australia in order to cover up the extreme requirement of cold. With that the energy supplier saves costly investment for load power work.

Source : VDI Nachrichten, 9 Dezember 2005, Nr 49.

Bio diesel from Biomass

Anil Kumar Ghosh

Biomass is probably as worthy as gold. Diesel (liquid fuel) can be produced from it. The scientists estimate that Biomass in Germany already suffices to produce around 30 million tons diesel per annum. That would be approximately more than domestic turnover of liquid fuel of 2004. A production method as of Choren can also synthesize domestic and industrial garbage, Germany may rather produce much over its requirement and promote export of diesel liquid oil.

It is said that fossil fuel is black gold. It is the best primary energy carrier, most important raw material and offers energy in concentrated form. From raw oil, fuel is prepared the production cost of which namely the price before duty per litre is comparatively very low. Liquid fuel from biomass has many hurdles to cross in order to be able to compete with the mineral oil. One hurdle is component of the biomass : the mass along with its filler for the production of biogenic fuel is huge and voluminous.

Choren Industries in Germany want to commission the first big technical plant for the manufacture of synthetic BTL (Biomass to Liquid) fuel 'Sun Diesel' from biomass in the 2006. The capacity of this diesel fuel according to Choren method will be to the tune of 15000 tons per annum. For this 65000 tons dry biomass is required which consists of scraps which will weigh more than 220 kg/m^3 depending on the nature of wood. Therefore, about 260000 m^3 wood shavings from chopper with almost 8000 twenty footed container (volume approximately 33m^3 per container) will roll in the workshop. The first big technical plant the construction of which is planned beyond 2007 in Lubniz near Greifswalf in

Germany for a diesel production capacity of 200000 tons per annum. For that nearly 860000 tons of dry biomass are necessary which will be covered up by the workshop from the hinterland, side by side with wood scraps from factory first of all straw should be employed. In Germany yearly 40 million tons of which are available as stated by Choren. But also pellets or briquettes from plant corn's miscanthus, green plants, dried trump slices sharing or other wastes out of foodstuff production down to treatment sludge will be available. The Choren method is absolutely insusceptible against various filler materials so says the developer of the method, Dr Ing Bed Holf, the quality of the synthetic gases therefore does not change. By means of which diesel fuel is produced always of higher quality.

According to Prof Dr Konrad Scheffer of the University Kassel, with the total freely available biomass in Germany about 30 million tons diesel liquid fuel could be manufactured annually. That would have been more than the diesel turnover of 2004 that as per the fossil fuel association, an amounts to 28.9 million tons. In the estimation of diesel production of 30 million tons annually the targeted development of energy plants is still not considered as also the synthesizable domestic and industrial wastes. The facts alone cover up clearly the chances of biogenic liquid fuel production. In Germany, not only the total requirement for diesel including that for the air traffic is produced in own country but also sizeable quantity could rather be exported.

In that case large quantities of substitute materials are activated. To that there are a series of proposals to prepare first of all the biomass in decentralized way. So the green plants are broken down into a fluid and solid phase. The fluidity was used in site for biogas production or for gaining electric energy and the solid part went into the synthetic plants. The main part of biomass however, first of all, finally predried reaches the synthetic plant. It can with a residual humidity of about 20% in low temperature carburettor in gas and coke broken down; both are then used for the synthetic gas production. The experiences with the plants in Freiberg and Lubmin may show, which improvement potential the Choren method possesses.

On the control of biomass production and its transport, it gives already the concrete wide developed planning with which some universities are associated side by side with Mr Wolf, founder of Choren, these planning are supported by Dr Wolfgang Steiger of research concern V W (Volks Wagen) and Dr Wolfgang Warnecke, Manager of world famous liquid fuel development with shell. Because of this long time preparation Steiger and Warnecke received the award of this year. The distinction is valid also for the scientists and engineers, who worked together with them for years in order to make way out of the fossil fuel dependence for a safe foundation. One should not forget the researchers of Daimler Chrysler, who performed the important preparation along with their colleagues at V W (Volks Wagen).

Until however, Sun diesel in sufficient quantities at the petrol pumps could be unavailable still a few tricks are to be adopted. That the development of plants for synthesis requires big investment and long time is executable later on. According to present estimate Sun diesel would ex-factory cost between 0.60 Euro per litre and 0.70 Euro per litre. So long the biomass in Germany is very scanty.

The EU countries can add to that also the treatment sludge and loaded wood. But also the domestic sewage counts up to 65% out of biomass, paper and paste are manufactured from wood and should likewise belong to the biomass. Out of these materials in the Choren method diesel fuel is manufactured. But material mixtures themselves from synthetic wastes on special sewage (lac sludge) including the organic chemicals can be synthesized diesel liquid fuel or other basic materials. Instead, the burning of the waste is transformed as useful materials in diesel fuel production in modern time.

Source : VDI Nachrichten, 16 December 2005, Nr. 50