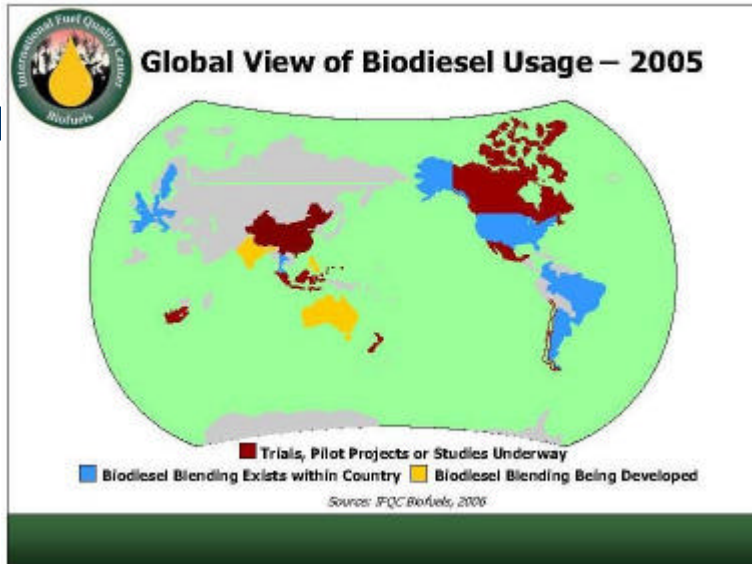


Bio Diesel As Alternative & Indigenous Source Of Energy For Every Village

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Reasons Behind The Enthusiasm For Biodiesel Fuel

- Reduction in dependence on Imported Oil.
A major issue for our country.
- Environment friendly alternative to Petrodiesel.
- Reduction in Greenhouse Gas Emissions such as: Carbon Di Oxide(CO₂), Carbon Mono Oxide (CO), Particulate Matter (PM) and Hydrocarbon (HC) Emissions. A major issue for the countries of Europe.

- ✍ Usable in existing diesel engines.
- ✍ Compatible with existing fuel distribution infrastructure.
- ✍ Stimulates agricultural markets and Reduce poverty in rural areas by providing jobs. Brazil implemented a national biodiesel program to develop the agricultural sector and provided jobs for millions of landless poor.

We should also do the same.


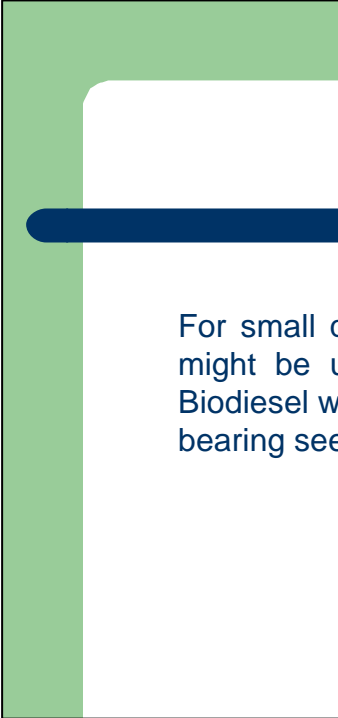
✍ In Other Words,

**WE NEED TO PRODUCE & USE BIODIESEL
IN PAKISTAN.**

B. What Is Biodiesel?

✍ Biodiesel is a clean-burning diesel replacement fuel that can be used in compression-ignition (CI) engines, and which is manufactured from the following renewable, non-petroleum-based sources through a simple chemical process.

- Vegetable oils such as castor, mustard, canola, rapeseed, palm and jatropha oils;
- Animal fats such as poultry offal, tallow, and fish oils; and
- Used cooking oils and trap grease from restaurants.



For small quantities Animal or Used cooking oil might be useful but for the large quantities of Biodiesel which we require, getting oil from any oil bearing seed is the only viable solution.



Biodiesel is produced in pure form (100% biodiesel or B100).

It is Blended with Petrodiesel in

- ✍ USA - between 2% (B2) to 20% (B20)
- ✍ Other parts of the world & in Europe – Upto 100% (B100)

IN PAKISTAN

- ✍ B20 for vehicles and B100 for stationary engines.

C. JATROPHA FOR OIL

- ✍ Considering the climate, soil condition and quality of oil required for manufacture of Biodiesel, Jatropha is being considered as ideal for Pakistan.

Some of the Features are as Follows.

- The soil required is sandy and it can withstand salinity and very poor soils.
- It can withstand severe heat.
- It handles lack of irrigation very well and it is possible to live almost entirely of humidity in the air. In our case, humidity in air is abundantly available in south of Sindh.

✍ Tolerates intercropping.

✍ Has a life of around 30 years. Just grow it once and continue harvesting every year with minimal maintenance.


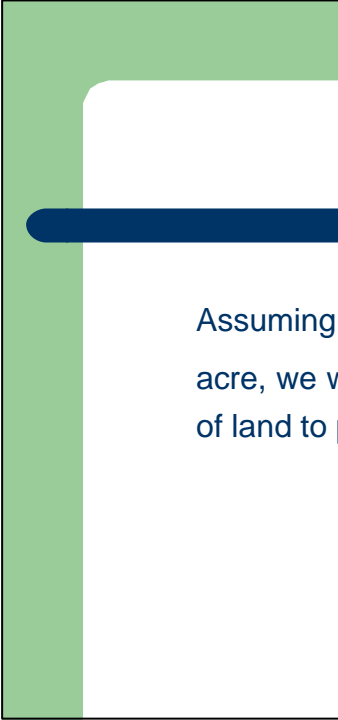
- ✍ Crop yield per year per acre.
 - i) 1st year – 1 Ton
 - ii) 2nd year – 2.5 to 3 Tons
 - iii) 3rd year – 4.5 to 5 Tons
- ✍ The oil has a low viscosity which is desirable for usage as Biodiesel.

In other words our soil in Sindh would suit us nicely.

D. Required Cultivation

According to a rough estimate, if we mix only 20% Biodiesel with petrodiesel,

Only one petrol pump would require almost one million litres of **Biodiesel** per year. To produce this quantity we would need **3,500** Tons of **Jatropha** Seeds.

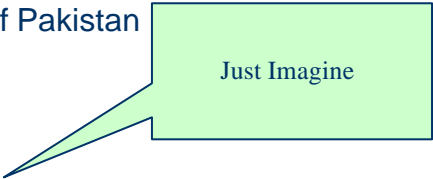


Assuming maximum yield, which is 5 Tons per acre, we would need to cultivate **700 acres** of land to produce the required amount of seeds.



This is just to feed one single pump.

Now Considering Whole of Pakistan



Just Imagine

- ✍ the Quantities we are going to need
- ✍ the Number of Jobs it will create
- ✍ the Amount of Poverty Alleviation which will be achieved.

THIS IS A GIGANTIC PROJECT

E. AEDB SOLUTION OF THE PROBLEM

- ✍ AEDB has come up with a novel idea to surmount this problem. They floated a Pilot Project which, we, M/s General Electro-mecanique (Pvt) Ltd. are executing Right Now.

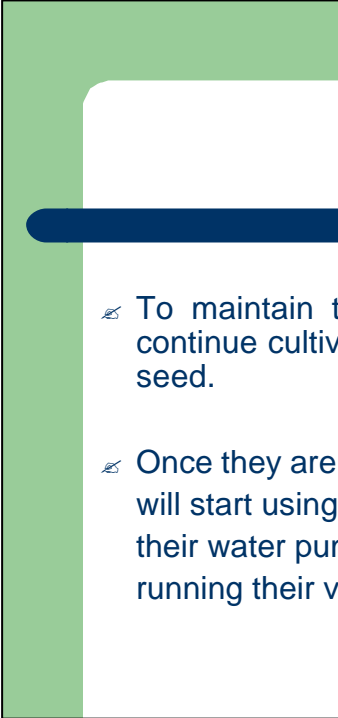

It has a following salient features.


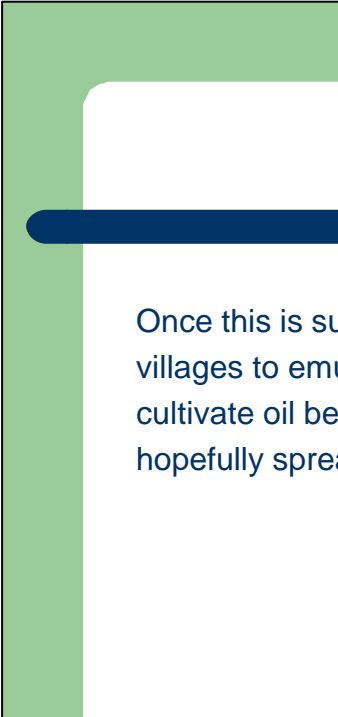
- ✍ Locating a moderately sized village, with 60 to 100 houses, which is far away from the WAPDA Grid but is agriculturally fertile and in an area which is suitable for Jatropha cultivation.
- ✍ Construction and installation of Biodiesel Plant in the village capable of producing Biodiesel from the seed.

- ✍ Installation of an Electric Diesel Generator.
- ✍ Electrification of complete village.
- ✍ Making the villagers cultivate Jatropha in 2 acres of land.
- ✍ Training the villagers to produce Biodiesel from the seed

F. Expected Results of Pilot Project

- ✍ A village which did not have any chance of getting electricity, is electrified.
- ✍ Villagers have the capability to produce Biodiesel indigenously and run their Generator without external help and at a very little cost.

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- ✍ To maintain the electric supply they will have to continue cultivating Jatropha or any other oil bearing seed.
 - ✍ Once they are aware of the usage of Biodiesel they will start using it for other purposes also like meeting their water pumping needs, running their Tractors, running their vehicles etc.



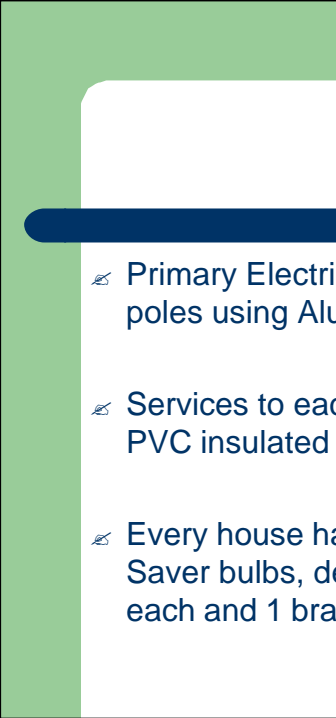

Once this is successful it will set an example for other villages to emulate, creating automatic incentive to cultivate oil bearing seeds and produce Biodiesel and hopefully spreading to all the villages in the country.

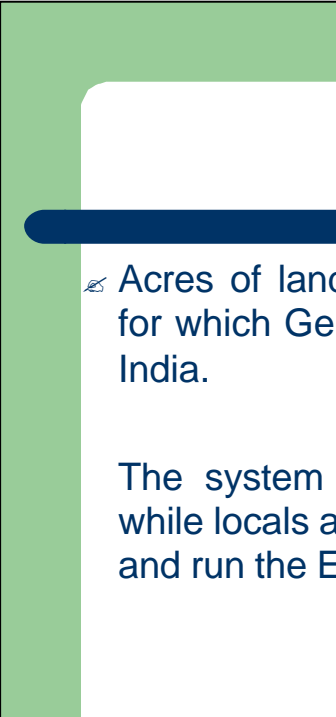

In case this dream is really fulfilled, while on one hand it will reduce the burden on Electric Supply companies reducing the energy crisis we are in, and on the other hand it will eventually reduce the quantum of national Fuel Oil import bill improving trade balances.

G. ABOUT THE PROJECT

The chosen village is

- Umar Din Arain which is 47 Kms from Gharo in Mir Pur Sakro.
- Has 39 RCC houses, 24 Mud houses, 2 Schools, 1 Mosque and 1 Mazar.
- A building has been constructed to house one Generator, one Transesterification plant, one Oil Extraction Plant, one Oil Filtration Unit and storage area for Seeds etc.

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- ✍ Primary Electrical distribution has been done on PCC poles using Aluminium conductor.
 - ✍ Services to each house has been provided through PVC insulated conductor.
 - ✍ Every house has been supplied with 3 or 4 Energy Saver bulbs, depending on size of the house, of 8 watt each and 1 bracket fan.

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- ✍ Acres of land has been cultivated with Jatropha for which Germination seeds were imported from India.

The system is in the initial stage of operation while locals are being trained to produce Biodiesel and run the Electrical Network.

We Believe In It

***And are Planning to
Cultivate Thousands of Acres
with Jatropha .
Please Join In.***