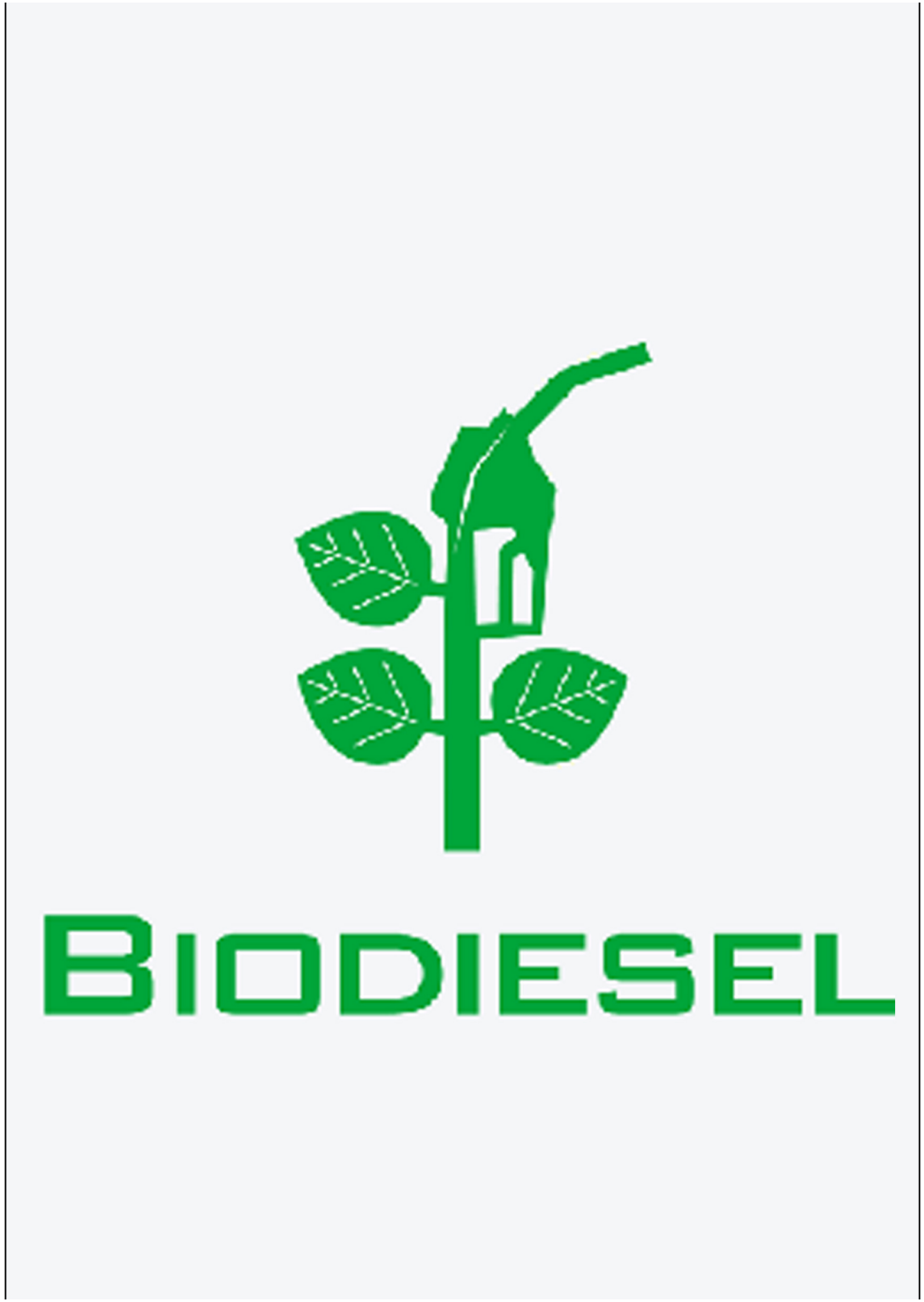
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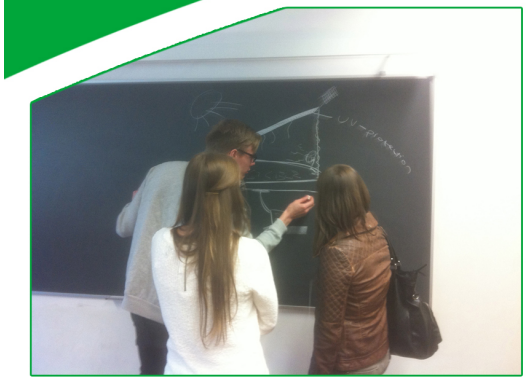
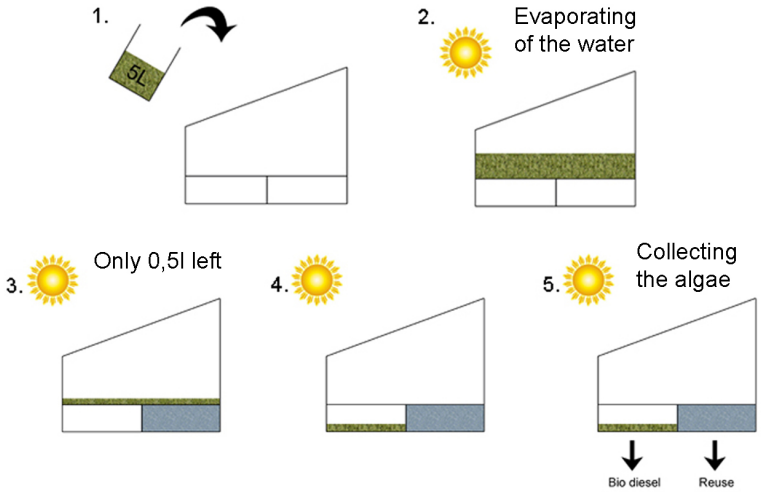


One of our biggest contemporary problems is the high use of fossil fuel. The oil contained by micro algae can be an ecological and sustainable solution since the oil can be used as a bio fuel.

Before the oil can be extracted from the algae, the algae need to be dried. The drying step in the oil production process is a high-energy consumption step. The energy source that is currently used is electricity. If electricity is kept as the energy source for the drying of the algae than the drying step in the oil production process is a high cost step that consumes fossil fuel. The whole purpose of producing oil from micro algae to be used as fuel is to have a source of ecological and sustainable energy at a low cost. And that is exactly what our dryer is, an ecological and very energy-efficient dryer.



The dryer works using the principle of removing the excess water by distillation. The tank design and the material used enhances the temperature raise obtained by exposure of the algae mass to sunrays. Care has to be taken to protect the micro algae against temperatures higher than 50 deg C to prevent damage to the algae. Before the temperature exceeds 50 deg C an alarm goes off and a cooling process is started automatically to reduce the temperature of the algae in the water. The energy for the sensor used to measure the temperature as well as the energy for the cooling process is provided by a solar panel, there is no regular electricity involved.

Next to the protection against high temperatures the algae are being protected against UV light.
A sensor indicating the level of the water-algae mixture allows a valve to be opened when the distilling process has finished. This results in the water reduced algae mixture to run into another tank. The energy for this sensor also comes from a solar panel.
Since the drying of the algae is the most energy-consuming step in the whole bio fuel production process, the development of a dryer that runs fully on solar energy makes the micro algae oil production a ecological and sustainable solution for the use of fossil fuel.