In the context of energy crisis and environmental issue, we are developing a sustainable process for the production of microbial (microalgae and bacteria) biomass which can be used as feedstock for biofuel production. Sustainability is achieved by improving microbial feedstock using wastewater as cheap source of nutrients. To that end, the best indigenous microalgae-bacteria consortium is constructed to produce higher microbial biomass titer as well as to treat the wastewater effectively under optimized conditions. Then downstream processing for obtaining bio oil from the harvested microbial biomass is done via HTL.