

## OPPORTUNITIES AND CHALLENGES OF BIOENERGY IN IRANIAN AGRICULTURAL SECTION

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### **Abstract**

Agricultural sector consumed 92 percent of Iran's total water withdrawal along with 3.8 percent of final energy while produced less than 12 percent of gross domestic production (GDP) in 2011. Even though Iran has limited fresh water resources and less than 30 percent of country's area belongs to suitable cultivatable lands, considerable potentials of Bioenergy are technically available from which more than 4 billion liters of bioethanol, 7 billion cubic meter of bio-methane as well as 51TWh of electrical energy could be mentioned. Furthermore new capacities can be developed even with limited resources of water e.g. wood farming with low quality waters and recycled wastewater, algal biodiesel and bio-refineries for lignocellulosic biomass. By employing appropriate planning and management between 5 to 8 percent of national energy demand might be supplied by agricultural Bioenergy carriers. Despite of significant potentials unfortunately only few numbers of practical projects have so far been implemented in the field of agricultural biomass energy. They are limited to some rural biogas plants, a biodiesel plant in Isfahan, an algal biodiesel project in Bushehr and a lignocellulosic ethanol production plant in Fars province. Unless electrical feed-in-tariffs there are still no certain incentives or supportive legislation in agricultural sector and furthermore, bioenergy industry is suffering from shortage of effective investment by private section and influential technical support from scientific institutions.