Potential of Date Palm Agricultural Waste for Energy production in Iraq

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Abstract

The high volatility in oil prices in the recent past and the blundering policies of fossil fuel resources investment in Iraq, resulting turbulence in energy production compels looking for alternate sources of energy, for both economic and environmental reasons. The significance of renewable energy has been increasing rapidly worldwide due to its potential to mitigate climate change, to foster sustainable development in poor communities, and to augment energy security and supply. Date palm (Phoenix dactylifera L.) is a principal agricultural product in Iraq combining 17,036,560 trees distributed mainly in the middle and southern parts of the country. This huge abundance yields about 600k tonnes of palm secondary products per year including palm midribs, leaves, stems, sheath and fronds. Additionally, there is about 200k tonnes of damaged dates every year that can be transformed into bioethanol due to their high content of sugar. In this paper, the technoeconomic aspects of using the agricultural waste of date palm trees to produce energy for heat, electricity and transportation fuel, is discussed.