

**Feasibility Study on the Use of Hydrogen Technologies by Hotels in the Mexican Caribbean**

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**ABSTRACT**

Environmental problems caused by climate change and economic problems the world is facing, have created a great opportunity for the development of renewable energy, with a huge acceptance in world markets by creating new companies and jobs, not to mention benefits of consumption savings of energy resources and reducing fossil fuels use. The use of hydrogen technologies has extended to all economic activities, including tourism, which is one of the greatest energy demand sectors, in particular for the production of electric power in hotels, to offer more comfortable services to their customers. The current trend of tourism globally is towards sustainable tourism and the promotion of sustainable consumption of water, energy and heat, including the use of sustainable technologies to produce them. This paper presents the results of a feasibility study to determine the acceptance of hydrogen as an energy vector to produce electricity, among 4 and 5 star (4\*, 5\*), and Grand Tourism (GT) hotels of Cancun, in the Mexican Caribbean. Findings reveal there is an increasing awareness in the tourism sector that adopting sustainable management practices will assure both survival and success of the tourism businesses. These include the use of renewable energy and hydrogen technologies as a means to contribute decreasing carbon dioxide emissions. The tourism industry as a whole is responsible for 5% of the total worldwide, and hotels and other accommodation establishments for 1%, according to the United Nations World Tourism Organisation. In addition, the results show that there is a growing interest of hotels in adopting hydrogen technologies in order to reduce energy costs.