



## **Determination of the marine potential energy in the French West Indies for the building of energy converter pilot**

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The French West Indies are composed by the archipelago of GUADELOUPE(61°W 16°N) and the island of MARTINIQUE(61°W 14°N), and located in the Lesser Antilles Arc. The most part of the whole islands have a volcanic origin. This Islands are not electrically connect, like the other English and Spanish speaker Island. The electrical networks of this island are completely isolated. The needs of electrical energy grow with the development of the air conditioning, the industrial production, the street lighting and the news technologies. To ask to the needs, all the electrical energy are product locally. Actually the most part of the electrical production In the both territory of the French West Indies are with fuel, follow by coal, hydraulic production, wind generator and solar panel. In spite of the lesser dimension of the two territories, the construction and the maintains of electrical network are very expensive, cause by the archipelago situation and the strong variation of the topography.

The FWI have two big facades on the east on the Atlantic Ocean and on the West on the Caribbean Sea. This Geographical situation give the island a great advantage on the exploitation of the marine energy resources. The using of marine resources for product electricity seem natural.

The prospective work start since 2004 are presented in this work. Two principals goals are determined: to evaluate the real marine energy potential in the zone of the FWI and to define the size of pilots of marine energy converters. The four most potential marine energy of the FWI will present and analyze. A classification of this resource in function of the exploitation possibility in the zone and the geographical repartition of the needs are presented. Our classification give the OTEC, followed by the wave energy, The Offshore Wind Generator and sea current energy. On this classification a particular attention of the conception and the sizing of a pilot for the OTEC and a wave energy converter have be done. The detail of this conception will be present. One of this two converters is in advance applied project, and a large part of it will be present too.