

عنوان مقاله:

Investigation of the hydrokinetic energy extraction from tidal currents in the Hormozgan maritime zone

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خلاصه مقاله:

It has been more than ۳۰ years that marine currents are studied over the Hormozgan maritime zone. In this paper, in addition to discussing results of some previous related studies, simulation results of the hydrodynamic regime of currents are presented. The aim of this study is to investigate feasibility of construction of tidal power plants in the region. We believe that the existing analytical and field data can be used for energy zoning of tidal currents in the Hormozgan region, which can be scrutinized with small convertors. Based on these data, it is found that in most of the time, the maximum speed of the current does not exceed ۱.۸ m/s. Density of the exploitable power in the hottest point is estimated between ۱ and ۳ kW/m^۲. The extent of zones with the maximum speed of greater than ۱.۶ m/s is found in the Qeshm Canal, reaching to approximately ۲۲km^۲, while in two regions, the depth of the zone reaches to approximately ۴۰m. Although small convertors with the cut-in speed of approximately ۰.۵m/s contribute to ۵۰% of the energy production during a day, construction of a tidal power plant requires improvements in the technology of these convertors.

کلمات کلیدی:

Marine renewable energy, Tidal hydrokinetic energy, Hydrodynamic simulation, Qeshm Canal, Mike۲۱

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