

Estimating Marine Tidal Power Potential in Kenya

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Abstract : The rapidly diminishing fossil fuel reserves, their exorbitant cost and the increasingly apparent negative effect of fossil fuels to climate changes is a wake-up call to explore renewable energy. Wind, bio-fuel and solar power have already become staples of Kenyan electricity mix. The potential of electric power generation from marine tidal currents is enormous, with oceans covering more than 70% of the earth. However, attempts to harness marine tidal energy in Kenya, has yet to be studied thoroughly due to its promising, cyclic, reliable and predictable nature and the vast energy contained within it. The high load factors resulting from the fluid properties and the predictable resource characteristics make marine currents particularly attractive for power generation and advantageous when compared to others. Global-level resource assessments and oceanographic literature and data have been compiled in an analysis of the technology-specific requirements for tidal energy technologies and the physical resources. Temporal variations in resource intensity as well as the differences between small-scale applications are considered.

Keywords : tidal power, renewable energy, energy assessment, Kenya

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