

## Tidal energy generation using the double-emptying system scheme

### Abstract

This paper presents the electrical power generation by using the tidal lagoon system. In general, using tidal concept, water will flow into the dam in one direction, and then water will be forced to be released back into the sea via the low-head one-way generator. In some cases, there is a two-way power generation where power is generated when water from the sea flowing into the dam and one more generation when power is released back into the sea via two different generators. However, in this paper, a new scheme of tidal generation namely Double-Emptying System is proposed where the power can be generated during in flow and out flow, but, by using just one low-head one-way turbine only. The operation of this scheme is explained in detail in the paper. Analysis regarding the potential power production is then executed on the best location in Malaysia; Port Klang. Findings show that by using the proposed technique, the maximum potential mean power can be generated in March whereas the minimum in June, with 9.8926 MW and 6.151 MW, respectively.