

(54) Title of the invention : AN IN-PIPE HYDROKINETIC TURBINE (IPHKT) STRUCTURE

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(57) Abstract :

The present invention relates to an in-pipe hydrokinetic turbine (IPHKT) structure (100) for pipe with a facility to mount different types of modified hydrokinetic turbine rotor (5). The structure (100) can generate clean energy out of excess energy available within the pipeline distribution system. The structure (100) comprises a hydrokinetic turbine (HKT), in particular case, a Savonius HKT (SSHKT) rotor installed in a pipe section (4) with the aid of a shaft (3) mounted in the pipe section (4), a bearing (6) fitted in a bearing housing (2) passing through the pipe section (4), a detachable dynamometer pulley (1) for conducting mechanical performance of the turbine (100). The (IPHKT) structure (100) produces power by harnessing kinetic energy available in the flow. Numerical analysis and experimental analysis show that performance (viz. coefficient of power (Cp) and coefficient of torque (Ct)) of IPHKT is better than similar HKT working in the open channel environment.

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