VERTICAL TURBINE BLADE MODIFICATION OF OCEAN CURRENT ENERGY (OCE) USING CFD ANALYSIS

Nama Mahasiswa : Dody Priyambodo
NRP : 4205 100 039
Jurusan : Teknik Sistem Perkapalan
Dosen Pembimbing : Irfan Syarif A. ST. MT.
Ir. Tony Bambang M, PGD

Abstrak

We have a lot of research on alternative energy in order to find the source of renewable energy. For that we try to do initial research on these alternative energy. Referenced fields related to marine, so we tried to take the topic ocean current energy use. In this study the ocean currents will be used to produce thrust that can rotate the turbine. Basically for alternative energy with this method there are two types of vertical and horizontal turbines. For this research to be analyzed is the vertical turbine. Selected vertical turbine type because it has greater torque and can spin due to the fluid liquid from any direction. This method uses a turbine drive drowned in the sea water. turbine will spin when affected with ocean currents in the water. Rotation of the turbine rotor will result come round, so it will produce the output of electric power. The greater the current in the water the faster the velocity of the turbine where power generators are also produced greater. In this study we will analyze the effect of the addition of fins on the turbine blade, whether it will produce a large lift force that turns the turbine can be optimized, because it will be we compare the results of the original turbine blade and turbine blade modification (finned blade). Analysis of fluid flow behavior that occurs in the turbine blade is done by using software Computational Fluid Dynamics (CFD).

Keywords : energy, turbin vertikal, Konventional blade, Gaya Lift, CFD.