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ANALISA TORSI COGGING GENERATOR 1 KW DENGAN VARIASI TEETH STATOR DAN PENAMBAHAN UMBRELLA MENGGUNAKAN SOFTWARE MAGNET INFOLYTICA DI PT LENTERA BUMI NUSANTARA
LEONARDO BINTANG, Ir. F. Eko Wismo W., M.Sc., Ph.D.; Andhi Akhmad Ismail, S.T., M.Eng.; Sugiyanto, S.T., M.E
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ABSTRACT

Cogging torque is a torque in the wind turbine energy system has greatly affects to the rotor rotation. This affects is the interaction between permanent magnets and objects that has the ability to increase the magnetic flux is good. The Pembangkit Listrik Tenaga Bayu (PLTB) *cannot be operated at low wind speeds, if the value of cogging torque is large. It means that the wind turbine is heavier to be able to rotate the generator. So that this cogging torque is not desirable in the generator design. There are several attempts to eliminate cogging torque, the generator geometry change on the permanent magnet is used. It name a skewing method.*

Value reduce of cogging torque apply the Infolytica Magnet software. The 12-slot 8-pole Permanent Magnet Synchronous Generator (PMSG) is used. The 100 turn windings and 600 rpm PMSG which is given a load 5 Ω to produce power of 1 kW. The teeth width and the back-yoke geometry changes, also added to umbrella reduce the cogging torque. There are still some possibilies to reduce the cogging torque that have not been done, for example the skewing method. This is due to the lack of time.

The results show the amount of cogging torque before is 1.83825926 Nm and after is 0.9341045 Nm. The teeth width is reduced from 10 mm to 6 mm and the umbrella is 0.20531883 Nm.

Keywords: *cogging torque, wind turbine, permanen magnet synchronous generator*