

Title (en)
SCALABLE AND EFFICIENT MECHANICAL SPEED CONVERTER-CONTROLLED WIND AND HYDROKINETIC TURBINES

Title (de)
SKALIERBARE UND EFFIZIENTE MECHANISCHE DREHZAHLWANDLER-GESTEUERTE WIND- UND HYDROKINETISCHE TURBINEN

Title (fr)
TURBINES ÉOLIENNES ET HYDROLIENNE COMMANDÉES PAR UN CONVERTISSEUR DE VITESSE MÉCANIQUE ÉCHELONNABLE ET EFFICACE

Publication
EP 3853504 A4 20211103 (EN)

Application
EP 19903644 A 20191223

Priority

- US 201816233365 A 20181227
- US 201916701741 A 20191203
- US 201916691145 A 20191211
- US 2019068418 W 20191223

Abstract (en)
[origin: WO2020139863A1] A wind or water flow (hydrokinetic) turbine for harnessing a predetermined minimum or baseload value of renewable electric energy from the wind or water flow energy received at a harnessing module comprises the harnessing module, a controlling module, and a generating module. Han's Principle is that, in a torque balanced three variable Hummingbird speed converter system, from a harnessed input power (input), the generated electric power (output) must exceed the electric power used for the control power (control input) and the input power must exceed the summation of control power and output power. Harnessed input power is provided to a power-balanced three variable mechanical gear control system when a control power of power versus load graph is crossed by an output power line graph to achieve an electrical advantage at a generator output. The three variable mechanical motion control system or "motionics" comprises a Hummingbird control assembly of first and second spur/helical/bevel/miter/ring gear assemblies or Transgear assemblies with an adjustment in between to eliminate variations from constant rotational speed input. The Hummingbird mechanical variable to constant speed control, a control motor and a generator among other components may be mounted on land or a floating platform. Constant electric power at constant frequency are delivered to a variable load.

IPC 8 full level
F16H 61/48 (2006.01); **F03B 17/06** (2006.01); **F03D 15/00** (2016.01); **F03D 15/10** (2016.01); **F16H 1/20** (2006.01); **F16H 1/46** (2006.01); **F16H 3/44** (2006.01); **F16H 3/72** (2006.01); **F16H 41/24** (2006.01)

CPC (source: EP)
F03B 17/061 (2013.01); **F03D 15/00** (2016.05); **F16H 3/44** (2013.01); **F16H 3/724** (2013.01); **F05B 2210/16** (2013.01); **F05B 2260/4031** (2013.01); **Y02E 10/72** (2013.01)

Citation (search report)

- [X] US 2018195582 A1 20180712 - HAN KYUNG SOO [US]
- [X] US 2018038340 A1 20180208 - HAN KYUNG SOO [US]
- [A] US 2012299301 A1 20121129 - HAN KYUNG SOO [US]
- See also references of WO 2020139863A1

Designated contracting state (EPC)
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)
BA ME

DOCDB simple family (publication)
WO 2020139863 A1 20200702; AU 2019416124 A1 20210729; AU 2024202456 A1 20240502; BR 112021012702 A2 20210908; CA 3112223 A1 20200702; CA 3112223 C 20230801; EP 3853504 A1 20210728; EP 3853504 A4 20211103; MX 2021003494 A 20210618

DOCDB simple family (application)
US 2019068418 W 20191223; AU 2019416124 A 20191223; AU 2024202456 A 20240415; BR 112021012702 A 20191223; CA 3112223 A 20191223; EP 19903644 A 20191223; MX 2021003494 A 20191223