

CLAIMS

- 1) Modular kinetic machine (M) for producing electricity from fluid flows, floating, type "open center", with the swept area fully immersed and perpendicular to the flow direction, consisting of one or more turbines (T_i where $i=1,2,\dots,n$) with built in generators (G_i where $i=1,2,\dots,n$), a floating/positioning control device (F), **characterized in that** each turbine is structurally, mechanically and electrically independent, and consisting of a rotor with blades, a stator and a built in generator.
- 2) Modular kinetic machine (M), **as claimed in** claim 1, where each rotor and the related stator consist of more parts centered on the rotational machine axis itself, involving a low radial runout and out of bound among the rotational parts.
- 3) Modular kinetic machine (M), **as claimed in** claims 1 and 2, where the number of blades is the maximum compatible with the overall machine dimensions and performances, in order to reduce the load for each blade allowing to use materials characterized by a lower structural strength and lowering the whole machine weight and costs.
- 4) Modular kinetic machine (M), **as claimed in** claims 1, 2 and 3, where in each turbine, the rotor circular movement, related to the stator, is allowed by rotating elements of spherical, cylindrical or any other shape, sliding through circular races machined on the rotor close to blades root; and where the number of cited elements can vary related to design requirements.
- 5) Kinetic modular machine (M), **as claimed in** claims 1, 2, 3, and 4, where the center hole is suitably designed, using the D_i/D_e ratio, allowing the maximum available energy production.
- 6) Modular kinetic machine (M), **as claimed in** claims 1, 2, 3, 4 and 5, where the cited floating/axes control device (F) consists at least of a floater (11), a positioning wing (12) and a machine floater link fixture (13); and where the floater (11) is suitably designed (shape and calculations) in order to allow the machine positioning in terms of optimal depth and stable transient mood; and where the cited positioning wing (12) is installed out of the turbine, close to the floater (11) and it is linked to the turbine module by one or more beams or any other frame (13) suitable for this purpose, allowing the machine to reach the right distance from the shore or to the anchoring point.

- 7) Modular kinetic machine (M), **as claimed in** all the previous claims, **characterized by** only one turbine for low cost purposes, high Power Coefficient, allowable for small loads.
- 8) Modular kinetic machine (M), **as claimed in** all the previous claims, **characterized by** more turbines can be installed on a single fixture, including a number of floating/axes control devices, conveniently designed.
- 9) Modular kinetic machine (M), **as claimed in** all the previous claims, where the production and commercialization are covered by the present patent for industrial invention as described and depicted too.