Micro turbine generator for home use

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Currently, requirements for connecting distributed generation systems--like ...

From our humble beginnings over a decade ago PowerSpout turbines have developed into world leading products. We make each one specifically tailored to your site and energy needs. Sustainably manufactured here in New Zealand in our off-grid workshop using up to 68% recycled materials.

PowerSpout turbines are modular so if you have an appropriate water resource installing multiple units has many advantages. All hydro turbines require periodic maintenance and if multiple units are installed the power generation doesn"t need to stop during this time. Keeping our turbines modular and lightweight means they can be affordably air freighted anywhere in the world.

Once you have collected your site data you can use one of our advanced calculators to accurately predict how much power your water resource can produce. Our calculators will also show you the impact of different design considerations such as pipe length and diameter, system voltage, cable size and material.

It is well known that energy is generated by building dams over giant underwater turbines; however it is possible to use micro hydro generators (<100kW) or pico hydro generators (<5kW) on more modest water flows. In this section we explore where the technology can be used in a small scale area, for example the home or a community project. More about industrial size dams and solutions can be found in the green commercial section.

Obviously, there is a fundamental requirement on a steady stream of moving water, however they have an advantage over solar power (both solar PV and solar heating) and wind, in that they can run day and night and in any weather conditions provided the we don"t have a prolonged drought period where streams and brooks can dry up.

The amount of energy produced is reliant on two things:

The flow of water is simply the quantity of water flowing in the water source, which is measured in litres per second.

The other key factor is the head - this refers to the pressure at which the water hits the turbine blades, and is the vertical distance from the water source to the generator. The larger the distance that the water falls before

it hits the blade, the higher the head. Ideally both the flow and the head will be high, however if one of these is particularly high, while the other is low there is still the potential for a rich source of electricity.

You can estimate the number of kilowatts of energy produced by multiplying the flow (litres/sec) by the head (m) and multiplying by 9.81 (gravitational constant). Remember a typical house uses 4500kWh per year.

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Web: https://kary.com.pl/contact-us/
Email: energystorage2000@gmail.com
WhatsApp: 8613816583346