Water Turbines
Installing And Operating

The Easy Way To Harness The
Power Of Moving Water.

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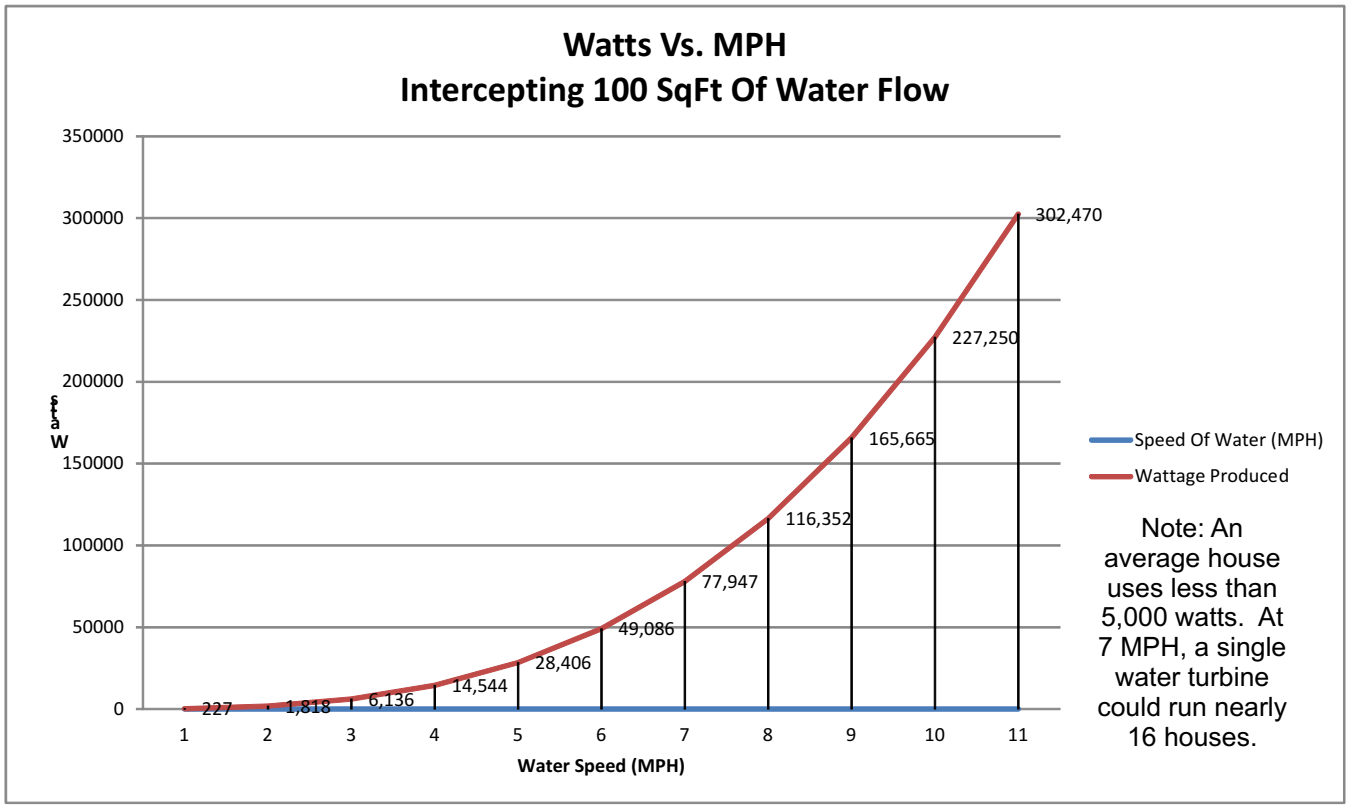
The Power Of Flowing Water



Flowing water is one of our least used, yet most important resources. Flowing water is also one of our most powerful clean resources.

A single stream meandering through a farmer's field could provide all the power the farm would need. That pretty water-fall you like to look at drops megawatts of energy everyday.

Just a tiny fraction of the Mississippi could replace multiple nuclear power plants and dozens of coal-fired plants.

Pittsburgh has three fast flowing rivers that could rival the Pennsylvania coal mines for energy production. Yet, in every case, these wonderfully powerful and clean resources are not being used.

It seems the general attitude towards water power is that there needs to be some large dam that floods thousands of acres before we can make electrical power from water.

What you probably use everyday, a computer, is a good analogy as why that 'big dam' thinking is outdated. Initially, when computing needed to be done, everybody took their work to a big, clumsy mainframe. Microsoft and Apple, to name just two, saw that as a waste. Instead of a centralized mainframe, people began to use small personal computers. This meant that computer power was distributed into small segments that could be tied together through the Internet. The total computing power skyrocketed.

We *easily* can do the same with electrical power. Instead of large dams, we could use small water turbines that capture flowing water where ever it exists and combine the power using the existing grid. We could also simply tie the power from the water turbine directly to a place that needs it. Another option is to use our huge computer network to combine small sources of power intelligently.

Distributing power generation gives us vastly more power, but it also gives us freedom from power outages. Whether the grid is up or down, the individual with the water turbine is always able to turn on the lights because the water is always flowing.

There Are Two Types Of FTC Energy Water Turbines.

Vertical Axis Water Turbine

Applications:

- Oceans, tidal basins, beaches, rapids
- Rivers, streams, canals, waterways
- The base of waterfalls
- Anywhere water can move in multiple directions

These turbines are designed to take advantage of water flowing in random or multiple directions - even simultaneously. Placed in tidal basins, the turbines will take full advantage of water moving multiple directions. Placed in strong surf, the turbines are pushed by the chaotic motion of the water flowing both in and off the beach. They are rugged enough to handle the strongest flowing water while harvesting energy with the greatest efficiency.

The turbines can be ganged in multiple arrangements to offer the user maximum flexibility. Because they are maintenance-free they can be placed far out in the oceans.

Horizontal Axis Water Turbine

Applications:

- Rivers, streams, canals, waterways
- Water outlets where there is a high rate of water flow such as treatment plants
- Waterfalls and drainage systems
- Anywhere water moves in one direction

These turbines are designed to take advantage of water flowing in a single direction. They can be placed inside pipes or just inserted into the water stream. They are rugged enough to handle the strongest flowing water while harvesting energy with the greatest efficiency.

The turbines can be ganged in multiple arrangements to offer the user maximum flexibility.

Creating Limitless Fresh Water

The oceans and rivers possess virtually limitless energy. With our turbines, we can turn that energy into needed fresh water.

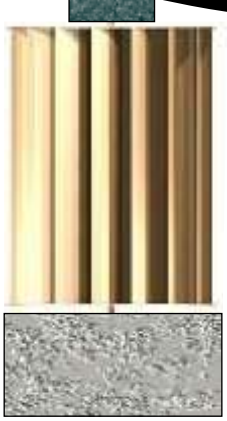
Our water turbines provide the clean, reliable energy to convert undrinkable water to fresh water.

Fresh Water is Produced

Turbine is placed under the water surface in a high flow area

Water Pump

Water is pumped into the RO Unit



A Tip:
Add one of our StarPower generators to the underwater turbine and produce megawatts of electrical power.

The key to fresh water is being able to pump water. The water has to be moved into a cleaning apparatus. In the diagram shown above, we use a reverse osmosis system (RO) to purify the water.

To make a reverse osmosis system work, water has to be forced through membranes. This is normally done with electric motors. These electric motors require energy - energy that was produced most likely by burning fossil fuels.

With our water turbines, we eliminate the need for the electric motors. We take the back and forth of the ocean to turn a turbine which in turn makes the turbine spin.

The turbine is connected to a water pump. The water pump pushed the water through the RO unit. The RO unit purifies the water. Other than the tiny amount of power for the bacteria system, the entire system is powered by the action of the moving water.

This means the moving water is in a real sense is cleaning itself. The end result is clean drinking water.

But, there is more here than meets the eye. Once the clean water is passed back to the land, the land is cleaned by the fresh water.

Not only can we have limitless clean water, we will clean the environment. All by using the power already there.

The Key Elements

Making Water Power Work Requires Some Simple Parts That Are Easily Obtained

Grid-Tied Inverter

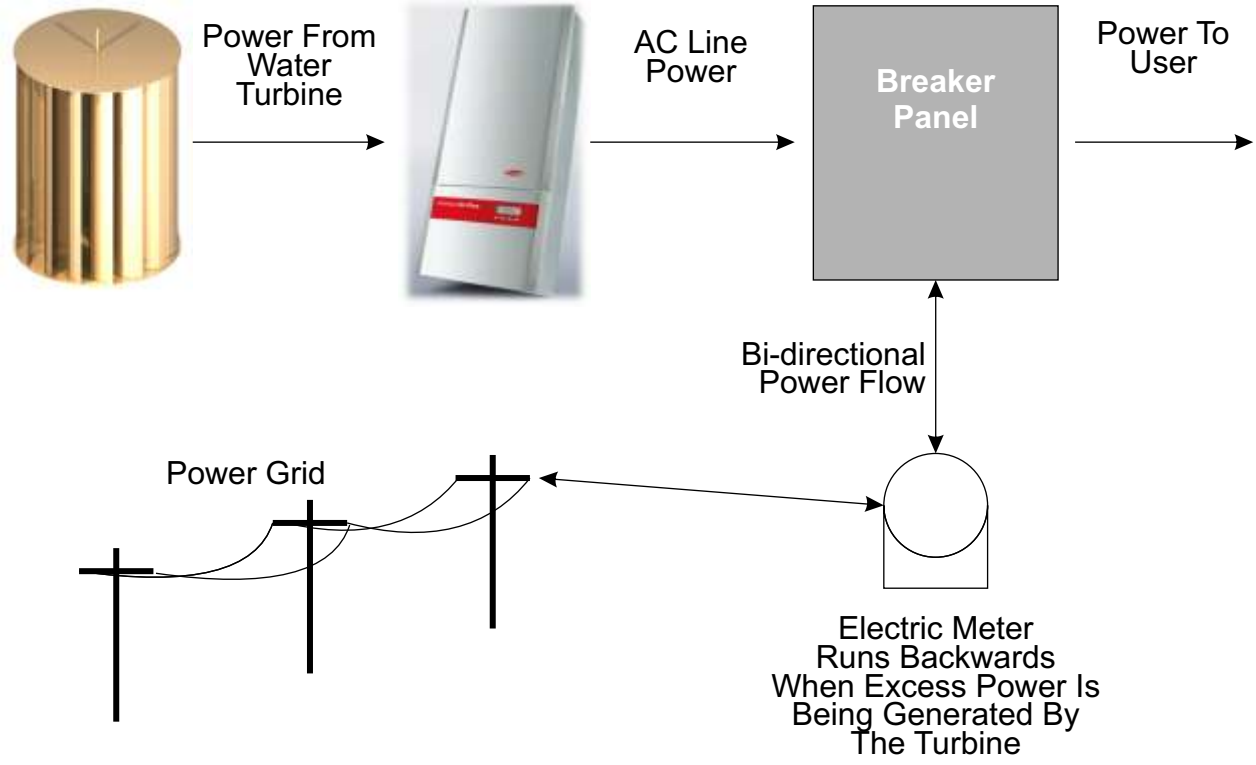
This unit accepts electrical power from the generator on the water turbine converts the power so it can be directly tied to the power company grid. The unit output is AC that matches both the phase and voltage of the power company line voltage.

The unit feeds power back into the grid and causes the electrical meter to run backwards when the user requires less power than the generator is producing. Power companies either give the user credit on their bill or pay the customer directly every month for the power fed back into the grid.

The unit has several built-in safety features that protect the owner and any power company personnel. They are reliable, quiet and maintenance-free. These units have multiple manufacturers so prices are reasonable and competitive.

Installation is simple but should be done by qualified persons. Multiple units can be stacked for greater total power being fed to the grid.

Simplified Connection Diagram

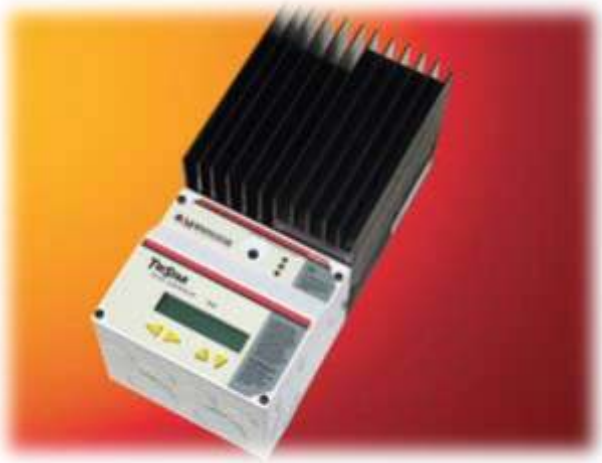


Simplified Battery to Grid Connection Diagram

Charge Controller

This unit accepts electrical power from the generator on the water turbine converts the power so it can be used to charge a bank of batteries. The unit's output is a DC voltage that matches the voltage of the employed battery stack.

The charge controller can handle a wide range of voltages from the turbine and successfully convert that voltage to charging potential that can be used by the batteries.

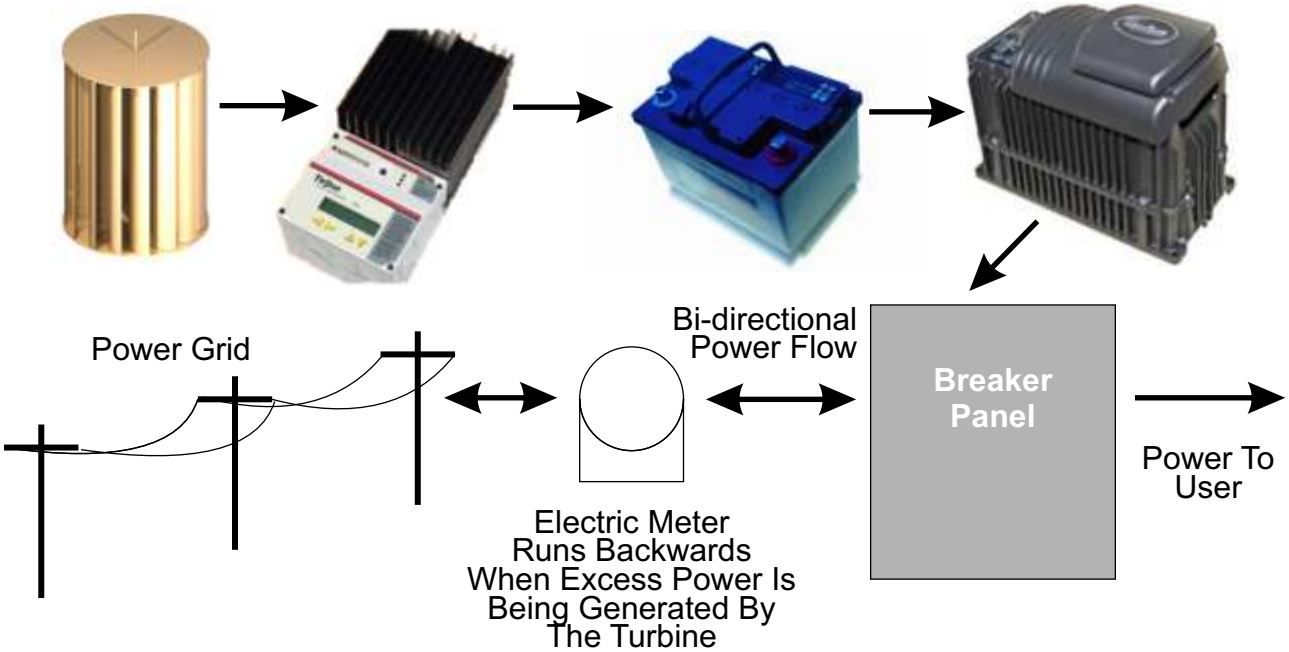


Battery-Powered Inverter

This inverter performs the same function as the inverter shown on the previous page. The difference is that instead of getting power directly from the turbine, the unit takes power from the batteries.

The advantage of using batteries is that the batteries act like a storage device so when the water dies down, the power is still available.

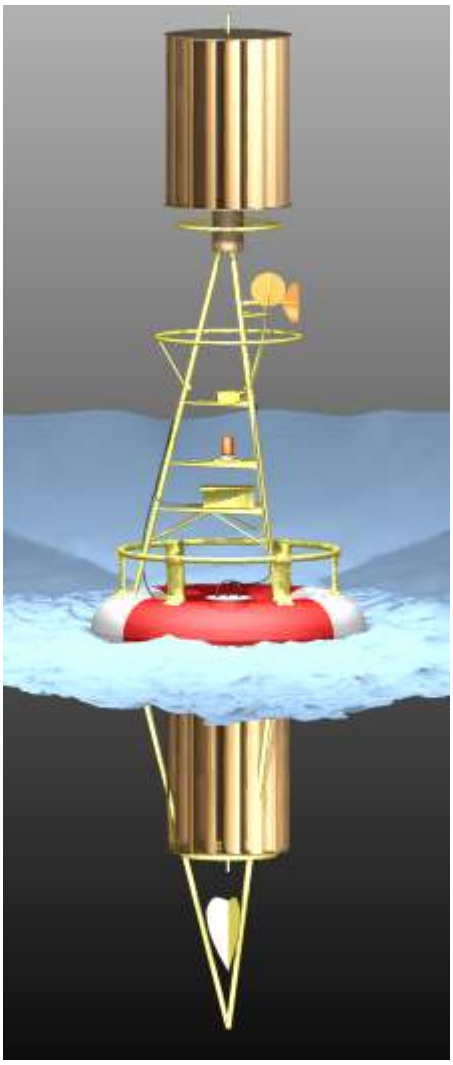
Further, on some models, the unit will produce power even when either the gird is down or there is no grid.



Power Evolution

We Must Use Our Environment Intelligently To Meet Our Power Needs

Throughout human history, we have picked what was easiest to use to meet our power needs. Whether it was cutting down a forest, digging loose coal, or burning that thick tar we call oil; we grabbed what was at hand without thought or concern. We have reached a point in our evolution where we must use our environment in a more intelligent way.



Using water power is so easy. Here a turbine is suspended with a simple flotation device. How many places could you put one of these?

To that end, the idea of electric vehicles is wonderful. They are fast, reliable, and cause virtually no harm. Their only drawback is they use electricity, which currently is created by nuclear fission, coal, or oil.

Nuclear fission, coal, and oil heat water to create steam. That steam then turns a big turbine to create electricity. Imagine the losses occurring by using those antiquated processes.

If we use oil to create electricity, for example, we lose 70% of the energy in the oil through heat losses. Then we have to worry about emissions and polluting the air. An electric vehicle started out as a good idea, but quickly lost its luster.

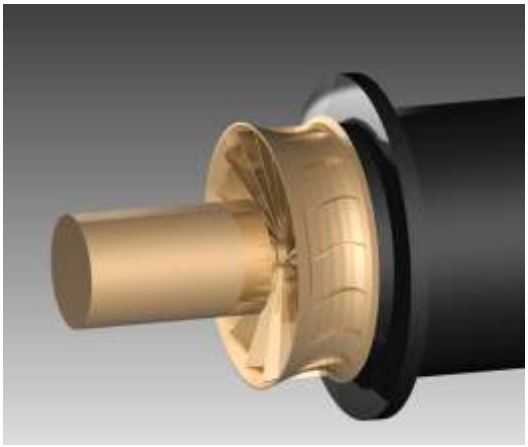
Why not drop a turbine in our rivers and create electricity directly? Isn't that complicated? No.

FTC uses strictly DC generators that work beautifully in water. There are no losses through radiation like there are with AC generators. Remember that hum you heard in a radio when you went near a power line. That was energy being radiated away by the power lines. It's even worse in water. FTC generators don't radiate - never have, never will.

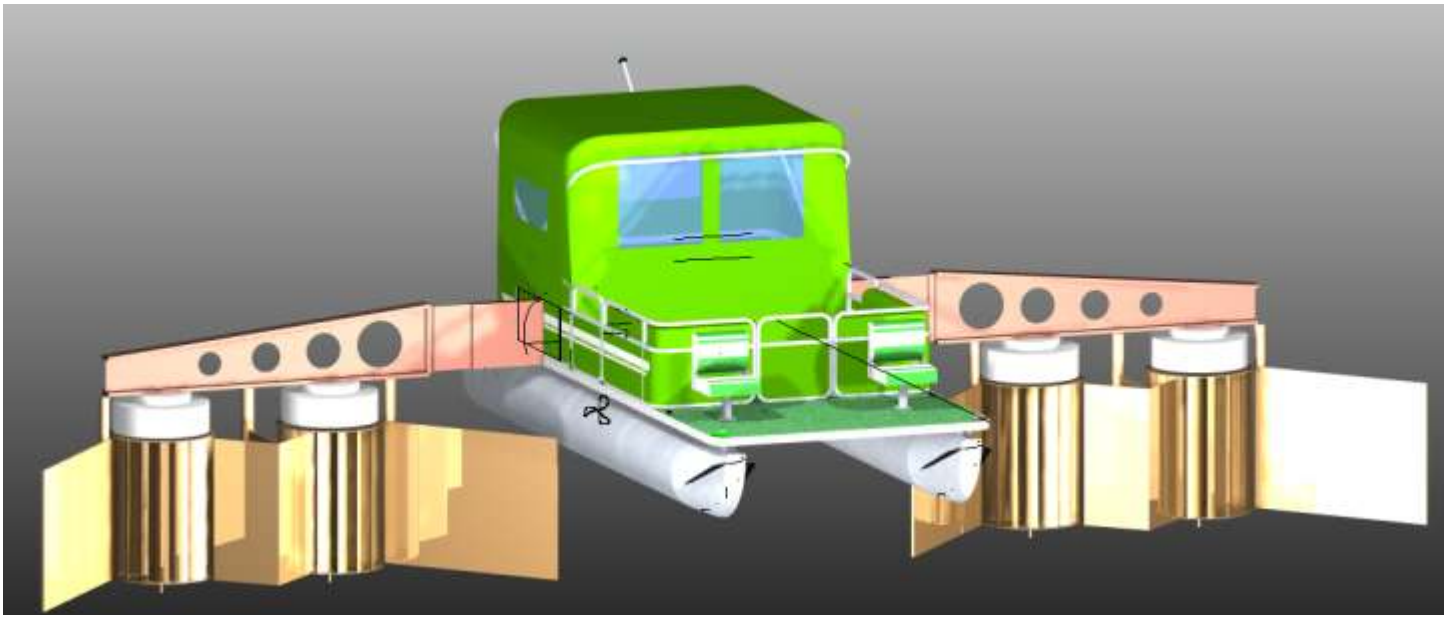
Just suspend an FTC water turbine in moving water. No noise. No pollution. No harm to the planet.

Because we use DC, you can plug that electric vehicle directly into your turbine's output. Talk about high mileage. It's limitless.

How many water pipes are there that empty excess water into lakes, rivers, and oceans? Everyone of those pipes could have a water turbine attached to recapture some of the energy. We have a size to fit all of them.



River Pontoon Boat



68,500 KWH/Month with 7 MPH Flow

Unit has four 25 KVA generators. Cost of the turbines and generators is about $105,000. At 15¢ per KWH, that's $10,275/month in income. The payback period is 10 months. After the payback, the unit continues to generate $10,275/month in income with virtually no operating costs. Little or no permitting.