

Tidal Publications

The Economics of Tidal Stream Power

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HOMEENERGY EFFICIENCY TIDAL POWER FACTS: UNDERSTANDING HOW
TIDAL ENERGY WORKS

Posted on Sep 28, 2012 in Energy Efficiency by Matthew Speer

2 Comments

Our ancestors were onto something centuries ago when they began to harness the power of water to produce energy. Dating back to the middle ages or Roman era, tidal power was used to create mechanical energy that operated grain mills. Often overlooked, the potential **energy** that our oceans and waterways have, can produce clean and **renewable energy** if we just work to harness it properly.



Tidal power, often referred to as tidal energy, is a type of **hydropower** that harnesses the energy of our ocean's tides or other flowing waterways to produce power, usually in the form of electricity. As sea levels rise and fall or the currents flow underwater a potential energy is created. By using equipment such as **tidal energy generators** and underwater turbines in areas of high tidal movements, the kinetic motion of the ocean can be used to turn the turbines, thus producing electricity. Experts agree, tidal power has a significant potential for future **electricity** generation, mainly because of the ocean's massive size and predictability of the tides.

There are some distinguishing benefits of tidal power that should not be ignored. If we consider the fact that seawater is 832 times more dense than air, an 8 knot current is equivalent to a land based **wind turbine** receiving a 380kph wind storm, tidal power is more efficient than wind. Unlike its wind and solar counterparts, **tidal energy** can be produced out of sight, deep below the surface of the water. While this may not seem like a big deal, consider the "not in my backyard" arguments that occur when a wind farm is trying to be built near a suburban town. In addition, according to environmental expert Dr. David Suzuki, "tidal energy has one of the smallest footprints of any

renewable energy resource.”

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During our research, we found an interesting detail surrounding tidal energy and the effect its generation could have on the Earth. Naturally the movement of tides causes a loss of mechanical energy that is associated with the Earth’s rotation. According to some studies, our planet has actually lost 17 percent of its rotational energy in the past 620 million years. By adding tidal energy generators to the mix, it will actually remove more energy from the mechanical system, causing the Earth’s rotation to slow. Before anyone becomes alarmed, the impact is so miniscule that its effects will only be felt over the course of many millions of years. We can all agree, **climate change and pollution** is much larger threat for us.

Unfortunately, not everyone owns beach front property or are near a large river, thus tidal power can’t be the only solution, however, it will be part of it. Since tidal energy will practically never be exhausted, it is truly one of the key renewable energy platforms that was founded centuries ago and will power us for centuries to come.