A Source of Consumable Energy

In the United States there is energy all around us everywhere we look. The problem that we encounter is that not all of that energy is useful to us. The energy that is useful to us and that we rely on daily is called consumable energy. The fear we encounter with consumable energy is that the resources we have and use today are running out. For example the oil is a non-renewable resource that we use everyday will not be around forever at the rate we are going through it. Scientist have said that we only have about 50 years of oil left. Oil is the leading energy source in the United States. The question we are now running into is what consumable energy do we have an abundance of that we can use or better use that will be efficient and long lasting?

Well if we take a look at the planet what makes up most of the Earth? That's right, the Earth is covered by 70 percent water. Not only is there water on the surface of the planet but inside it and in the atmosphere. One form of consumable energy that would be most beneficial to further research in the United States would be hydropower. Hydropower is energy obtained from flowing water.

When it comes to hydroelectricity, tidal power is one of the consumable energies being studied around the world today. There are two types of energy that we can obtain from tidal energy they are kinetic and potential energy. We obtain the kinetic energy
from the oceans currents and the potential energy from the rise and the fall of the height of the tides.  

Tidal power is a renewable energy source because the ocean tides are naturally occurring due to the orbital mechanics of the solar system. The tides are something that we would likely not see come to an end in our human life time. Also, tides are very reliable and predictable unlike some other energy sources. For example, solar power is a great consumable energy but only if the sun is out. Also wind energy seems like a good source of energy but would only be beneficial if it was windy outside. So what would you do on a calm day? 

The energy potential of tidal power is large but currently the only country that successfully uses this power source is France. This process of using the tides for energy is conducted when the tides come into shore they trap them in reservoirs behind dams or sometimes called barrages. Once they have the water trapped they wait for the tide to drop down and release the water behind the damn just like a regular hydroelectric power plant. There are plants in France that produce enough energy from tides to power over 200,000 home with all of the electricity!

Tidal energy is a great consumable energy and can be uses to power many different things that we use in everyday life such as, to power our homes, factories, and so on. On the other hand tidal energy has several downfalls that cause it to be difficult to use and that is why it is not more greatly used but with further research may be in the future.

When using tides for energy you need a large increase between the high tide and the low tide, at least 16 feet. This becomes a problem because there are only a few places
on the globe that produce tides of that nature. Tidal power stations exist in Canada, France, Russia and China. In the United States, a maximum tidal range of 5 meters occurs only in Maine and Alaska. The station that generates the most electricity is in France on the Rance River.²

Another fear that research has shown with using the tides for energy is that if the use of tidal power were to become used more and brought to high enough levels that it would actually affect the rotation of the earth. The research shows it would slow the earth's rotation by 24 hours every 2,000 years.¹ I know this may not seem like a lot but it would affect a lot of different things in the environment over time and essentially destroy the planet.

Some of the other downfalls of tidal power include that the tidal power stations are very expensive to build and they often create electricity when it isn't needed as much. The tides are always changing, but the need for electricity much smaller at night then in the day.²

Tidal power stations also have environmental and ecological problems which is the biggest downfall to tidal power. It is hard to predict if the change in the water levels will affect the plant growth and crops in the area. Will it also cause flooding or change the water quality? Many fish like salmon swim up these estuaries where the barrages are and have already been killed by the turbines. The barrage also destroys homes to many birds, fish and other animals.²

Social Implications are another area to look at when thinking of a project as big as the building of a tidal barrage. The amount of people in the area would increase for a few years while being built. The LaRance tidal barrage in France took over five years to
build. Also the barrage would bring tourists and revenue to the area which will help the economy. There is also the idea of incorporating wind turbines into the barrage to generate extra power.2

The use of the ocean and its tides as an energy source is currently being further researched. The ocean is such a powerful tool if we can just figure out how to affectively channel its naturally occurring energy. It seems that we have just seen the tip of the iceberg when it comes to tidal power as a consumable energy source and that if we continue to research this idea that we may be able to discover its full potential. The first of the tidal barrages have only been around since the early 1900's and that really isn't that long in years being researched.2 Also, with technology continuing to increase in leaps and bounds who knows what we may come up with in the years to come.

If we step back and take a look at all of the energy sources that surround us in the world, water seems like it would be a great place to invest some research and time. We have an abundance of water on our plant and it naturally creates a ton of energy. I personally feel that in the future we can find ways to better use the oceans and tides as an energy resource. One idea that I feel can be looked into a little further is incorporating other consumable energies with the tidal energy. Like the idea of incorporating wind turbines into the barrages for extra power.2 The more ideas we can create and experiment with, the better are our chances of finding a consumable energy that will be used in the future in the United States. Just remember nothing lasts forever, but some things do last longer than others.
Works Cited


