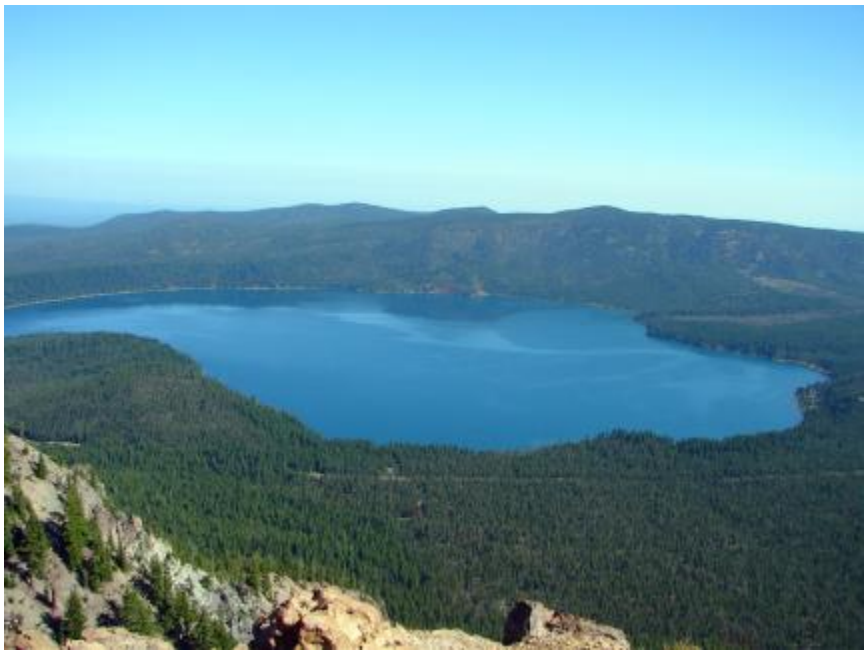
OREGON'S ELECTRIFYING VOLCANO

A volcano in Oregon may soon be providing electricity to the public. Newberry Volcano, located in central Oregon, is a large shield volcano (approx. diameter of 20 miles) composed mostly of basaltic rocks. However, the volcano has also erupted intermediate and felsic lavas in its past, such as andesite and rhyolite. The volcano is considered dormant, but as the last eruption was only about 1,300 years ago – a blink of the eye, geologically speaking – some still consider it potentially active.



Newberry Volcano Caldera (Image with permission under creative commons, by Craig Elliot, Flickr user Tjflex2)

How is a volcano going to create electricity, you ask? By pumping 24 million gallons of water deep into its side and capturing the hot water and steam generated, whereupon it will be sent through turbines at the surface to create electrical power. This process is commonly known as geothermal energy, a renewable resource which developers hope – by adding this volcano element – will be made economically competitive with the cheap (and booming) natural gas industry.

The companies conducting the study will be pumping 24 million gallons of water over 10,000 feet below the surface on the side of the volcano. Here, the cold water injected into the ground can be

heated by the hot rock which, in turn, is heated by an underlying magma chamber (only 2-5 km deep). When this water is heated, the steam is recovered to produce electricity (as explained above).

In order to efficiently heat the water, you can't just drill a hole straight down and pump water into the ground. This is where a process called *hydroshearing* comes in. Hydroshearing is a technique in which water is injected into the boring under high pressure in order to induce and enhance fractures within the rock. Once these fractures are in place, the cold water is injected into a newly created "reservoir" composed of this fracture network within the hot rocks. Now, hot water and steam can quickly and easily be recovered.

Does this process sound familiar? It should: it's nearly identical to hydraulic fracturing. You say po-ta-to, I say po-tah-to. The name change is (in my opinion) a political thing. There's too much bad press floating around the term "fracking", so they change the name to "shearing" and it's automatically more environmentally friendly. To be clear, hydroshearing *is* safer for the environment. The big difference here is that hydro*fracking* injects a large number of chemicals into the ground and hydro*shearing* doesn't.

If you're one of those worried about earthquakes induced by hydraulic fracturing, well then you should feel free to worry about these geothermal projects, too. However, you can read a previous post on hydrofracking to hear my stance on that issue. (Hint: Don't panic!)

In the end, it seems odd to me that nobody thought of this before. The exploitation of geothermal energy has been around for over a century, why wouldn't we go to a location where a heat source exists much closer to the surface, thereby making it easier and cheaper to utilize. Regardless, it seems the government and private sectors are interested in the project, investing over $40 million so far. I'm looking forward to seeing the results!

I know some of you who read this live in this region of the country and therefore will be much more directly affected by this than myself. What are your thoughts/concerns?

Thanks to my colleague, Jeff, for giving me a little inspiration for a new post by leavingthis article on my desk this morning! Please take the time to read it through and get some more details on the geothermal project at Newberry Volcano.

Source : http://adventuresingeology.com/2012/01/20/oregons-electrifying-volcano/