HOME

Portland's Electricity Comes from their Drinking Water: Here's How

By bestfolkmedicine · 21/02/2020 · 2 min read



The largest city in Oregon, Portland has teamed up with Lucid Energy to produce clean energy from their water flowing under its street and through their pipes.

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For the purposes of this project, they've replaced a part of their current water supply network with pipes from Lucid Energy that contain four 42-inch turbines.

As water goes through these pipes, the turbines spin and the power generators feed the energy back into the electricity grid of the city.

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This project is called Conduit 3 Hydroelectric and it's the first project in the US which secured a 20-year PPA for renewable energy acquired by in-pipe hydropower in a municipal water pipeline.

What Are the Benefits of this Technology?

According to Lucid Energy, this system can't be affected by external conditions like weather upon which other sources of renewable energy are reliant on, for example, solar and wind.

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The system doesn't have any negative effects on the surrounding ecosystem as it is completely enclosed in a pipe, which isn't the case with a hydroelectric dam.

The system is more than a provider of electricity- it can monitor the overall condition of the city's water supply network and assess the drinking quality of the water going through it.

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The device is expected to generate $2,000,000 worth of renewable energy over a period of 20 years, on the basis of an average of 1100 megawatt hours of energy per year or sufficient energy to power up 150 homes.

The money will be divided among the investors and used to recoup the construction costs and the ongoing upkeep.

After the 20-year-period, the Water Bureau of Portland will be eligible to own the whole project and subsequent energy and profit from it.

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Lucid Energy Operates in other Cities in the World

The company has installed hydropower pipes in several other cities worldwide, including Johannesburg in South Africa and Riverside, California.

The tech isn't being installed in all other US cities because the geography surrounding the city plays a crucial role in the usefulness of the hydropower.

Namely, Portland sources most of its water from Bull Run Watershed in the mountains above the city so the gravity does all the job of pulling the water down into the pipes and dispersing it throughout the city.

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It doesn't require additional electricity to pump it through. However, this isn't the situation in every municipal water supply system.

And, the replacement of the current infrastructure with Lucid Pipes costs and requires coordination between the electrical and water utilities of the city.

Stan Vande Berge, principal engineer at the Water Bureau of Portland said that their city is very energy conscious and they're always thinking of wise use of water.

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