

Motherboard

Bill Gates Is Beginning to Dream the Thorium Dream

By Brian Merchant

July 24, 2013

Mention thorium—an alternative fuel for nuclear power—to the right crowd, and faces might alight with the same look of spirited devotion you might see in, say, *Twin Peaks* and Chicago Cubs fans. People love thorium against the odds. Now, Bill Gates has given them a new reason to keep on rooting for the underdog element.

TerraPower, the Gates-chaired nuclear power company, has garnered the most attention for pursuing [traveling wave reactor](#) tech, which runs entirely on spent uranium and would rarely need to be refueled. But the concern [just quietly announced](#) that it's going to start seriously exploring thorium power, too.

“We’re thinking about it and trying to work on it and we have a few proprietary ideas that we’re cooking up,” John Gilleland, TerraPower's CEO, said in [an interview with the Weinberg Foundation](#). “We like to work on an idea for a while before we run out and tell about it – so we have some ideas which we’re trying to ferret out how good they are.”

He wouldn't say more, but Gilleland was talking about molten salt reactors, which are considered by many to be safer than the conventional pressurized water reactors currently operating in the United States—especially when they run on thorium. Gilleland said that their "big bet" remains on the traveling wave technology, but that thorium was definitely receiving some renewed attention.

[The American thorium dream](#)—which the United States government pursued in tandem with the uranium-fueled reactors we're familiar with now throughout the 60s—was more or less entirely burst in 1973. This despite the successful testing of a thorium-fueled facility, built at Oak Ridge National Laboratory, and some evidence suggesting that thorium was a safer, more abundant fuel—research was halted, and uranium-fueled reactors emerged as the standard.

Yet estimates place the amount of accessible thorium at around four times as much as uranium,

and it's less radioactive, too. Furthermore, thorium advocates point to the molten salt reactors that harness it—they use, as nuclear expert [Mark Halper notes](#), "use liquid fuel that cannot melt down and that harmlessly drains into a holding tank in the event of an emergency."



Wikimedia

For the above reasons, the alternate nuke juice is again drawing interest in the energy world, as the search for carbon-free power sources intensifies. China is [currently studying thorium power](#), using US-pioneered research as a jumping off point. India is [about to start building its own thorium nuke plant](#). And Norway just recently announced that [it's doing intensive testing at its new thorium facility this summer](#). Investors as diverse as Toshiba, Thor Energy, and South

Africa's Steenkampskraal Thorium Ltd are financing the project. Now Bill Gates, and his bottomless coffers, will begin funding the thorium dream, too.

Gates has been interested in energy innovation for years now; in [a widely-shared TED talk](#), he spoke about his traveling wave reactors, and the lack of experimentation in energy tech. He's previously funded research [into molten salt reactors](#), but this is the first time his team has explicitly stated that they're studying the fuel.

Last year, TerraPower hired a man named Jeff Lakowski to be its new Director of Innovation, and he started showing up at national thorium conferences (which are typically small but spirited affairs). Now he's made clear that Gates' team is [seriously pursuing the tech](#). It's not clear if any patents have been filed, or what innovations TerraPower is pursuing. Gilleland did say that they're not harkening back to the Oak Ridge model, as most ongoing thorium projects do—he said their plans have "considerable departures" from the old thorium standard.

What those departures may be remain to be seen—and in the meantime, they'll no doubt have the small legion of fervent thorium fans dreaming of a cleaner, safer nuclear technology with resurgent vigor.

Source URL:

<http://motherboard.vice.com/blog/bill-gates-is-beginning-to-dream-the-thorium-dream>

Date Retrieved:

July 25, 2013

© 2013 Vice Media Inc.