

Hydroelectric generator can be carried like a backpack

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The Backpack Power Plant collapses into a portable unit, with the generator, hub and folded blades stored inside. Credit: Bourne Energy.

Bourne Energy, a company based in Malibu, California, specializes in a variety of hydropower systems. While most of its technology is for large-scale applications, with multiple units generating energy on the megawatt scale, the company recently revealed a hydroelectric generator that is small enough that it can be worn as a backpack. Weighing less than 30 pounds, the Backpack Power Plant (BPP) can generate 500 watts of power from streams at least four feet deep.

Bourne demonstrated a militarized version of the BPP last week at the Cleantech Forum in San Francisco. Compared with the less rugged civilian version, the military version can generate 600 watts and weighs less than 25 pounds.

To install the mini hydro system in a stream, a person first digs two trenches on opposite sides of the stream and inserts a lightweight anchor into each trench. Then a rope is used to connect the anchors, and the hydropower plant is hung from the rope over (and into) the stream. The civilian version functions best in streams where the water is running at 2.3 meters per second, while the military version is designed to work with a variety of flow rates.

As Bourne [Energy](#) CEO Chris Catlin explained, the system's design is based on the high-tension mooring systems that hold up floating oil rigs. However, the military version can also be bottom-mounted to be completely invisible. Further, both versions can be set up in arrays to generate more than 30 kW of [power](#).

The civilian version will cost about \$3,000 when it goes into production. The company predicts that the biggest markets for the system may be in developing nations, as well as the military. Bourne Energy notes that the biggest advantage of the Backpack Power Plant is its ability to generate relatively large amounts of power as a portable device, especially when compared to other renewable technologies such as [solar cells](#).

“This can bring a cheap, highly portable [energy technology](#) to remote areas and remote villages,” Catlin said.

More information: BourneEnergy.com
via: [Wired Science](#)

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