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WORLDCHANGING

## Green Tech Watch: Principle Power

[Serena Batten](#)

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Alla Weinstein is convinced that the Pacific Northwest is a prime location for the development of ocean-based energy solutions. She has already succeeded in the [wave power](#) arena, having sold the [AquaBuOY](#), a floating structure that converts the kinetic energy of waves into electricity, to [Finavera Renewables](#). After that project, she couldn't wait to get back to the renewable energy drawing board.

She took her knowledge of floating structures above water level to focus on wind, founding [Principle Power](#) with Jon Bonanno. Principle Power aims to capture offshore wind energy, where winds are stronger and more reliable than those that blow on land. The technology they will use is called the [WindFloat](#), a floating structure built for deep waters of 50 meters or more. It's similar to those used by offshore oil rigs, but modified to support a wind turbine.

In November, the company announced that they had signed an agreement with the [Tillamook People's Utility District](#) to develop a 150 MW wind power plant off the coast of Tillamook County, Oregon. The project will start with a 10 MW pilot consisting of two turbines. The goal of the pilot is to demonstrate the viability, reliability and economics of the technology. The project will scale to proposed capacity of 150 MW in subsequent phases. Principle Power is currently finalizing the location, and then will apply for the required permits.

Weinstein describes Principle Power as a "product-plus" company, meaning that in addition to building and maintaining the product, they also manage the pre-development tasks. These tasks include site identification, permitting and licensing, coordination with utilities and power purchasers, as well as public outreach. Principle Power selects the best sites, measured by wind strength and reliability, permitting potential and water depth (50+ meters). Maine, the Northeast, the Great Lakes and the West Coast are target areas because they measure high in these categories. Many coastal areas in Europe also have excellent potential and are showing more rapid [adoption of offshore wind energy](#).

## Advantages of going offshore

Though the price tag of offshore wind energy is certainly higher than land-based alternatives, there are many benefits of taking the installation out to sea. The winds that blow on the open ocean are much stronger, and can be predicted with 90 percent accuracy a couple days in advance, making planning efforts much easier. Since the installations are a significant distance from the coastline, they do not interfere with the natural habitat of coastal birds and animals, minimizing the impact on local environments. Nor is the installation visible from the coast, reducing the "not in my backyard" response that plagued the [Cape Wind](#) project in Massachusetts. Weinstein hopes that Americans will come to welcome wind towers as a sign of progress, instead of viewing wind towers as "visual pollution." (Having spent months in southern Spain, I agree with her -- there is something so much cleaner and promising about wind turbines on the horizon than smokestacks.)

## Challenges abound

Economic times are rough. Companies are seeing revenues decrease, and start-ups are struggling to find financing. Weinstein remains hopeful despite these troubles. She believes that we are at a point where enough people are convinced that climate change is real, and man-made, and that they are committed to creating change. She can see that there is investor interest in renewable energy development despite the economic downturn and credit crunch. Weinstein is confident that the new Obama administration will help expedite this change, given its strong support for energy efficiency, smart grids and renewable energy. [Here at Worldchanging, we are hopeful](#) as well.

Developing renewable energy technologies is costly. This high cost, coupled with low energy rates in states such as Washington, makes it difficult to create a profitable business model and attract new ventures to the field. States such as Oregon have already been proactive about providing financial incentives to renewable energy projects in the form of grants or tax incentives. These incentives are critical to offset the high start-up costs that act as a barrier to renewable energy development. Other states -- Washington included -- do not currently provide such incentives. This issue contributed to Principle Power's decision to target sites in Oregon for development.

## Next steps

Looking ahead, Principle Power is exploring ways to utilize the WindFloat platform to capture wave energy in addition to the wind energy captured by the turbine, maximizing the total output of each unit.

"We need clean energy and we need it in many forms," says Weinstein. Like many of us, she sees the need for rapid development of renewable energy, and the need to diversify the types of systems developed to match regional needs and resources. "Principle Power is just one of the many solutions to the problem," says Weinstein, "and it will take many different types of renewable energy companies to make a difference."

*Worldchanging Seattle's Serena Batten will be covering emerging local leaders in clean tech in her series, "Green Tech Watch." Serena has worked in Seattle's technology and finance industries for more than ten years, and is currently pursuing her MBA in technology management at the University of Washington.*

Photo source: [Principle Power](#)

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