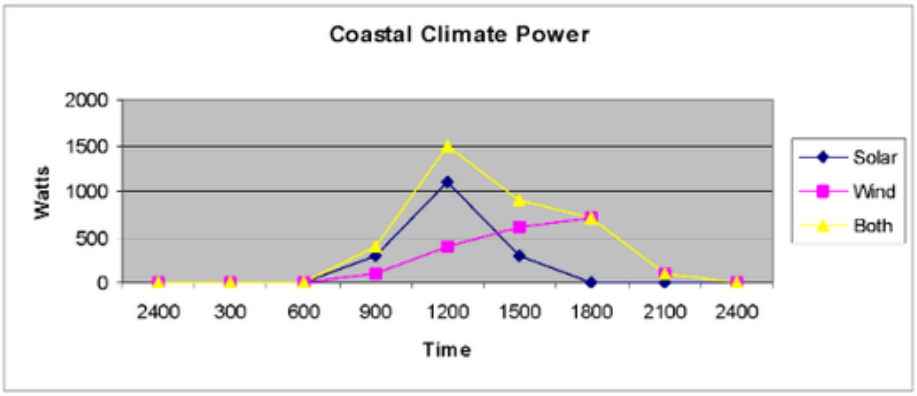
THE CASE FOR SMALL WIND TURBINES ON THE GRID

The most important use of small distributed energy in any area is to relieve peak power requirements. Peak power is that one hour per day in the summer when all air conditioners and offices are operating, and the power consumption is way above the average for the year. The utility has to meet that power consumption without blackouts. Making a new power plant costing huge amounts of money for that one day per year creates a huge financial burden for the consumer and the utility to build a system that rarely operates.

Therefore, most utilities are willing to pay subsidies to enable many small points of additional renewable energy to contribute to the grid. It also has the benefit of making the air cleaner.

So what is the best way to accomplish that? In general, in coastal areas, the distributed power source that most closely matches peak power use is wind. Wind accelerates towards the late afternoon when the air conditioners are working hardest and people are coming home and using the electricity in their houses for dinners, laundry, etc., while most office buildings are still open. A combination of solar and small wind power provides wider coverage throughout the day as the following chart of two separate 2-kilowatt systems for solar and wind on a typical spring day shows. Therefore, solar and small wind in the right proportion, which would likely be 70% wind, are much better than either energy source by itself and would produce renewable energy to match peak needs.



So far, utilities have mostly made use of rooftop solar, even though it is not as good a match for peak power as wind, for a number of reasons. One is that wind turbines need to be separated at a distance and don't make good use of limited roof space.

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Flower Turbines has patented and patent pending turbines with a patent pending cluster effect. At the right distance, close to each other, one improves its neighbor by 20% by creating wind tunnels. This changes the economics of small wind and makes it much more useful for rooftops. We call it More Zoom in Less Room ™.

They also start at lower speeds. Most wind turbines start at 3 meters per second wind; the Tulips start at 1.2.

The turbines are beautiful, quiet, and safe for birds, but their aerodynamics is what enables them to change our perspective on the role of small wind turbines in the grid. Imagine what it would be like if solar panels could improve their neighbors!

Another consideration is that most microgrid projects use solar plus a lot of batteries to make sure there is reliable electricity when the sun doesn't shine—at least 50% of the time. Solar plus wind plus fewer batteries should be cheaper because of the reduction of uncertainty from several consecutivecloudy days.

We invite you to join us in encouraging our small wind technology to take its rightful place in the grid's energy mix to make a cleaner environment that prevents building more large power plants.