



Good news from Italy: the Kitegen is in motion

Posted by [Ugo Bardi](#) on October 3, 2010 - 4:01pm in [The Oil Drum: Europe](#)

Topic: [Alternative energy](#)

Tags: [innovation](#), [kitegen](#), [renewable energy](#), [robotics](#), [wind power](#) [[list all tags](#)]



Massimo Ippolito, president of KiteGen Research (KGR) s.r.l poses in front of parts of the prototype being built near Torino, in Italy. The Kitegen is an ambitious and innovative research project that promises a high efficiency in energy production

I am just back from a trip to Piedmont, Northern Italy, where I have visited the construction site of the new prototype of the Kitegen; the high altitude wind power (or "Airborne Wind Energy", AWE) system being developed by Kitegen Research s.r.l., headed by Massimo Ippolito. I can bring good news to you: the kitegen project is in motion and a full size prototype of the system is being completed.

The Kitegen is a very innovative technology based on the idea of capturing the abundant energy of high altitude winds. It uses a kite that is launched from a ground based structure that contains all the machinery and control systems. The kite is expected to fly at altitudes up to 2000 meters and to provide energy by pulling on a set of cables that act on a power generator.



The promise of the kitegen is remarkable; preliminary calculations indicate an EROEI better than anything that can be obtained by traditional wind or solar technologies. However, one thing is paper, another is the reality of putting together a machine that had never been built before. It is an incredible challenge that Massimo Ippolito has taken onto himself and that he is succeeding in overcoming; step by step.

The challenges facing new technologies are not just technical. The main problems are with bureaucracy and with the general attitude of a society which is becoming more and more hostile to innovation. This attitude has forced Kitegen Research to abandon the initial plans of building the first prototype near the town of Berzano, not far from Torino, in Italy. A small group of local residents has been extremely active in harassing the project; to the point that, eventually, the company had to choose another site. That has generated almost one year of delay; since everything had to be moved to the new site and a new set of permits had to be obtained. However, now everything is ready with the new site: all the parts needed for the prototype have been manufactured and the permits are all available. The construction of the new prototype has already started, as you can see in the picture below that shows the structure of the dome that will house all the ground based parts of the system. In the picture, you can also see the modest me (Ugo Bardi), left in the picture, together with Mr. Mario Marchitti of Kitegen Research.



The technology that has been developed for the kitegen is impressive: it is an extremely modern approach which is based on keeping costs low by using simple and inexpensive materials. For the structural parts on the ground, the system uses only aluminium, steel and carbon fiber. Dyneema (high strength polyethylene) is used for the cables that control the kite. The power generator is based on neodymium-boron-iron magnets. The key element of the system is in its sophisticated software that controls everything and that makes it possible to use a relatively simple design. This is a typical characteristic of modern robotics and the kitegen is, actually, a robot that controls the system in real time on the basis of an array of sensors; some of which are located on the kite, some on the ground.

So, things are moving on with the kitegen. In a couple of months, the system should be completely assembled; then it will be time to start flying tests.

Links to more information

The site of Kitegen Research: www.kitegen.com

[High altitude wind power: an era of abundance?](#) by Ugo Bardi

[High altitude wind power II](#) by Ugo Bardi

[The site of the AWE community](#)

Disclaimer: I have invested a modest amount of money in Wind Operations Worldwide (WOW) a company that collects fund from small investors who are interested in financing the development of the kitegen



This work is licensed under a [Creative Commons Attribution-Share Alike 3.0 United States License](http://creativecommons.org/licenses/by-sa/3.0/).