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## Wind Energy's Ghosts

By [Andrew Walden](#)

Bankrupt Europe has a lesson for Congress about wind power.

*Wiwo...wiwo...wiwo.*

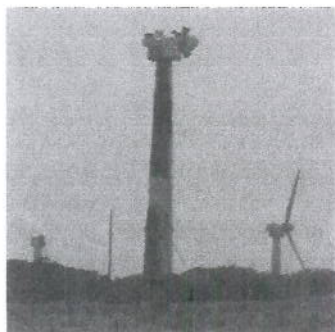
The sound floats on the winds of Ka Le, this southernmost tip of Hawaii's Big Island, where Polynesian colonists first landed some 1,500 years ago.

Some say that Ka Le is haunted -- and it is. But it's haunted not by Hawaii's legendary [night marchers](#). The mysterious sounds are "Na leo o Kamaoa"-- the disembodied voices of 37 skeletal wind turbines abandoned to rust on the hundred-acre site of the former [Kamaoa Wind Farm](#).

The voices of Kamaoa cry out their warning as a new batch of colonists, having looted the taxpayers of Spain, Portugal, and Greece, seeks to expand upon their multi-billion-dollar foothold half a world away on the shores of the distant Potomac River. European wind developers are fleeing the EU's expiring wind subsidies, shuttering factories, laying off workers, and leaving billions of Euros of sovereign debt and a continent-wide financial crisis in their wake. But their game is not over. Already they are tapping a new vein of lucre from the taxpayers and ratepayers of the United States.

The Waxman-Markey Cap-and-Trade Bill appears to be politically dead since Republican Scott Brown's paradigm-shattering Massachusetts Senate victory. But alternative proposals being floated by Senator Byron Dorgan (D-ND) and others still promise billions of dollars to wind developers and commit the United States to generate as much as 20% of its electricity from so-called "renewable" sources.

The ghosts of Kamaoa are not alone in warning us. Five other abandoned wind sites dot the Hawaiian Isles -- but it is in California where the impact of past mandates and subsidies is felt most strongly. Thousands of abandoned wind turbines littered the landscape of wind energy's California "big three" locations -- Altamont Pass, Tehachapi, and San Geronio -- considered among the world's best wind sites.



Built in 1985, at the end of the boom, Kamaoa soon suffered from lack of maintenance. In 1994, the site lease was purchased by Redwood City, CA-based Apollo Energy.

Cannibalizing parts from the original 37 turbines, Apollo personnel kept the declining facility going with outdated equipment. But even in a place where wind-shaped trees grow sideways, maintenance issues were overwhelming. By 2004 Kamaoa accounts began to show up on a Hawaii State Department of Finance [list](#) of unclaimed properties. In 2006, transmission was finally cut off by Hawaii Electric Company.

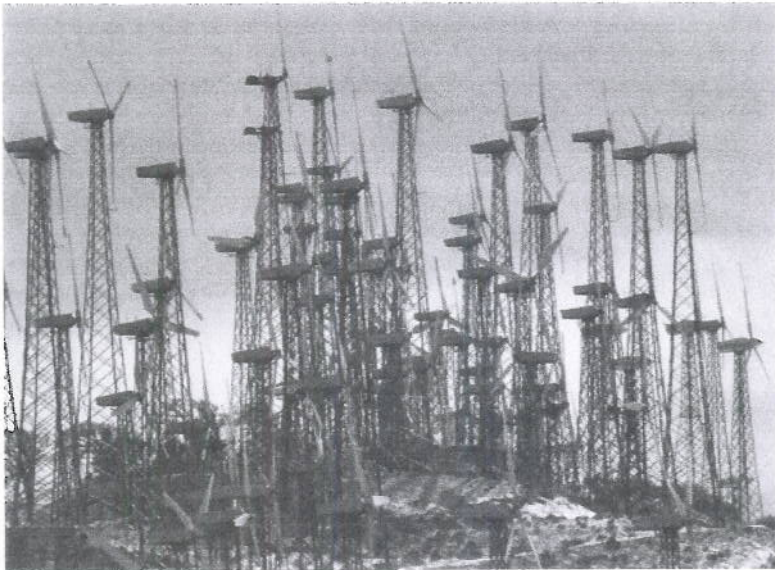
California's wind farms -- then comprising about 80% of the world's wind generation capacity -- ceased to generate much more quickly than Kamaoa. In the best wind spots on earth, over 14,000 turbines were simply abandoned. Spinning, post-industrial junk which

generates nothing but bird kills.

The City of Palm Springs was forced to enact an ordinance requiring their removal from San Geronio. But California's Kern County, encompassing the Tehachapi area, has no such law. Wind Power advocate Paul Gipe, who got his start as an early 1970s environmental activist at Indiana's Ball State University, describes a 1998 Tehachapi tour thusly:

"Our bus drove directly through the Tehachapi Gorge passing the abandoned Airtricity site with its derelict Storm Master and Wind-Matic turbines and the deserted Wind Source site with its defunct Aeroman machines. We also got a freeway-close glimpse of Zond's wind wall with its 400 Vestas V15 turbines, the former Arbutus site on rugged Pajuella Peak where only the Bonus turbines are still in service, and steep-sided Cameron Ridge topped with FloWind's few remaining Darrieus turbines before reaching SeaWest, our first stop.

"As we approached SeaWest from the desert town of Mojave, the old Micon 108s were spinning merrily, but the Mitsubishis with their higher start-up speed were just coming to life. SeaWest and Fluidyne had done a commendable job of cleaning the Mitsubishis of their infamous oil leaks for the tour's arrival."



Tehachapi's dead turbines  
(image via [webecoist](#), [sky#walker](#); [Center for Land Use Interpretation](#); [Terminal Tower](#))

Writing in the [February, 1999](#) edition of *New Energy*, Gipe explains:

From 1981 through 1985 federal and state tax subsidies in California were so great that wealthy investors could recover up to 50 percent of a wind turbine's cost. The lure of quick riches resulted in a flood of development using new and mostly untested wind turbines. By the end of 1986, when projects already underway in 1985 were completed, developers had installed nearly 15,000 wind turbines. These machines represented 1,200 MW of capacity worth US\$2.4 billion in 1986 dollars.

It took nearly a decade from the time the first flimsy wind turbines were installed before the performance of California wind projects could dispel the widespread belief among the public and investors that wind energy was just a tax scam.

[Ben Lieberman](#), a senior policy analyst focusing on energy and environmental issues for the Heritage Foundation, is not surprised. He asks:

"If wind power made sense, why would it need a government subsidy in the first place? It's a bubble which bursts as soon as the government subsidies end."

After the collapse, wind promoters had a solution to their public image problem. Hide the derelict turbines. [Gipe in 1993](#) wrote for the American Wind Energy Association:

Currently most of the older, less productive wind turbines are located within sight of major travel corridors such as I-580 and I-10. Many first generation turbines and some of the second generation designs are inoperative, and all turbines of these generations are more prone to mechanical failure than contemporary designs. Public opinion surveys have consistently found that inoperative wind turbines tarnish the public's perception of wind energy's efficacy."

Gipe then quotes a 1991 UC Davis study, which explains:

"Our research and that of others show that turbines' non-operation and public fear of wind farm abandonment is still a critical issue, and it therefore behooves the wind industry to return to the 'big three' wind farm sites (Altamont, San Geronio, and Tehachapi) and to ensure that these areas are operating as efficiently as possible, and all turbine arrays which do not contribute significantly and conspicuously to power production are either replaced or, if necessary, removed."

Altamont's turbines have since 2008 been tethered four months of every year in an effort to protect migrating birds after environmentalists filed suit. According to the Golden Gate Audubon Society, 75 to 110 Golden Eagles, 380 Burrowing Owls, 300 Red-tailed Hawks, and 333 American Kestrels (falcons) are killed by Altamont turbines annually. A July, 2008 study by the Alameda County Community Development Agency points to 10,000 annual bird deaths from Altamont Pass wind turbines. Audubon calls Altamont, "probably the worst site ever chosen for a wind energy project." In 2004 the group unsuccessfully challenged renewal applications for 18 of 20 Altamont wind farms.

From its beginnings as a slogan of the anti-nuclear movement, wind energy has always been tied to taxpayer support and government intervention. Wind farms got their first boost with the Carter-era Public Utility Regulatory Policies Act of 1978 (PURPA) which encouraged states to enact their own tax incentives. PURPA also for the first time allowed non-utility energy producers to sell electricity to utilities -- the first step towards a bungled half-privatization of electricity supply which would come two decades hence.

In the 1985 book "Dynamos and Virgins" a San Francisco based PG&E utility heir tells the story of how he joined forces in the 1970s with lawyers from the Environmental Defense Fund. Together they worked for years to obstruct coal and nuclear power plants until utilities were forced to do business with wind energy suppliers.

Protest and litigation remain among the foremost competitive tools used by the now multi-billion dollar "alternative" energy industry. Reviewing the book, Robert Reich, a Kennedy School of Government professor who would later become Clinton's Secretary of Labor, wrote:

"The old paradigms of large-scale production, centralized management, and infinite resources are crumbling. We are on the verge of a new political economy."

The new paradigm created by the generation of 1968 is more political and less economy. Without government intervention, utilities normally avoid wind energy. Wind's erratic power feed destabilizes power grids and forces engineers to stand by, always ready to fire up traditional generators. Wind does not fit into an electric supply model made up of steady massive low cost "base load" coal or nuclear plants backed up by on-call natural gas powered "peaker" units which kick in during high demand. No coal or nuclear power plant has ever been replaced by wind energy.

Although carbon credit schemes often assign profitable carbon credits to wind farm operators based on a theoretical displacement of carbon emitted by coal or natural gas producers, in reality these plants must keep burning to be able to quickly add supply every time the wind drops off. The formulae do not take into account carbon emitted by idling coal and natural gas plants nor the excess carbon generated by constant fire-up and shut down cycles necessitated to balance fluctuating wind supplies.

But with PURPA on the federal books, the State of California quickly created "Interim Standard Offer" (ISO4) contracts guaranteeing a purchase price based on utilities' "avoided costs"--launching the first "California Wind Rush". By 1982 turbines were sprouting from the dusty terrain of Altamont Pass, Tehachapi, and San Geronio. The ISO4 contracts were written with the assumption that fuel prices would continue to soar.

But that's not what happened.

By 1985 oil and natural gas prices were dropping. This changed the "avoided cost" calculations to the disadvantage of alternative energy producers. ISO4 contracts no longer guaranteed a price sufficient to attract investment in wind energy. Construction of new turbines stopped. As the old ten-year contracts began to expire in the late 1980s, renewals were pegged at much lower avoided cost estimates. As a result, many California wind developers quickly closed up shop, abandoning their turbines to moan out the one note song.

Then Enron got involved.

Building on the foundation laid by PURPA, 1992 Energy Policy Act (EPAAct) began the partial deregulation of wholesale -- but not retail -- electricity. Reich in 1985 had lauded the "crumbling" of "large-scale production (and) centralized management". He got his wish. EPAAct set the stage for Enron's California energy market manipulations which led to the 2003 recall of Governor Gray Davis (D-CA). The movement started by a PG&E heir led to the bankruptcy of PG&E. Perhaps this is why some call the children of the 1960s "the destructive generation."

Designed to create a renewable energy trading market, EPAAct -- much of which took effect in 1997 -- created a combination of mandates, incentives, and tax credits. These included:

- laws requiring large wind producers to be allowed to tie into the existing utility grid
- "Renewable Portfolio Standards" forcing utilities to buy intermittent wind generated electricity.
- "Renewable Energy Certificates" tradable separately from the electricity itself to sell to companies needing to meet the portfolio standards.
- A 10-year "Production Tax Credit" that now equals \$.019/kWh
- Accelerated depreciation allowing tax write-off using an accelerated 5-year double-declining-balance method (40%

per year).

Wind capacity had stagnated through the mid-1990s. But Enron in January, 1997 bought out Tehachapi-based industry leader Zond Corporation - launching the second California Wind Rush.

Four years later, Enron would implode. The company which gamed a government-crippled artificial marketplace was deconstructed as poster boy for unbridled capitalism.

But the tax credits, mandates, and regulations which made Enron possible did not die with it. Enron Wind's turbine manufacturing subsidiary was purchased by General Electric. Many of its wind farms went to Florida Light and Power. By 2009, the US Department of Energy estimates mandate-and-subsidy-driven wind capacity would rise to 28,635mw.

That much coal or nuclear "capacity" would power 28.635 million homes, but wind "capacity" is calculated assuming perfect wind 24 hours a day, 365 days of the year. At the best wind sites, such as Kamaoa, newly installed turbines generate only 30-40% of "capacity". At most sites, the figure is 20% or less. After 30 years of development, wind produces only 2.3% of California's electricity.

And then there is maintenance. The turbines installed in the first wind rush were not very reliable. Some never worked at all. As the years passed and the elements took their toll, downtime climbed ever closer to 100% and production dwindled to negligible amounts. Developers often set malfunctioning turbines to "virtual" mode -- blades spinning without generating electricity -- in order to keep oil circulating inside the turbine drive. Of course this habit also gives passing drivers an illusion of productivity.

Wind developers claim that today's American and European-made turbines are more reliable and longer-lasting than their old-tech predecessors. But new Chinese turbine manufacturers of untested quality are crowding the marketplace Europe's subsidy-driven turbine meisters are chased from their home markets.

After the debacle of the First California Wind Rush, the European Union had moved ahead of the US on efforts to subsidize "renewable" energy--including a "Feed in Tariff" even more lucrative than the ISO4 contracts. EU governments provided government-backed securities to support utilities burdened by Feed-in Tariff costs. But last year, as the national debt of wind-intensive EU countries became unbearable, the EU subsidy bubble burst.

Wind maven Gipe proudly takes a page from the disastrous European playbook, crediting himself with "Almost single-handedly launch(ing) a campaign for Advanced Renewable Tariffs (electricity feed laws) in North America."

But addressing a Heritage Foundation seminar last May, Dr. Gabriel Calzada, Professor of King Juan Carlos University in Madrid explained what Feed In Tariffs and other wind subsidies did to Spain (as well as Portugal and Greece) got into debt:

"The feed-in tariff... would make (utility) companies go bankrupt eventually. So...the government guarantees...to give back the money in the future -- when (they) are not going to be in the office any more. Slowly the market does not want to have these securities that they are selling. Right now there is a debt related to these renewable energies that nobody knows how it is going to be paid -- of 16 Billion Euros."

In early 2009 the Socialist government of Spain reduced alternative energy subsidies by 30%. Calzada continues:

"At that point the whole pyramid collapsed. They are firing thousands of people. BP closed down the two largest solar production plants in Europe. They are firing between 25,000 and 40,000 people...."

"What do we do with all this industry that we have been creating with subsidies that now is collapsing? The bubble is too big. We cannot continue pumping enough money. ...The President of the Renewable Industry in Spain (wrote a column arguing that) ...the only way is finding other countries that will give taxpayers' money away to our industry to take it and continue maintaining these jobs."

That "other country" is the United States of America.

Waxman-Markey seems dead, and Europe's southern periphery is bankrupt. But the wind-subsidy proposals being floated in Congress suggest that American political leaders have yet to understand that "green power" means generating electricity by burning dollars.

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