"Green Power": How Real Is It?

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ABSTRACT

As with many other issues arising in the competitive energy marketplace, understanding "green power" activities puts you on a learning curve. Getting up to speed on green power now will help you cut through the hype and avoid feeling later like you've been "had" by clever marketing.

Despite its various problems, deregulation of electricity has created a resurgence of interest in renewable energy sources (hydroelectricity, wind, geothermal, biomass, and solar photovoltaics). Such sources generate power with little, if any, of the usual power plant pollutants (NOx, SOx, particulates) and a major reduction (if not elimination) of the carbon dioxide that contributes to global warming. While some nuclear advocates try to make the same claim for atomic power, it is not comparable due to the significant input of fossil fuel energy needed to enrich uranium fuel prior to its use in a nuclear plant. In the US, nearly all such enrichment is done using coal-based power.

WHAT'S BEHIND THIS NEW INTEREST?

Many power customers would like to be able to say that they have made a positive contribution to cleaner air by directing that part (or all) of their power come from environmentally friendly (often called "green") power sources. Doing so may provide personal satisfaction, positive karma, fulfillment of societal goals, or a polished cor-

porate/public image. The State of New Jersey, for example, hopes to improve its environmental reputation (often associated in the past with toxic waste and pollution) by buying most of the power for its government buildings from green sources, even though it is paying roughly 20% more for it.

Several retail power marketers (such as Green Mountain) have focused on green offerings, while others have offered a variety of what could best be called "olive drab," "aquamarine," or other not-quite-green mixes of renewable and fossil-fueled power. Such options have appealed to a significant portion (as high as 20% of residentials in one area) of power customers. Based on this demand, a few still-regulated utilities (e.g., Minnesota Power Co.) now offer power packages with defined renewable contents. Some deregulation laws also require utilities to generate or secure a small portion of the power they supply from green sources.

To further boost the development and sales of renewables, Uncle Sam and some state and city governments (especially in supply-constrained areas such as California and New York) have passed laws requiring a portion of their own buildings' loads be satisfied by renewable energy. Governments are often the largest single power customer in a control area due to the size and number of military, police, health, prison, municipal, transit, water treatment, and school facilities. Federal buildings are now required to eventually purchase 10% of power from green sources, while New York State is requiring 20% of the power used in its buildings to come from renewables in several years.

HOW REAL IS IT?

All electricity (except that generated on-site) is combined in transmission pools that make it impossible to allocate power from a specific source to any one user. Some renewable sources (mainly hydro and geothermal) have been in use for decades. Merely shuffling the accounting over who is paying for what source does nothing to increase the amount of renewable power being generated, and therefore have any actual environmental impact. In some parts of the country (e.g., the Northwest), hydro already dominates the total power supply, so many customers are already buying significant amounts of green power, whether or not they want to.

When the first green offerings appeared in California, a great deal of criticism was leveled at their promoters, and the term "snake oil" was often heard. In late 1998, the watchdog group Public Citizen issued "Green Buyers Beware," an expose of early green electricity products. That study is still a handy guidebook for power purchasers. Its executive summary may be found at *http://www.citizen.org/press/greenreport.htm*.

To try to cope with that issue, several organizations developed mechanisms to verify or critique green offerings. Eventually, the Green-E certification program emerged as the standard for qualifying the renewable content of specific offerings. To see how that methodology works, go to: *http://www.green-e.org*. To compare existing green power products, go to *http://www.edf.org/programs/energy/green_power/c_providers.html*.

When demand for green power exceeds the supply, however, new renewable generation is likely to be created. A sustained customer demand and regulatory edicts could help ensure the continuity of such a market. Doing so should reduce the risk of investing in renewable power plants, increase available capital for financing them, and further enhance competition. Since 1999, investment in and acquisition of green power technologies has blossomed. While new hydro resources are limited, wind turbine technology is being exploited in ever-larger wind "farms," with several in the 50-120 MW range. Various merchant power developers are siting such facilities in the Plains States and Texas.

On a smaller scale, landfill gas installations (some using microturbines) in the 1 MW range have appeared in Los Angeles and other cities, while some new buildings (e.g., Four Times Square in New York City) are experimenting with solar photovoltaic (PV) panels for a small part of their power. To further prime the pump, both California and New York are now offering extraordinary incentives (as high as $6,000 per installed kW) for new PV systems. For a glimpse at how green power is handled at the power trading level, go to *http://www.apx.com/sHome_html/faq.html*.

WHAT DOES IT COST?

Premiums of 10-20% over the cheapest alternative power have been typical for green offerings, though some have been higher (50% has been seen) and some lower. Potential buyers should be wary

when a zero premium is claimed. In several cases, that has meant the so-called "lowest" price used as a comparison was too high.

When trying to "sell" this extra cost, it is important to understand that the only way your money will actually increase the amount of green power (and thus have any real impact on the environment) is by making or expanding a new market in which use of existing (or future) fossil-fueled plants is displaced. That's not an overnight process, so a one-year contract for green power may not have much of an impact.

GETTING DOWN TO BUSINESS

When it comes to the national power supply, green power is still only a drop in the bucket. These efforts are, however, beginning to make viable the specification of green power at the retail level. Before going down this road, however, consider other ways to achieve the same ends. A 10% premium on a $1 million electric bill could, for example, cover $100,000 a year in professional public relations to improve your firm's image in more traditional ways. And if you have $ 100K per year to bum, why not instead hire an on-site energy manager to measurably reduce your actual energy use and costs? Doing so will also likely generate bottom-line profits, which green power can never do.

On the other hand, let's assume you've already upgraded your lighting, motors, A/C, EMS, and process loads. If you can afford some extra karmic points, or really want to satisfy a line in your firm's mission statement, green power may be the ticket. And if enough of it gets built over the next few decades, maybe we won't have to build a 50-foot sea wall around Florida.

Energy procurement professionals may wish to start their investigation of this option with an introduction to green energy, such as that found at *http://www.repp.org/greene/greeneduhome.html*. A general site for discussion, news, and links on the issue may be found at *http.//wwwgreen-power.com*. Additional good advice may be found at the other Web links on this page.

To see how others have approached the procurement of renewable energy, go to *http://www.thegreenpowergroup.org*. At that site, the World Resources Institute lays out its process for getting some For-

tune 500 firms to sign up for a group purchase of green power. That site also has excellent links to other sources (both private and public) of information on existing green power markets in the US.

As with any new energy widget or service, always recall the warning *caveat emptor* (i.e., let the buyer beware). Not only is there a potential to get nothing for your money, but you could also end up making public claims that cannot later be supported against an accounting challenge. As a result, customers considering specifying green power in Requests For Proposals (RFPs) or bids should be clear regarding how the vendor will prove the green content of his offering, and what will happen if the renewable resources cease operation (i.e., the price should drop if there was a green premium).

As with many other issues arising in the competitive energy marketplace, there is a learning curve. Getting up to speed on green power now will help you cut through the hype and avoid feeling later like you've been had by clever marketing.

This article originally appeared as one of Mr. Audin's "Tips of the Month" commentaries. More can be found at www.energybuyer.org. See www.energywiz.com and www.energyseminars.com for more information.

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Audin has been named Energy Manager of the Year by three different national or regional organizations, most recently by the Association of Professional Energy Managers in 1995. In 1993, the Association of Energy Engineers (AEE) named him their International Energy Manager of the Year, and in 1996 inducted him into its Energy Manager's Hall of Fame, the highest recognition in that field.

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