

# Online Auctions Drive Down Energy Costs for Public Entities

By conducting “reverse” auctions over the Internet, government agencies can award large-scale energy contracts to the lowest bidder and reap big savings

By Ginger Juhl

During 2005, various factors converged to fuel all-time highs for energy costs. The impact of increased prices for gas and oil affects all consumers of energy, including residents, businesses, and government agencies.

Throughout the public sector, increases in energy prices can severely strain already cash-poor coffers. However, on a positive note, today’s technology can offer creative ways to mitigate the impact of surging power costs, particularly in states where deregulation allows government agencies to shop for suppliers willing to compete for business. For instance, various government agencies are logging on to Internet-based “reverse” auctions, whereby buyers post their energy needs online, and suppliers bid against one another to win a specific contract.

Opposite criteria separate traditional auctions from reverse auctions. With traditional auctions, a supplier offers an item for sale, and potential buyers compete with each other for the purchase. The price rises steadily, until no buyer is willing to bid a higher price, and the item is awarded to the highest bidder on record. In contrast, reverse auctions involve multiple sellers of products. In the case of energy, sellers supply a commodity and compete for the business of a single buyer. Therefore, the price continues to decrease during the course of a pre-established bidding period. The energy contract is then awarded to the supplier offering the lowest bid.

By conducting reverse auctions, many government agencies have saved millions of dollars in energy costs.

## Today’s Energy Reality

While news coverage would lead many to believe that Hurricane Katrina is largely to blame for crude-oil prices reaching nearly \$70 a barrel, further analysis shows that energy markets were strained long before Katrina by a combination of local and global factors. Reasons include imbalances between high demand and limitations in production capacity, hot summers, cold winters, instability in oil-producing nations, and increased energy demand by nations such as China.

After Hurricane Katrina hit, consumers felt oil prices immediately surge at the gas pump, when prices increased during a one-week period by as much as 61 percent. Faced with record-high gasoline prices, consumers are now confronted with the prospect of a painfully expensive home heating season, as utility companies brace customers for rate increases as much as 45 to 90 percent higher than last year’s rates.

Even before crude-oil prices began skyrocketing, state and local governments spent more than \$11 billion annually on fixed-site energy costs.

Moreover, the federal government is the nation’s single largest consumer of energy, with annual expenditures topping more than \$8 billion. Of this figure, more than \$4 billion is spent to heat, cool, and power an estimated 500,000 buildings owned or operated by federal agencies.

A year ago, energy bills consumed up to 10 percent of annual operating budgets for government entities. Today, the figure is considerably higher.

Along with the rise in energy prices, so does the impact on government costs and operations from several directions. For example, escalating energy costs for heating and operating government facilities must be paid for either through tax increases or by diverting funds earmarked

for other expenditures. In addition, when surging energy prices reduce consumers' expendable income, revenue from sales taxes declines. Instead of spending money on tax-generating purchases, consumers are paying home heating bills, and state governments feel the pinch in decreased revenue.

As Federal Reserve Chairman Alan Greenspan noted in an October 2005 speech, "Although the global economic expansion appears to have been on a reasonably firm path through the summer months, the recent surge in energy prices will undoubtedly be a drag from now on."

### Energy Prices Usher Widespread Budget Woes

Local, state, and federal agencies across North America are already feeling the drag effect from rising energy costs.

According to the Energy Information Administration (EIA), a federal agency under the U.S. Department of Energy (DOE), the United States will spend \$1.08 trillion on energy costs during 2005. This figure is 24 percent higher than last year's total and represents 8.7 percent of the annual gross domestic product. Because of these substantial figures, even a small increase or decrease in energy costs can have a large financial impact on government budgets.

In Connecticut, rising fuel prices are expected to push state government energy costs over budget by anywhere from \$23.5 million to \$42 million, according to a report released October 13, 2005, by the state's budget office.

Utility companies in various states have initiated price increases. For instance, Massachusetts Electric Co. requested a 28 percent increase in electric rates starting in November 2005—the largest increase sought by an electric utility in the state for at least 25 years. In New Hampshire, regulators approved an unprecedented rate increase of 60 percent for Unital's largest customers, starting in November 2005. In addition, Wisconsin Public Service Corp. asked for an electric rate increase of 17.1 percent within its service area.

Natural-gas prices are also on the rise. For instance, Pacific Gas and Electric Co. warned that home heating bills for northern California residents would leap 70.8 percent as natural-gas prices increase nationwide. In Colorado, energy consumers will face a jump of 33 percent from last year in combined monthly costs for electricity and natural-gas heating.

Although natural-gas prices have dropped from their October 2005 highs, they are still significantly

more than just a year ago. Both gas and electric prices are expected to remain volatile. As a result, rapid price escalations, such as those experienced during 2005, can be very difficult to plan and budget for.

In general, gas prices will increase with rising crude-oil prices, while cost increases for electric power will be driven by the way in which each utility generates energy sources. Currently, electricity generated by gas-powered facilities will

## Federal Powerhouse Boosts Energy Savings



By playing a strong, innovative role to procure energy online, the U.S. General Services Administration

(GSA) has obtained a wealth of savings. The agency serves as the massive procurement arm of the federal government and boasts an annual budget of \$18 billion. Within the GSA, approximately 14,000 employees spearhead the acquisition of government supplies, services, and space. Responsibilities include procuring energy for a multitude of facilities, owned or operated by the GSA.

In June 2001, the GSA's Energy Center of Expertise conducted its first reverse auction to purchase \$165 million in electricity. The auction was held through the World Energy Exchange, an online tool that unites energy buyers with suppliers. Spanning six utility service territories in the state of New York and involving 20 competitive electricity suppliers, 10 qualified agencies, and an estimated 600 accounts, the auction invited suppliers to bid on an estimated 624,000 megawatt-hours (mwh) of annual electricity requirements.

"This first reverse auction using the World Energy Exchange was a prototype for GSA to test the auction's ability to achieve the most competitive market price," says Linda Collins, National Energy Contracting Officer for the GSA.

The auction resulted in price reductions for the GSA and its customers of an estimated \$24 million in one utility service territory alone. In some cases, a

35 percent difference separated the highest and lowest bids, representing many millions of dollars in savings.

Because of the savings achieved, the U.S. Department of Energy (DOE) awarded the GSA a Federal Energy Management Award, under the category of Innovative Technology for Small Groups. DOE officials lauded the GSA for its efforts to "mirror how industry procures and sells energy as well as to meet federal acquisition regulations."

The GSA was also commended by the DOE for initiating a reverse auction that "avoided duplication of effort, saved time and resources, and allowed federal agencies and organizations to focus their attention on critical missions."

Since its successful first foray into online energy procurement, the GSA has used the technology to make numerous, additional purchases of both electricity and natural gas. For example, in May 2002, the GSA procured \$8.3 million in electricity for agency accounts in New York, as well as for the Department of Justice and Bureau of Prisons. The GSA also procured more than \$20 million of electricity in Texas, and savings are estimated at nearly \$7 million (or 25 percent) on the three-year contract.

Collins explains that the GSA is also buying natural gas in almost all states in the nation. "Since 2002," she says, "we have gone out for competitive bid using the auction each year, thus increasing competition and lowering prices."

The GSA recently signed a new five-year contract with World Energy Solutions to continue using its reverse auction and companion services to procure energy for federal facilities nationwide. □

experience the highest rate increases. Coal-fired power plants have initiated small price increases, while the rate structure of nuclear and hydro-based energy has changed little. Depending on the utility company's fuel mix, rates will increase dramatically (if gas-fired) or close to nothing (for hydro or nuclear power).

### Curbing Climbing Costs

In states where retail competition for an energy provider is now a reality, government agencies, commercial and industrial customers, and residential consumers alike have two choices: either save money in energy costs by selecting a particular service provider, or significantly

mitigate cost increases that would incur by defaulting to the local utility's standard offer service (SOS).

Throughout Connecticut, Illinois, Maine, Maryland, Massachusetts, Michigan, New Hampshire, New Jersey, New York, Ohio, Pennsylvania, Rhode Island, Texas, and Virginia, electric markets that are active, sustainable, and competitive already exist. In Arizona and Delaware, open-choice legislation for electricity procurement has been passed and signed into law, while state legislatures are currently reviewing similar measures in Florida, Iowa, Louisiana, Minnesota, Mississippi, and Missouri.

In the states of Arkansas, Montana, Nevada, Oklahoma, Oregon,

and West Virginia, deregulation of electric service is being considered but has met delays.

On the gas side of the regulatory equation, large commercial and industrial consumers have had the option of purchasing the natural-gas commodity separately from natural-gas services for many years. Overall, an estimated 50 percent of states within our nation have implemented residential choice for gas customers.

As deregulation takes hold in more states, government agencies are seeing their energy options increase. To receive an agency's business, energy suppliers are offering costs less than the SOS prices charged by local utilities, along with new and better services.

The combination of deregulation and the Internet has enabled a new marketplace for energy purchases, creating an environment where energy suppliers compete online to secure government energy contracts. Various factors have currently converged—such as deregulation, emerging online purchasing channels, and the availability of information on energy pricing, consumption, and usage—to provide government officials with more options and clout than ever before.

Across the United States and Canada, government agencies are now buying energy over the Internet to increase competition and obtain lower prices.

### Maryland Shaves Millions Off Of Energy Costs

The State of Maryland is one government entity that has translated open choice and online procurement into big savings. With a pooled buying power of a projected \$65 to \$70 million annually for electricity, Maryland's Department of General Services (DGS) decided last year to procure electricity by conducting a reverse energy auction.

Using Internet-based reverse auction technology and market intelligence from World Energy Solutions, a business-to-business energy exchange that matches buyers and suppliers of gas and electricity, the state locked in the lowest possible

## Public Purchasers Sign On to Online Energy Exchange



**Rich Domaleski, Chief Executive Officer of World Energy Solutions, Inc.**

Purchasing energy in a world of deregulation and high energy prices requires a new perspective on the role energy plays in government operations.

"Energy should be viewed not just as an expense, but as a key commodity government relies on to do business," says Rich Domaleski, Chief Executive Officer of World Energy Solutions, Inc., based in Worcester, MA.

Domaleski adds that procuring energy "requires considerable intelligence about the inner workings of today's energy and financial markets, as well as the current regulatory environment." He suggests that agencies with energy contracts coming up for bid carefully monitor rates in order to lock in savings when the time is right. "It's better to hedge your risks by locking in savings at the moment that opportunity knocks than to continually try to second guess the market and predict the point where absolute maximum savings might occur. When you have the chance to save money, take it."

To help government agencies maximize energy savings, the company's World Energy Exchange conducts online, reverse auctions to unite buyers and suppliers of electricity and natural gas. The Energy Exchange uses up-to-the-minute market pricing information and forecast data, along with the buyer's energy usage data, to create bid requests, solicit competitive bids from qualified suppliers, evaluate the bids, and guide selection of an optimum supplier.

Extensive automation, including date and time stamping of bids, ensure the integrity of auction events and create audit trails for required documentation. For instance, conference calls alert energy suppliers to solicitations and point them to a custom-tailored Web site that serves as a repository of all key documents.

The auction event actually consists of a series of auctions, specifically designed to let the government customer test prices for different contract terms, mixes of earth-friendly "green" power, and load combinations. After the auctions are conducted, sometimes more than 30 in a day, the buyer has a matrix of price options to consider. Based on the data, procurement officers can quickly award the energy contract, often within 30 minutes after the auction ends.

For more details about the Energy Exchange, visit [www.govinfo.bz/5197-101](http://www.govinfo.bz/5197-101). □

costs for electricity. The auction was held before energy price caps expired in the summer of 2004, as part of the state's phased move from a regulated to a deregulated energy market. By implementing the cost-cutting strategy, Maryland has avoided more than \$5 million annually in energy price increases.

As part of the state's move towards deregulation, Maryland officials decided to pool its considerable buying power to secure the best possible price on electricity in a competitive market. Officials hoped that by leveraging a reverse-auction platform, electricity suppliers would undercut each other's bids to win the state's business. They also hoped to lock in rates with two-year contracts designed to avoid power price spikes on the open spot market.

"Using an innovative procurement process, the Department of General Services hopes to leverage the state's buying power by managing the procurement of this commodity," said Maryland Governor Robert L. Ehrlich, Jr., prior to the auction. "With accountability to taxpayers as our top priority, we are optimistic the state will be able to avoid unpredictable and costly electric rate increases."

An invitation to bid was issued March 10, 2004, to vendors certified by the Public Service Commission. Within the bid requirements, vendors were asked to supply data such as technical information, company background, and marketing approach. Qualified suppliers were then selected, notified, and provided with details about when the auction would be held.

Energy suppliers who won the reverse auction are now providing power to two major sports stadiums in Baltimore, as well as to state agencies such as the Departments of Transportation, General Services, Juvenile Services, Public Safety and Correctional Services, Natural Resources, Maryland State Police, and the District Court of Maryland.

Maryland's innovative approach to reduce energy costs resulted in awards from two organizations. The National Association of State

Facilities Administrators (NASFA) awarded the state a 2005 Innovation Award, and the National Association of State Chief Administrators (NASCA) presented officials with a 2005 Outstanding Program Award.

Since conducting the 2004 reverse auction, the state has used the World Energy Exchange to procure

electricity two additional times, including a two-year contract beginning January 2005 for an estimated 100 million kilowatt-hours (kwh) and another two-year contract starting in September 2005 for approximately 32 million kwh.

"Through the first contract we entered into using the World Energy

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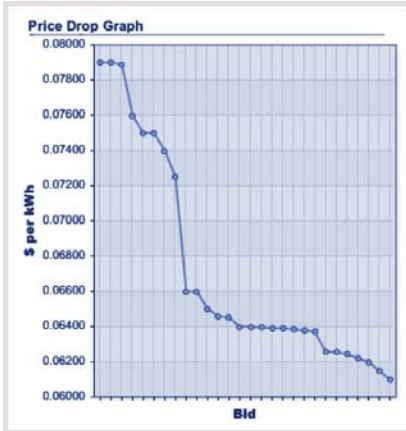
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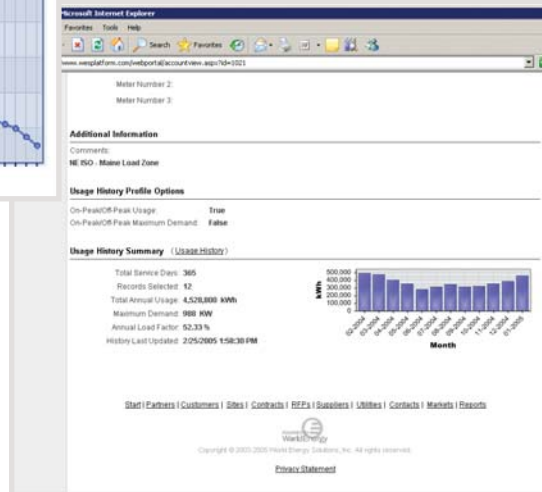
*Price graph (left) depicts progress of an online reverse auction for a large commercial and industrial customer. The horizontal axis reflects the auction time line, while the vertical axis shows the decreases in bid amounts during the course of the auction. Typically, bidding is most aggressive during the auction's last few minutes, when competing suppliers squeeze margins to the bare minimum in order to win the contract.*

Exchange, our prices are now locked in through June 2006," says Lionel Hill, PE, Senior Energy Accounts Specialist for Maryland's DGS. "If you compare the going standard offer service rates from the local utility with the rates we secured during the auction in March 2004, the difference is phenomenal. Plus, it has also given us a needed measure of stability and protection.

"There is no way to budget for volatility," Hill adds, "but with the prices we locked in using the auction, we know what our rates are going to be. In the past, when we were looking at 10 or 15 percent increases from one year to the next, we could absorb them, but with the increases we are looking at today, it is really a challenge. We believe that by locking in firm prices for two years, with the option to renew at the end of the period, we have as much protection as possible in the market today."

By holding the reverse auction, the state was also able to meet its objectives for "green" power, an environmentally friendly alternative to conventional energy sources.

"We talk about running an auction, but we are really running numerous auctions," notes Rich Domaleski, Chief Executive Officer of World Energy. "In Maryland, we ran 38 separate auctions as a means to determine the best combination of many variables. Based on the results of these 38 auctions, four resulting contracts were signed. For green



*Once terms of an auction are accepted and a contract is signed, the contract terms and customer's site, account, and usage information are hosted on World Energy's Portfolio Management system. Consisting of a real-time database, the system stores and tracks monthly usage, analyzes contract and facility performance, and provides audit-trail capabilities.*

power alone, we ran 10 separate auctions in 50 minutes to determine the best mix of conventional and green power."

As a result, an estimated five percent of electricity supplied to state executive departments and agencies will be green power, procured at no additional cost to the state over the price of conventional power.

### District of Columbia Gains Power-Packed Savings

To keep energy costs at bay, the District of Columbia (DC) is likewise responding to deregulation and procuring energy online.

For instance, DC Mayor Anthony A. Williams recently acted expeditiously to take advantage of cost avoidance opportunities resulting from the deregulation of electricity in the Potomac Electric Power Company (PEPCO) service territory. Mayor Williams charged the DC Energy Office, on behalf of the Municipal Aggregation Program (MAP) Task Force, with procuring

competitive electricity supply for the District's facilities and other entities. This move was timely, considering that the four-year price cap on DC electricity prices was lifted as of February 8, 2005. At the time, residential electric bills were expected to rise by 18 percent and commercial electric rates by 24 percent. The unprecedented energy price hikes of this fall would have increased electric rates even more.

MAP set out to help the DC government, hospitals, universities, schools, small businesses, and residents reduce the impact of electric rate increases, avoid price spikes, and ensure that DC MAP customers were paying the lowest possible rates for electricity. To achieve this goal, the agency decided to open its energy procurement needs to prospective bidders, using an online reverse auction.

Within a four-week time frame, the DC Energy Office joined with the District's Office of Contracting and Procurement, as well as the Office of Property Management, to conduct online energy auctions over the World Energy Exchange. During a one-hour auction, eight qualified energy suppliers bid 25 times, continually lowering their offering price.

The resulting two-year, \$41.2 million contract includes the generation and transmission of electricity for 600 DC government accounts. The contract is projected to produce an annual cost avoidance savings of more than 10 percent, compared to allowing SOS to establish rates for these accounts. Overall, DC taxpayers will save approximately \$5.5 million over a 24-month contract period, compared to SOS rates.

"I think we scored a big success with the DC MAP electricity supply contract," says Chuck Clinton, Director of the DC Energy Office. "The \$5.5 million figure that we expect in cost avoidance over the next 24 months is great news for our taxpayers. Thanks to both overwhelming supplier participation and a competitive bidding process

that drove prices down, we are now extremely optimistic that the DC government will realize substantial savings.”

In addition, the contract secured 16,500,000 kwh of environmentally friendly green power (such as wind- or small hydro-based energy)—an amount equal to five percent of the total purchase.

Anthony Jiminez, Energy Management Specialist for the District of Columbia, attests to the benefits of reverse auctions: “With our old, traditional paper-based RFP (Request for Proposal) process, we didn’t have as many competitors,” he says, “nor did we have a third-party intermediary to resolve any issues like we do with the auction. With our standard RFP process, the prices we secured were actually higher than the SOS price. With the auction, we achieved bids 30 percent lower. The cost savings are significant. We’ve used the auction to purchase electricity so far, but the potential is there to also use it for other forms of energy.”

### Words From the Wise

What guidelines can assure the success of reverse auctions for energy procurements? “One key to a successful auction is to work closely with the organization conducting the auction,” advises the District of Columbia’s Jiminez. “One thing that’s really important is to make sure that [buyers] conduct a thorough background and financial solvency check on all the potential suppliers who wish to bid.”

Maryland’s Hill agrees, noting the importance of receiving market information from the auction provider to determine the best price. “With pricing changing by the hour, extensive analysis is necessary to determine the best time to go to market.”

Hill also suggests segregating the bid-load into blocks that will be attractive to potential bidders. “Try to make your loads as large as possible,” he advises. “If you can go out with a load for an entire state instead of each agency doing its own procurement, you will tend to attract more bidders and get a better deal.”

## Strategic Resource Guides Energy Management

To help decision-makers develop a systematic approach to energy management, a new research report is available from the Conference Board, a nonprofit public-service organization that serves business leaders throughout the world. Titled “A Roadmap for Strategic Energy Planning and Management,” the 70-page report outlines energy strategies that can help private-sector businesses, as well as government entities, obtain environmental and cost savings.

Topics covered include the following:

- Global and regional energy trends affecting businesses;
- Designing, organizing, and integrating an energy strategy; and
- Identifying energy-related opportunities.

The report notes that an agency’s strategic plan relates to the availability of certain fuels, including natural gas in certain regions of the country.

According to Energy Star, the government-backed program that helps businesses and individuals implement energy-efficient measures to protect the environment, companies alone can save up to 10 percent of their annual energy operating costs through culture-changing initiatives regarding energy use.

For more information about the report, visit [www.govinfo.bz/5197-102](http://www.govinfo.bz/5197-102). □

Carl LaVerghetta, Director of Procurement for Maryland’s DGS, concurs, “The energy business is like any other business. The bigger the load you can offer, the more suppliers want the business and the better the pricing they can offer. As a buyer, you need to have a good sense of how to segregate your load needs to match what suppliers have to sell.

“For example, some suppliers focus on low load factors,” LaVerghetta continues, “while others are more interested in selling high load factors. The better you can match your demand with their supply, the better the deal you’ll get.”

LaVerghetta notes that Maryland ran 38 separate auctions, of which only four turned into actual con-

tracts. “With the reverse auction, we can look at as many different combinations of variables as are out there,” he says. “There is no charge to the state to run any of the auctions for which contracts are not signed.”

The GSA’s Collins suggests that documenting the integrity of each energy procurement is crucial. “I’ve never had a procurement protested,” she says. “The auction’s ability to time and date stamp every procurement eliminates the possibility of late bids and provides the documentation and support we need to confidently meet any challenge.”

Collins points to the importance of using an auction platform designed specifically for energy procurement, as opposed to a generic platform. “I don’t want a platform where you can buy anything and everything,” she says. “I want one that really specializes in energy and the nuances and complexities of the energy market.

“It’s also important to work with contractors who are completely independent,” Collins adds. “Make sure the companies you work with are neutral and have no ownership or ties to generation or production entities.”

Collins believes that leveraging today’s technology saves time and money to benefit government agencies and the public. “I feel good about what I do because I really think that my staff and I are providing a great service to the taxpayer. As a government agency, we should not be paying more for energy than anybody else. We should be shopping to get the best price because, ultimately, our shareholders are the citizens of this country. [The reverse auction] is a very dynamic way to buy energy and save money doing so. It’s smarter, it makes sense, and it’s definitely more efficient.” □

**Editor’s Note:** Ginger Juhl is President of Juhl Communications, a marketing and communications firm based in Centennial, CO. She has more than 15 years of experience covering topics about high-technology products and services to meet the needs of government and utility entities. Contact Ginger via e-mail: [ginger@juhlcommunications.com](mailto:ginger@juhlcommunications.com).