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GUERNSEY Energy FOCUS

for the energy industries



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Wind Energy: Not Hot Air

Wind power generation has struggled with questions about mandates, tax credits, reliability and economics. Today, however, renewable energy-projects seem to be of increasing interest to utilities across the country.

Crowning a southwest Oklahoma geographic formation known as the Slick Hills, 45 wind turbines, towering 330 feet from base to blade tip, are generating 74.25 megawatts for the member-owners of Western Farmers Electric Cooperative (WFEC), a G&T cooperative serving 19 distribution cooperatives in Oklahoma and portions of Texas and Kansas.

WFEC has studied wind as an energy option for years, according to Gary Roulet, CEO. In the past, WFEC had not found wind energy to be economically or technologically viable. But, things have evolved.

"We felt the time had come to look again at renewable energy, due in part to the volatility of the gas market," said Roulet. "Wind power generation has come a long way in the past few years, making it more feasible."

Brian Hobbs is WFEC General Manager of Legal and Human Resources. "WFEC is committed to diversity in generation resources with coal, natural gas, hydropower and even fuel oil as existing available fuel sources. We believed adding wind generation to the mix was a plus, if it could be found at a price that would provide economical

advantages for our customers," said Hobbs.

"WFEC saw a need to use a native, natural, abundant and renewable Oklahoma resource," said Max Ott, WFEC Board president and manager of Alfalfa Electric Cooperative.

"Wind energy represents good stewardship of resources," added Hobbs. "We are not under renewable energy mandates – this was just the right thing to do." Once WFEC elected to move forward to the next phase, they decided to seek a partner through an RFP process rather than develop a WFEC-owned facility. "We wanted someone with experience," said Hobbs.

WFEC wanted to avoid risks associated with lost production, desired a partner who could use federal and state production tax credits while passing on cost savings resulting from the credits, and sought long-term stable pricing. Of 12 companies who submitted to develop or provide what was initially planned to be a 20 MW wind-power project, they chose Zilkha Renewable Energy.

WFEC crafted a power purchase agreement, the first ever signed between a wind energy provider and



InFOCUS

Competing Water Uses

Modification of priorities at federal hydro projects is cause for concern by electric cooperatives and municipal electric utilities.

OPERATION: Securing Utilities

Security for employees and facilities is important despite the media's focus on critical utility infrastructure.

Natural Gas Price Outlook

GUERNSEY's natural gas model provides six-month outlook.

NRECA's Upcoming Seminars

GUERNSEY's Carl Stover, Judy Lambert and David Hedrick are set to present seminars at the 2004 Accounting, Finance and Tax Conference on July 25-28, 2004 in San Diego, Calif.

a utility in Oklahoma. Under that agreement, WFEC takes all the output from the facility at variable rates. "The key was to design a rate that prices wind energy comparable to how WFEC's existing fuel costs vary within given time periods," said Hobbs.

If the facility is generating, WFEC pays either lower or comparable pricing as existing natural gas fuel costs. If the facility is not generating, WFEC pays nothing. This unique contracting approach allowed the project to grow from 20 MW to 74.25 MW.

The agreement was signed in January 2003 and the project was immediately off and running. Time was of the essence, as federal production tax credits would expire if the project was not in commercial operation by the end of 2003. Within that window, Zilkha would purchase and install turbines and a substation, while WFEC would receive Rural Utility Service (RUS) approval,

See Wind on page 3.



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OPERATION: Securing Utilities

Providing a safe and secure workplace for utility employees is a critical business component.

In the wake of the 2001 terrorist attacks, the vulnerabilities of our nation's electric infrastructure have received a lot of media attention, but existing threats to utility personnel are paramount. Increasingly, the rural or small-town environment of most electric cooperative service territories no longer serves as a buffer to criminal activity.

Tools are available to enhance the safety of personnel ranging from security awareness training and incident response procedures to implementing access control and surveillance systems. Clearly, the solution is unique to each cooperative depending on location, workforce characteristics and historical data.

Although we may rarely consider it, some common cooperative work practices pose a potential risk to personnel. For example, it is common for linemen to collect delinquent accounts, and crime trends indicate that personnel known to carry sums of cash are at risk. Likewise, routine disconnect

and reconnects of delinquent accounts are common activities that place personnel in contact with customers who are inconvenienced, embarrassed and sometimes just plain mad. Dealing with customers under these circumstances is always unpredictable and requires training and proven procedures to minimize the risk to personnel.

The safety of office personnel should also be considered. It may be generally assumed in the community that each office has a cash drawer that is easily accessible. Planning for the worst through facility security design and employee training is critical.

Cooperative facilities often have numerous access points. Building access is not only available through the front entrance of an office, but sometimes through unrestricted employee or warehouse entrances or vehicle bays. Modern electronic entry control systems coupled with employee awareness significantly reduce risks associated with unsecured facilities.

Unrestricted access to facilities may result in theft, vandalism or potential liability. Access to areas such as material warehouses, yards and vehicle maintenance areas should be restricted to cooperative personnel. Modern electronic entry control systems can accomplish this function remotely and usually without personnel intervention.

It was once in all industries to act only in response to an incident, but that is changing. Businesses of all types are proactively acting to improve security at all levels. GUERNSEY has provided consulting services for corporate clients such as Frito Lay, American Airlines and Lucent Technologies. Like cooperatives, each is unique but committed to maximizing security and minimizing risk.

Cooperatives should turn to proven methods and anticipate probable occurrences. Risk assessment, evaluation, design and implementation of proven protocol and monitoring equipment ensure appropriate measures are taken and plans are in place to mitigate risk. While the process of determining the most cost-effective approach to organizational security may be complex, the need in the utility industry is real and growing.

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Competing Water Uses

The competing water use debate indicates the economic value of storage at federal projects. Electric users may bear costs, which result from water use policy changes, if appropriate measures are not taken.

During the early decades of the 20th century, Congress envisioned a system of federal dams and reservoirs along the major U.S. rivers of the Southeast, Southwest and Northwest. Most of these projects were conceived to solve multiple issues in each basin. These issues were to improve regional commerce through the development of inland waterways, provide downstream flood protection of farmland and communities and produce electricity for use

in the infant Federal Power Program. The U.S. Army Corps of Engineers and the U.S. Bureau of Reclamation designed, constructed and operate these federal projects. Of the projects' three primary purposes, only hydropower was required to fully repay the federal treasury. The

other purposes were considered to be in the public's best interest and were funded through appropriations.

Over the years, population growth, increased recreational use and urban sprawl has created burgeoning economic centers around many of these federal projects. This has placed an increasing burden on federal reservoirs, not only to meet their original purposes, but also to accommodate new needs such as water supply, recreational use and greater environmental flows to assimilate the wastewater discharges required by the

population growth; hence, the competing use issue.

The electricity produced at these federal projects has been a mainstay of the Federal Power Program administered by the U.S. Department of Energy and marketed through regional Power Marketing Agencies (PMA). The PMAs contract with municipal electric utilities and electric cooperatives delivering electricity to customers. The revenue generated

has gone to the federal treasury to repay hydropower's allocated share of the initial capital investment, as well as all subsequent capital investments and allocated operating and maintenance expenses. In return power providers have relied on this electricity as an integral

component of their total resource needs; however, hydropower's future is in question as competition for the use of storage at the federal reservoirs intensifies.


Most public power providers do not question that use of the storage for water supply, industrial use or recreation is of growing importance. Nor are they averse to the use of storage for providing environmental flows as long as there is reasonable science to document the need and benefit. The real competition comes from modification of a federal project's purpose from providing hydropower to another purpose without proper acknowledgment of

"...hydropower's future is in question as competition for the use of storage... intensifies."



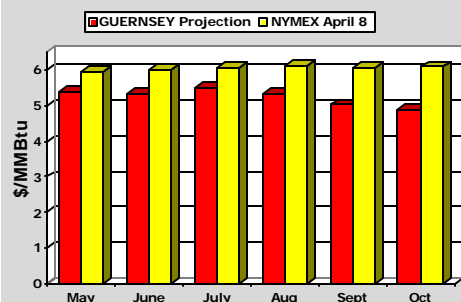
the economic impact to public power providers. Any loss of hydropower allocation by an electric utility requires they purchase replacement power from the power market; typically at a higher price.

Public power providers are only protected if current procedures obligate the new beneficiary to compensate for the lost power at the rate equivalent to replacement power. Strategies can be designed to protect existing allocations requiring the new beneficiary to provide compensation that settles any long-term, financial inequities arising from inappropriate handling of policies.

With these strategies, and recognition by all parties that storage at federal projects has significant economic value, all uses can be accommodated and cost responsibility assigned to the appropriate beneficiary. Otherwise, municipal electric customers and electric cooperative members can be subject to increased financial pressures. 

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Six-Month Natural Gas Price Outlook



The GUERNSEY forecasts are based on the most recent weather forecasts for the next two weeks and normal weather after that. The price forecasts have a band of +/- \$0.50.

As the heating season ended with stored natural gas at minimally acceptable levels, which to most traders is around one trillion cubic feet, crude oil seized the attention of market participants. Taken together, these two influences create unusually treacherous, hard-to-predict markets. An important market-fundamental underpinning is replacing stored gas, which

may last well into the summer months.

Opinions concerning the impact of Middle Eastern unrest and the economy recovery statistics describing speed, draw technical traders into the natural gas markets. When technical trading and market fundamentals diverge, it is a good time for physical gas buyers to be risk-averse and to diversify. 

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Wind

cont. from page 1.

design, route, obtain easements and build a 24-mile 138 kW transmission line to the facility. RUS approved the project in May 2003.

Hobbs stated the production tax credit was critical to the success of the project. The tax credits lowered the price of the energy produced from the facility by as much as 30 to 40 percent. Without the tax credits, the project would not be economically viable for WFEC's member-owner customers. WFEC built and owns transmission facilities, while Zilkha paid all construction and maintenance costs.

The transmission line had to be available by the end of October to allow time for testing and commissioning of the turbines before the end of the year. Everything was made even more challenging by the extreme terrain.

To meet the tax credit deadline, WFEC used an Engineering Procurement Construction (EPC) contract. "We opted for this approach because it gave us a rapid turnaround," said Hobbs. GUERNSEY's power engineering team partnered with C&H Power Line Construction, Inc. to respond to WFEC's RFP with a single contract. WFEC had the advantage of a single point of responsibility and a team-based approach, including the contractor, the consulting engineer and WFEC personnel.

This team approach would be critical because schedule

considerations required material for the job to be ordered before designs were completed. WFEC engineers, contractors and GUERNSEY were on-site daily to jointly coordinate project changes and special considerations as they appeared. The transmission line was ready by mid-October – ahead of schedule – for facility testing.

The project began commercial operation Dec. 23, 2003. To date, it has exceeded expectations, operating approximately ten percent above projected production levels.


Hobbs explained WFEC's wind energy project provides positive benefits to members in two ways. The first is stable, long-term, competitively priced energy as compared to natural gas generation. All members see this benefit through lowered power cost. According to Hobbs, another positive benefit is reduced emissions. "For every kWh of wind energy generated, there is one kWh of

renewable energy credit produced. The credit represents the value of the positive environmental attributes produced by generation with wind energy. Through WindWorks, the retail marketing program created by WFEC member cooperatives, we offer customers the opportunity to purchase green power."

Green power has proved popular with some customers, allowing those who so desire to replace power generated by fossil fuel with power generated by wind or other renewable resources. Hobbs stated that rather than offering a bundled green-power price including the cost of wind energy and the cost of the

accompanying renewable energy credit, WFEC members are offered an unbundled product.

"Member cooperatives may voluntarily participate through WindWorks by purchasing energy at existing prices as they do now and bundling it with renewable energy credits purchased separately. Since each credit can only be sold once, and only one credit can be sold per wind energy kWh generated, customers may support development of renewable resources," said Roulet.

"We look forward to this venture," concluded Roulet. "We feel it is good for WFEC members and their customers, Oklahoma's environment, citizens of Oklahoma and the economy of Oklahoma, both today, and for many years to come." 

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