

NEWSLETTER-SUMMER 2001

CENTER FOR ENERGY STUDIES ** LOUISIANA STATE UNIVERSITY

One East Fraternity Circle ** Baton Rouge LA 70803 ** (225) 578-4400 ** www.enrg.lsu.edu

Could “It” Happen Here?

The blackouts that are expected to keep on rolling through California this summer, the unexpected explosion of natural gas prices and utility bills last winter, and the two-dollar-a-gallon-plus gasoline selling in some metropolitan markets, have been lumped together as another “energy crisis” requiring a comprehensive new national energy policy. Basic energy strategy alternatives continue to raise important domestic and foreign policy questions. Aspects of our implicit energy policy may seem inconsistent, eg., encouraging domestic energy production while putting a large proportion of potential energy reserves off limits for exploration. The consequences of blackouts and price explosions can clearly create a personal crisis for many energy users. However, many energy policy analysts argue each of these phenomena have specific, unique, causes that need to be analyzed and addressed separately in the context in which they arose. Regardless of the logic of this observation, the most common question at the Center for the last six months has been some version of “could it happen here?” The appropriate response depends on the aspect of “it” in question.

1. Should Louisianans expect rolling blackouts?

Louisianans in some parts of Entergy’s service area had a brief encounter with rolling blackouts in July of 1999 when a heat wave, breakdowns at five generating plants, and a cutback by a supplier of purchased power necessitated intentional, temporary interruptions in power to 557,000 customers, 324,000 of whom were in Louisiana. But, as illustrated by the following table, generating reserve margins, i.e., capacity to generate electricity that is available but not needed to meet demand, in the Entergy subregion of the Southeast Electric Reliability Council (SERC) are forecast to exceed the average for the U.S. as a whole in each of the coming summer months by a significant amount. The table also depicts reserve margins for two other North American Electric Reliability Council (NERC) subregions--the Southeastern region of the Southwest Power Pool (SPP-SE), which includes utilities serving Louisiana customers that are not in the Entergy subregion, and the California subregion.

Table 1. Estimated Available Capacity Margins (Percentage) for the SERC/Entergy, SPP/Southeast, and California NERC Subregions, with the U.S. Average, Summer 2001

Month	SERC/Entergy	SPP/Southeast	California	United States Avg.
June	26.9	28.0	10.1	20.0
July	22.2	16.4	13.3	15.7
August	22.1	14.3	9.9	16.1
September	27.2	15.9	16.7	23.6
Summer Average	24.6	18.65	12.5	18.85

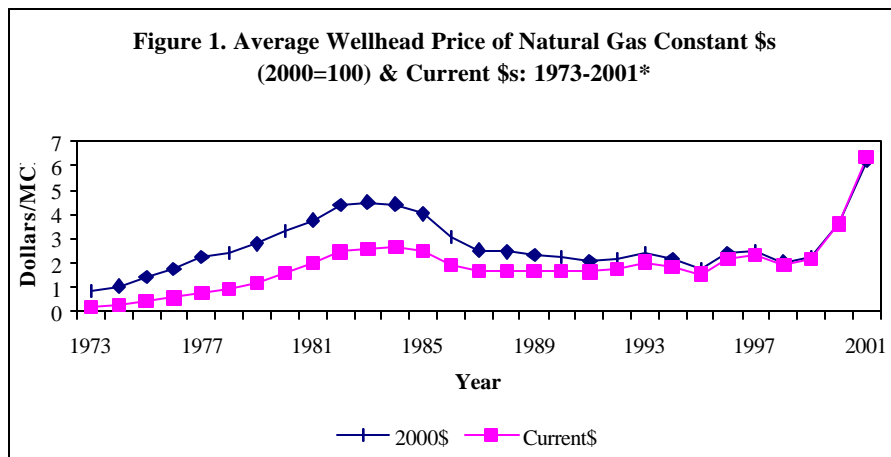
Source: North American Reliability Council Summer 2001 Assessment, Table 3.
Summer average simple average of monthly margins.

The summer average for the SPP-SE is slightly below the corresponding U.S. average, and in August and September the SPP-SE average for the summer is below the national value. The chart also gives California's margins, which are lower than either the Entergy or SPP-SE for all months except September. However, California's September margin is significantly higher than in the preceding three months. NERC data reflect intra and inter regional sales, are collected by the members of the regional reliability councils themselves rather than by independent analysts, and can be hard to interpret in isolation from other factors, such as the proportion of the load that is interruptible, the proportion of generation from a single source, or the dependence upon a single type, such as hydroelectric. Keeping these qualifications in mind, reserve margins for companies serving Louisiana customers seem to be high enough to minimize the risk of widespread, California-type trouble. Further, in addition to poor hydroelectric conditions and an epidemic of technical problems forcing generators off-line, the factors responsible for periodically pulling the plug on California involved a restructuring procedure that was not designed with such contingencies in mind and, fears of non-payment by independent power producers located both in and outside of California. None of these factors characterize Louisiana.

2. Will Natural Gas Prices Return to "Normal?"

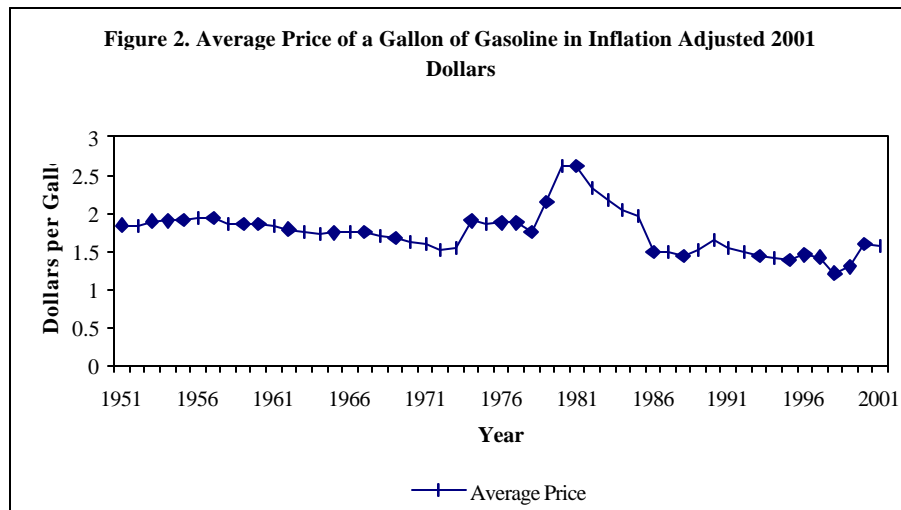
Utility bills for many Louisiana consumers doubled or tripled as winter came earlier and colder than normal this past year. The cause of the increase was higher natural gas prices. Low initial inventories and higher demands exaggerated and intensified the market's reaction. Figure 1 shows the price of gas at the wellhead measured in both current and in year 2000 dollars. The wellhead price mirrors the price paid by electric utilities. In areas like Louisiana, which generate a lot of their electricity with natural gas, price changes show up in utility bills very quickly because of fuel adjustment, or "pass through" clauses. The 1999 to 2001 increase resulted in a price higher than any previous year shown. But note that adjusting for inflation, by using year 2000 dollars, shows that wellhead prices in the 1990s were significantly lower than the highs reached in the energy crisis of the late 1970s and early 1980s. Prices have fallen in the second quarter of 2001, but many analysts believe they are likely to remain in the \$4 to \$6 range. Merchant power plants are being built on a catch-up basis and almost all of them are planning to use natural gas. There has been a rush to design and evaluate facilities to import and distribute liquefied natural gas imports. Thus, "normal prices" for natural gas may well have roughly doubled from their 1990s level and will remain there for at least the next few years.

*2001 values estimated by CES from 1st quarter data.



3. Is \$2 per gallon gas in our future?

While we all have to pay our bills in current dollars, it is useful to keep in mind that when adjusted for inflation, gasoline prices have consistently fallen over much of the past half century. The graph below shows the average price of a gallon of gasoline in inflation-adjusted-April-2001 dollars. The April 2001 price of \$1.57/gallon is lower than the average price prevailing in any year except the decade and a half from 1986 to 1999. Further, the relative differences are substantial. In 1951 the average price was 17 percent higher and the highest average gasoline price, reached in 1982, was 67 percent above what consumers are paying in 2001. The areas of high price are in California, where state regulations require a gasoline yielding fewer emissions than are allowed under federal air quality standards. Similarly, prices are higher where special blends are required in metropolitan areas not having attained national air quality standards. The resulting compartmentalization of the gasoline market has led to more price volatility when the refinery accidents or other outages restrict the supplies of regionally specialized fuels. Because of the large, export-oriented refining capability in Louisiana, such problems are less likely to develop on the Gulf Coast even if specialized fuels are required as a consequence of non-attainment of federal air quality standards.



The bottom line is that two of the principal symptoms of the “new energy crisis,” rolling electricity blackouts and high gasoline prices, are unlikely to infect Louisiana, but that higher natural gas prices and higher electricity bills may well become a part of the State’s as well as the Nation’s energy future.

The Consequences of a Public Benefit Fund for Louisiana’s Electricity Consumers

If the electricity industry becomes more competitive and market driven, the fate of such “public benefits” as low-income bill assistance, weatherization, and energy conservation and efficiency programs becomes a source of concern. In a market-driven environment, without regulation, it is not realistic to assume such programs will be maintained. Nineteen states have created funds to support such public benefits through surcharges on electricity sales. Charges range from highs of 6.2 and 3.7 mills per kilowatt hour (kWh) in Rhode Island and Mississippi to

lows of 0.3 mills/kWh in New Mexico and Delaware. The total amount raised by such charges ranges from \$525 million in California to about \$5 million in New Mexico.

At the request of the Louisiana Department of Natural Resources (LDNR), the Center's Mark Kaiser recently conducted a study of the economic and environmental consequences of imposing a 1mill/kWh charge in Louisiana. A 1 mill charge would yield a public benefit fund of \$82 million at next year's expected consumption level. For the study, LDNR stipulated a distribution for the fund that would allocate half to low-income bill assistance and household weatherization and half to residential and commercial energy efficiency programs. Further, it was stipulated that the energy efficiency programs would attract private investment on a three-to-one basis.

Working within these assumptions, the study concluded:

- 242 thousand low-income Louisiana households would receive an average of \$69 annually in bill assistance.
- 8,667 low-income homes could be weatherized each year.
- 32,448 residences could be made more energy efficient as could 18,720 commercial establishments.
- In the first year of the proposed program the energy savings would amount to \$28.4 million. Over a 20-year period, discounted at 5 percent, that rate of savings would yield benefit/cost ratio of 1.8.
- The value of the air pollutants avoided by more efficient energy use would be about \$1.2 million in the first year and a present value of around \$12.2 million over a 20-year time horizon.
- A total of about 2,200 jobs would be created, which would generate an additional \$10.6 million in state tax revenues.
- The present value of the total economic benefit to the state would be almost \$420 million.

Although these estimates provide a much better basis for discussing the consequences of a public benefit fund, as is detailed in the study, the estimates of energy savings upon which they rest have not been consistently measured and verified--neither in Louisiana nor nationally. To evaluate the consequences of public benefit funds, the study concludes, explicit procedures need to be designed and implemented to measure their results.

The study was completed well before the President's National Energy Policy was published, but in this area the study serendipitously foreshadows some of President Bush's recommendations. For example the President's plan recommends, "The President take steps to mitigate impacts of high energy costs on low-income consumers," such as:

- Strengthening the Low Income Home Energy Assistance (LIHEAP) Program,
- Directing the Secretaries of Interior and Health and Human Services to propose legislation to bolster LIHEAP funding by using a portion of oil and gas royalty payments,
- Redirecting royalties above a set trigger price to LIHEAP, whenever crude oil and natural gas prices exceed that trigger price, and
- Increasing funding for Weatherization Assistance Programs by \$1.2 billion over ten years. The Department of Energy will have the option of using a portion of these funds to test improved implementation approaches for the weatherization program.

The President's report also recommends support for legislation to allow funds dedicated to weatherization and other state energy programs to be transferred to LIHEAP if the DOE "deems it appropriate."

A Comprehensive History of the Offshore Oil and Gas Industry

Applied anthropologists, business historians, cultural geographers, energy economists, and environmental sociologists are cooperating in a unique effort to understand the historical evolution of the offshore oil and gas industry and its effects on Louisiana's coastal culture, economy, landscape, and society. The U.S. Department of Interior's Minerals Management Service, which manages offshore oil and gas exploration and production within the federal government's jurisdiction, is the sponsor of the project.

Currently about 22 percent of the oil and 26 percent of the gas produced in the United States come from MMS's Gulf of Mexico jurisdiction. In addition to seeing that offshore resources are developed efficiently in a safe and environmentally responsible manner, MMS must anticipate the effects of offshore development on coastal communities and economies. The goal of the project is to produce a history of the offshore oil and gas industry that will help the agency, as well as the communities, companies and governments affected, better anticipate the future by better understanding its past.

The project will try to capture and synthesize three main perspectives. The first is that of the industry's pioneering engineers, managers and entrepreneurs who created the organizations and technology required to produce oil and gas, sometimes hundreds of miles from land in thousands of feet of water. Second, oral histories will be collected from workers, family members of workers, community leaders, and others whose lives have been shaped by the offshore industry. The third perspective is that of the governmental and political leaders who developed the strategies and laws that were used by MMS to regulate and manage the development of offshore resources.

The researchers participating in the project previously have studied aspects of the offshore industry, but in this project they will be part of a team looking at its development comprehensively in a holistic way. Communication and sharing perspectives among participants is expected to result in a more informed and balanced history.

The community-focused oral history part of the project will train and employ local residents, primarily schoolteachers, to identify sources and to conduct interviews. Diane Austin and Tom McGuire from the Bureau of Applied Anthropological Research at the University of Arizona will lead this effort. Professors Joe Pratt and Tyler Priest of the University of Houston's History Department, who have authored several company histories of offshore oil and service companies, will lead the business-history-focused component of the project. Tracing the governmental and regulatory response will be the responsibility of researchers at Louisiana State University working with MMS staff. Researchers at other universities and regional organizations will be involved in the second and following phases of the project.

The project will be organized and financed under a cooperative agreement between MMS and the Center for Energy Studies at LSU. Allan Pulsipher, Executive Director of the Center, is serving as the project director.

Wumi Iledare Elected Secretary Treasurer of the U.S. Association for Energy Economics (USAEE)

Wumi Iledare has been elected the secretary-treasurer of the United States Association for Energy Economics (USAEE). The association is an affiliate of the International Association for Energy Economics (IAEE), which was founded in 1977 for professionals in the energy industry, academia, and government who are interested in energy economics. The USAEE holds a North American conference and the IAEE holds an international conference each year for the exchange of ideas, experience, and energy policy issues. Wumi presents technical papers on petroleum economics at USAEE/IAEE conferences very regularly. His most recent technical paper, "The Determinants of Petroleum Reserves Additions on the Gulf OCS," was presented at the IAEE 24th Conference in Houston, TX, on April 25-27, 2001.

CES and Louisiana Department of Natural Resources Convene Meeting of State Energy Managers

In an effort to better prepare public institutions for the rising energy costs, the Louisiana Department of Natural Resources (DNR) and CES convened a meeting of representatives from state agencies, school districts, hospitals, prisons, municipalities, and colleges and universities on February 22, 2001. Presentations for the program entitled *Finding Solutions to Rising Energy Costs* focused on understanding energy usage, better managing energy costs through efficiency measures and improved technologies, and financing energy improvements. Several case studies were presented. State Representative Luke LeBlanc, Chairman of the House Committee on Appropriations and the luncheon speaker, spoke to the participants about the impact of the spiraling energy costs on the state's budget and the need for agencies to position themselves to take maximum advantage of all opportunities to control costs. Over 250 registered for the one-day conference at the Lod Cook Alumni Center at LSU.

Petroleum Technology Transfer Council Workshops

The Central Gulf Region PTTC located at LSU's Center For Energy Studies organized and sponsored two workshops this year. The first, in Shreveport on February 20, 2001, focused on : *Drilling Optimization and Completion Technologies*. The second, held in Lafayette on May 9, 2001, covered topics related to *Managing Louisiana's Gas Resources*. The objective was to bring together professionals knowledgeable about Louisiana's gas operations as well as independent operators considered "trend setters" in Louisiana's gas production, who were willing to share their experiences and technologies used in their E&P gas activities offshore and/or on land.

The next workshop is programmed for Shreveport on September 13, 2001, and will cover *Advances in Wireline Logging Technology*. The objective of the meeting is to bring together some of the companies in the forefront of logging technology and to connect them with independent operators who may be interested in learning about the latest technology options at their disposal. The providers of wireline logging solutions will be discussing both open hole as well as cased hole applications of some of the latest developments.

Ron Zimmerman from the Basin Research Sector of the Louisiana Geological Survey and Don Goddard from the Center for Energy Studies, as part of their ongoing petroleum research activities, have submitted a paper for publication in the *Transactions of the Gulf Coast Association of Petroleum Societies (GCAGS)* entitled "A North Louisiana Gas-Prone Hosston Slope Basin Sand Trend." A talk will be given on the economic potential of this newly reported deep gas Hosston trend at the Annual GCAGS Convention in October in Shreveport.

Central Gulf Region PTTC Website to Acquire a New Look

In an effort to improve the ease of use of the PTTC websites, a meeting of the regional webmasters along with some of the national staff met at the West Coast facility on December 8 & 9, 2000. The primary goals were to acquaint the webmasters with each other and to improve the PTTC website network. Improved consistency was a primary concern using standardized terminology, graphics and accepted web conventions to simplify the navigation process when visiting the national and regional websites. The national and several regions have already converted to the new format and the Central Gulf followed suit on June 1, 2001.

Ongoing PTTC Projects

- **Well Log Library:** Versa Stickle and Riley Milner are continuing to spearhead the work of organizing the well log collection into a searchable database. The logs are being sorted alphabetically by parish, and the group has progressed its way to Plaquemines Parish.
- **Louisiana Desktop Well Reference:** Mike Surman and Brian Harder are updating the information and data to the year 2000. Updated CD should be available by late summer.

Education and Training

Bob Bradley and Versa Stickle of the Center for Energy Studies, and Shannon Guidry, of the Louisiana Museum of Natural Science, have completed a new Educational CD-ROM entitled, *Environmental Education: A Louisiana View*. This CD, designed for environmental education teachers, grades 5-8, tackles such subjects as: ecosystems, habitats and niches, biodiversity, biomass, pollution, erosion, conservation, stewardship, and many more. Each subject area contains four sections: Content, Activities, Resources, and LEAP Standards. What makes this CD unique is that throughout the Content and Activities sections, LEAP standards are cited and linked, alerting the teacher to the knowledge and skills contained in the section and their associated LEAP standards. Distribution of the CD is now in process.

Bob has also been busy working with Department of Energy training contracts. Over the past several months he has conducted grant writing workshops in San Diego, CA; Santa Fe, NM; and Salt Lake City, UT. The workshop in Salt Lake City, conducted at the Engineering Experimental Station of the University of Utah, was especially unusual and groundbreaking in that it not only had a live audience, but it was also video and audio streamed to forty Internet nodes across the nation. People from the University of Kentucky, University of Illinois, and others took part in the online training.

Articles, Papers, Presentations, and Software: Center for Energy Studies, Louisiana State University 2001

Baumann, R. H. (with D. W. Davis). Oil in Louisiana's estuarine environment: a development model. *The Chinese Science Bulletin*, Science in China Press, Beijing, China (in press).

Goddard, D. A. (with R. K. Zimmerman). A North Louisiana gas-prone Hosston Slope-Basin sand trend. *Transactions of the 51th Annual Convention*, Shreveport, Louisiana, October 17-19, 2001. Gulf Coast Association of Geological Societies and Gulf Coast Section SEPM (in press).

Kaiser, M. J. and A. G. Pulsipher and R. H. Baumann. Economic and environmental impact of a public benefits fund in Louisiana.

Prepared for Louisiana Department of Natural Resources. Baton Rouge, LA. March.

Iledare, O. O. and A. G. Pulsipher. The determinants of petroleum reserves additions: empirical evidence from the Gulf of Mexico Outer Continental Shelf. *Proceedings of the Society of Petroleum Engineers Hydrocarbon Economics and Evaluation Symposium*, SPE Paper #68604, Dallas, April 2-3.

Iledare, O. O. (with Solomon Inikori and K. M. Kumar). The responsiveness of the global E&P activity to changes in petroleum prices: evidence from 1960-1999. *Proceedings of the Society of Petroleum Engineers Hydrocarbon Economics and Evaluation Symposium*, SPE Paper #68587, Dallas, April 2-3.

Iledare, O. O., A. G. Pulsipher and R. E. Pincomb. Crude oil production trends in the U.S. Gulf of Mexico OCS: how important are economic and policy incentives? Paper prepared for presentation at the International Association of Energy Economics 24th Annual International Conference, Houston, April 25-27.

Iledare, O. O. and A. G. Pulsipher. Forecasting the ultimate oil recovery and its rate of depletion in Nigeria's Niger Delta Basin. *Pacific and Asian Journal of Energy* 10(2): 185-200.

Iledare, O. O., W. O. Olatubi, and A. G. Pulsipher. Modeling wildcat petroleum productivity in the U. S. Gulf of Mexico Outer Continental Shelf (OCS). *Energy Studies Review* 9:2.

Pulsipher, A. G. Too many merchant power plants for Louisiana? Louisiana State University, Center for Energy Studies. Available at <http://www.enrg.lsu.edu> .

Pulsipher, A. G. and W. B. Daniel IV. Onshore-only platform disposition needs exceptions. *Oil & Gas Journal*. Vol. 99(3): 64-65 (January 15, 2001).

Pulsipher, A. G., O. O. Iledare, D. V. Mesyanzhinov, A. Dupont, and Q. L. Zhu. Forecasting the number of offshore platforms on the Gulf of Mexico OCS to the Year 2023. OCS Study MMS 2001-013. Prepared for U. S. Department of the Interior, Minerals Management Service, by Louisiana State University, Center for Energy Studies. April.

“ www.enrg.lsu.edu ”



**Louisiana State University
Center for Energy Studies
One East Fraternity Circle
Baton Rouge, LA 70803**

**Non-Profit Org.
U.S. Postage
PAID
Permit No. 733
Baton Rouge, LA**