



**CENTER FOR ENERGY
STUDIES
LOUISIANA STATE UNIVERSITY**

2004 ANNUAL REPORT

CES LOCATIONS



East Fraternity Circle, 1982-2002



Energy, Coast, & Environment Building, 2003-present

TABLE OF CONTENTS

Energy in Perspective, 1982-2004	2
The Energy Lull	
Today's Energy Realities	
The Storm before the Lull?	
The Center's Mandate & Organization	5
Information Services Division	
Research & Development Division	
Policy Analysis Division	
Projects	11
The Oil & Gas Industry	
Energy & Economic Development	
Electricity	
Energy Assistance & Conservation	
Publications 2002-2004	18
The Oil & Gas Industry	
Energy & Economic Development	
Electricity	
Energy Assistance & Conservation	

ENERGY IN PERSPECTIVE, 1982-2004

When the Center for Energy Studies was organized in 1982, war in the Middle East seemed to be driving oil prices to ever-higher levels. Frugal gasoline consumption was a major concern of new car buyers and energy conservation was a popular topic at neighborhood cocktail parties. The conventional wisdom was that we had entered a new energy era in which oil would soon sell for \$50 a barrel and its price would just keep on rising.

THE ENERGY LULL

Oil never got to \$50 a barrel. In fact it was selling for less than \$15 a barrel just three years later, and oil prices more or less bounced between \$15 and \$25 a barrel throughout the rest of the 1980s and 1990s. Real or inflation-corrected prices fell. As a consequence energy retreated from the front page to the business section of the newspaper, and governmental efforts to encourage energy conservation and develop new technologies or sources of supply were diffused if not abandoned.

Lower prices and improvements in the efficiency of energy use meant that the proportion of consumers' expenditures required to pay energy bills shrank significantly—especially expenditures for gasoline. Also, the proportion of the nation's households dependent of fuel oil for heating fell sharply, easing the energy burden in the populous Northeastern states.

No one likes to spend more for energy, or anything else, than they have to. From that perspective the performance of the energy sector of the U.S. economy over the last two decades of the 20th century was a real, albeit not widely recognized, economic success story. Ample supplies of energy were provided at largely falling real prices throughout an extreme period of economically disorienting geopolitical realignments.

The bad news was that as real prices fell and consumers spent less of their budgets on energy, and as governmental attention to energy waned, the proportion of the U.S. oil supply imported rather than produced domestically continued to increase steadily. A nagging unease about becoming more and more reliant on a rapidly changing and unstable region of the world for our future oil supply was regularly acknowledged, but, other than the creation of the Strategic Petroleum Reserve, was effectively ignored by public policy makers.

TODAY'S ENERGY REALITIES

Energy markets and expectations today are much more like they were when CES was created rather than during the 22-year intervening energy lull. In October 2004, world oil prices finally did get to \$50 a barrel and have hovered around there since. Trouble in the Middle East is, again, a large part of the picture; however, the 1982 v. 2004 differences reflect new supply and demand fundamentals as well as a more complex and uncertain political and military situation. Moreover, many of the differences are negative for Louisiana.

- Although in nominal or current dollars oil prices never quite reached the \$50 a barrel mark in the early 1980s, when translated into today's dollars, i.e., corrected for inflation, they almost reached \$80 dollars a barrel in 1981 and stayed above the \$50 mark until they collapsed in 1985. Adjusting for the

decline in the dollar relative to other currencies lowers further today's price relative to its historic high.

- In contrast, natural gas prices measured in today's dollars have been higher than their 1982 peak for some time. They peaked at a little below \$5 per thousand cubic feet (mcf) in 1982 but then fell to below \$3 per mcf until 2000. Measured on a quarterly basis, they exceeded 1982 levels in 2001 and stayed above that throughout 2003 and 2004.
- In 2004 existing unused, short-run, oil supply capacity appears to be only slightly greater than the expected annual growth in world oil demand. In 1980 available unused capacity in Saudi Arabia alone was equal to two or more decades of projected global demand growth.
- The longer-term perspective is cloudy. Remarkable improvements in technologies for finding and producing hydrocarbons have been developed but decline curves for many new discoveries seem to have steepened.
- Furthermore, along with the Persian Gulf, West Africa, Indonesia, Russia, and Venezuela are expected to be the important sources of new oil supply over the near and intermediate term, but today all of them are experiencing fundamental political uncertainty and instability.
- Although the U.S. began to import liquefied natural gas (LNG) in the early 1980s, falling domestic natural gas prices froze the U.S. LNG market at minimal levels throughout the later 1980s and 1990s. In the last three years, domestic natural gas prices have increased sufficiently to make importing LNG again an economically attractive business opportunity. Imported LNG will account for 30 percent of U.S. gas

consumption if planned projects reach completion.

- For the first time since the 1980s, imports of refined petroleum products such as gasoline are expected to increase. The federal Energy Information Administration predicts the proportion of refined products that is imported will increase from the 15 percent level it has maintained for the past 20 years to about 35 percent by the year 2025. The Marathon Refinery built in Garyville, Louisiana, opened for business in 1974. It was the last totally integrated refinery built in the United States. At least in Louisiana, space for major expansions is available and community acceptance of new refining capacity may be more realistic than in other regions. The conventional wisdom in the industry, however, is that increasing imports is a more commercially prudent strategy than investment in new domestic capacity.
- Nuclear power was regarded as an economic loser in 1982, but since that time nuclear operators have learned how to keep nuclear plants on line and producing power. Nuclear plants were operating about 50 percent of the time in the 1980s, but today the industry average is closer to 90 percent. In capital-intensive industries like nuclear power, higher capacity factors mean higher productivity and profitability. Utilities have been unwilling to start new plants without help from the government, but clearly nuclear power is a more relevant alternative today than it appeared to be in 1982.

THE STORM BEFORE THE LULL?

To return to the initial premise, do today's new energy realities imply that the "energy lull" is over? Or, are the current energy discontinuities simply a second instance of a "storm before the lull"?

Markets have a remarkable capacity for adapting and adjusting to new realities. Decentralized economic decisions based on adequate information and responding to undistorted incentives have repeatedly turned analogous “storms into lulls” by dulling demand, increasing supplies and discovering suitable substitutes. Energy markets today are much better developed and widespread than they were in the 1980s, and the potential for well-intentioned regulation to become counterproductive is better understood. Adjusting for inflation and the decline in the value of the dollar relative to other currencies diminishes the

apparent “record high” oil price considerably although natural gas prices appear to have reached, at least, a new and higher plateau.

Eventual adaptation does not imply that there will be no winners or losers, however. Hummer owners and commodity petrochemical producers are going to absorb a larger share of the costs of adjustment. For energy intensive states on both the producing and consuming sides of the table, like Louisiana, getting to the lull may still be a challenging and difficult adventure.

THE CENTER'S MANDATE & ORGANIZATION

Relative to its size and economic diversity, energy production and consumption are more important for Louisiana than for any other state except Alaska. The original mandate given to the Center for Energy Studies was to facilitate the study and understanding of how energy problems, policies, and realities affected the state's economy and citizenry. Although the Center's organization and strategy has changed throughout its 22-year history, that charge has been constant and guides the Center's efforts today.

With the assistance of its Advisory Council, the Center's staff tries to identify issues with important implications for the State's economy and citizenry, and then design studies that address them in a timely and effective manner. A focus on the implications for Louisiana of the changing energy environment distinguishes the Center from other organizations concerned with energy. The capability necessary to accomplish the basic mission of CES is funded by state appropriation. The resources to conduct or to participate in larger-scale interdisciplinary projects have come historically from grants and contracts from the federal and private sectors.

INFORMATION SERVICES DIVISION

The division provides energy information and analysis that responds to the needs of the legislature, public agencies, and business and civic groups. The Center maintains some unique energy databases and is the official repository of energy information from The Energy Council. CES staff responds regularly to requests from a wide variety of individuals and institutions for specialized energy data and information.

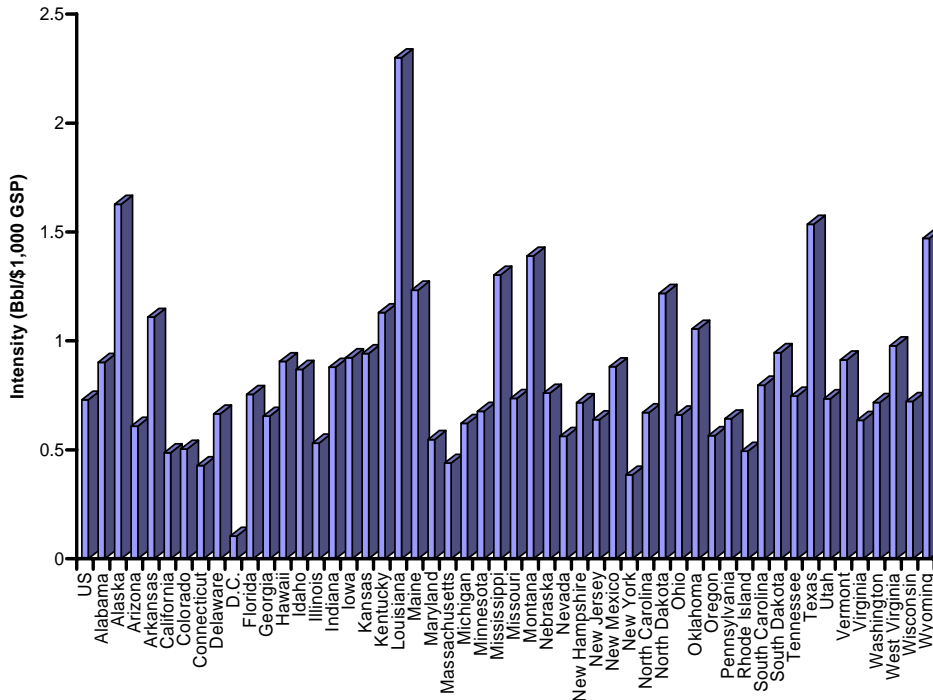
The LSU Center for Energy Studies hosted "Energy Summit 2004: Securing Louisiana's Economic Growth in a Volatile Energy

Environment" in October. The event covered a wide range of energy issues and how they relate to Louisiana's economic development:

- The future outlook of oil and gas development in the Gulf of Mexico.
- Do we need new refining capacity in the U.S.?
- What are the trends for domestic refined products markets and how do alternative transport fuels impact the reliability of refined products markets?
- What are the opportunities for the development of a hydrogen economy in Louisiana?
- Will there be enough or too much LNG?
- Is there a resurgence for nuclear power development in the U.S.?
- Is now the time to consider new coal generation facilities?

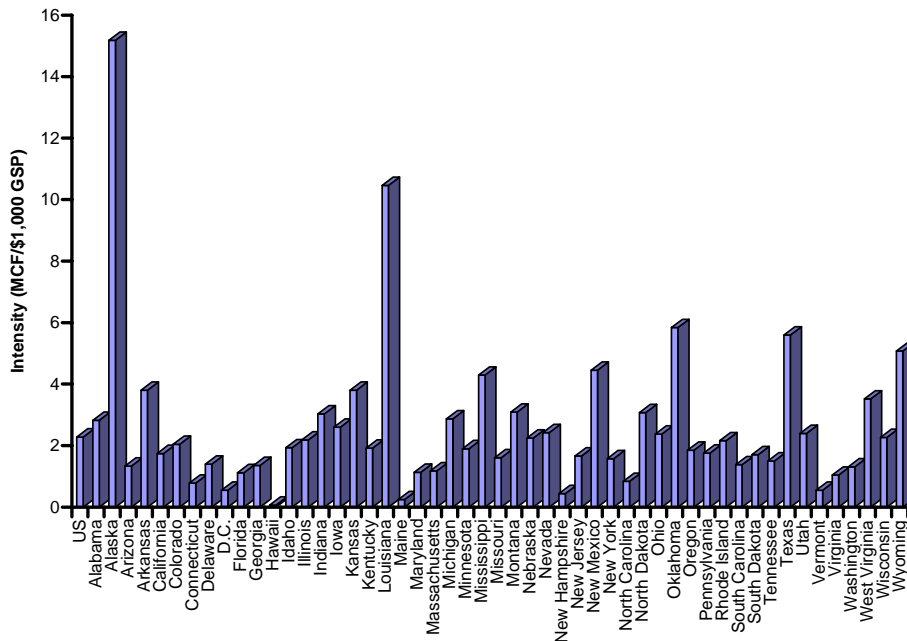
CES personnel also act in an advisory or expert capacity for legislative, executive, and regulatory branches of both the state and national governments and represent the state on energy-related organizations at both the regional and national level.

Oil Intensity in 2000: Barrels Consumed/\$1,000 Gross State Product



Data Source: Bureau of Economic Analysis and Energy Information Administration

Natural Gas Intensity in 2000: MCF Consumed/\$1,000 Gross State Product



Data Source: Bureau of Economic Analysis and Energy Information Administration

RESEARCH AND DEVELOPMENT DIVISION

The division administers the **Regional Central Gulf Region of the Petroleum Technology Transfer Council (CGR PTTC)**, which is a national non-profit organization founded in 1993.

The PTTC is financed by both the State and the U.S. Department of Energy (DOE). It serves as a national clearinghouse for the upstream (exploration and production) technology needs of the oil and gas operators. Operated jointly with the Department of Petroleum Engineering the CGR/PTTC is supported by a yearly DOE budget of \$162,000 and State matching funds of \$150,000. Donald Goddard is the coordinator of the program and also directs a related research program funded by DOE.

The CGR/PTTC four core tasks are

- Ongoing assessment of operators' needs.
- Services and outreach through resource centers.
- Technology transfer functions.
- Management of regional programs.

The subject and location of recent PTTC workshops for operators organized by the program included

- Coalbed Methane Resources in the Southeast: June 2004, Lafayette.
- Drilling & Completion Technologies for Deep Shelf Gas: April 2004, New Orleans.
- Application of Logging Tools for Improving Reservoir Interpretation: February 2004, Baton Rouge.
- Soil Remediation (Hydrocarbon & Brine): January 2004, Tyler, Texas.
- Reservoir Fluids 2003 - PVT and Beyond: November 2003, Lafayette.

- Managing Upstream Oil & Gas Producing Assets: September 2003, Baton Rouge.
- South Louisiana Onshore Petroleum Exploration Symposium Recent Discoveries – Bright Future: May 2003, New Orleans.
- Hydraulic Fracturing: April 2003, Shreveport.
- Asphaltene, Paraffin & Scale in Crude Oils Theory, Problems & Solutions: January 2003, Lafayette.
- DNR's SONRIS "New Features" Workshop Series in FY 2003: October and November 2003, Lafayette, Shreveport and Houston.
- DNR's SONRIS "New Features" Workshop Series in FY 2002: September 2002, Baton Rouge
- Reservoir Characterization Technology: April 2002, Shreveport.
- Optimized Horizontal Well Technology: March 2002, New Orleans.
- Field-Oriented Research Projects for Independents: (Results of various DOE & Operator funded projects), February 2002 Tyler, Texas.
- Essentials of Subsurface Mapping: January 2002, Lafayette.
- Louisiana Energy and the Environment: November 2001, Baton Rouge.
- Field-Oriented Research Projects for Independents: (Results of various DOE & Operator funded projects), October 2001, Jackson, Miss.

Along with the **Department of Petroleum Engineering**, the **Louisiana Geological Survey** has been an active partner in this program and a key contributor to its success.

In cooperation with the University of Alabama, the division also is undertaking two large multiyear research projects.

“My dad went to the eighth grade twice because he enjoyed school and that’s as far as school went, so the teacher kept him the next year and taught him a little bit more.”

My dad, he started as a roustabout and then he became what was called a gang pusher and he became what was called a head roustabout. There would be two or three gangs working and he would be the one that coordinated the work of all of them.”

And then he became the field foreman which was kind of a misnomer because he did whatever they wanted him to do.”

Tidewater Oil Company didn’t have drilling superintendents. They used field foremen to run their operations, their production operations, also to drill wells, to be the company man on the job telling the contractor what to do or to work over rigs.”



Photo courtesy of Moye Boudreaux.

This photograph and those that follow are from the project on the history of the offshore oil and gas industry that CES, along with researchers from the Universities of Arizona, Houston, and Louisiana at Lafayette, is conducting for the Minerals Management Service (see #6 on page 13). They were made available during oral history interviews conducted by researchers from the University of Arizona. The text accompanying some of the photos was also taken from the interviews.

(1) Basin Analysis and Petroleum System Characterization and Modeling, Interior Salt Basins, Central and Eastern Gulf of Mexico.

Donald Goddard and Ron Zimmerman in conjunction with Ernest A. Mancini and the University of Alabama.

Funding agency: U.S. Department of Energy. \$1,359,053 (Five years).

Work on the project began in June 2003. The first year of the project (tasks #1, #2, & 3#) completed in June 2004.

Description: Employing state-of-the-art computing facilities, researchers will model and characterize the petroleum-rich formations in two of the most important provinces in North America for oil and gas accumulations: the North Louisiana Salt Basin (which covers portions of Louisiana, Arkansas and Texas) and the Mississippi Interior Salt Basin in the northeastern Gulf of Mexico region. Information from the research will provide an advanced approach for targeting geologic "traps" where oil and natural gas may have collected. The models will be directed at aiding future exploration efforts for petroleum buried below 15,000 feet, well below the depth of most ongoing operations today.

(2) Resource Assessment of the In-Place and Potentially Recoverable Deep Natural Gas Resource of the Onshore Interior Salt Basins, North Central and Northeastern Gulf of Mexico.

Donald Goddard and Ron Zimmerman in conjunction with Ernest A. Mancini and the University of Alabama.

Funding agency: U.S Department of Energy. Project total funding: \$954,753 (Three years). Work began with data compilation in October 2003 and at the end of August 2004 the first year of the project (tasks #1 and #2) will be completed.

Description: The objectives of the study are to perform resource assessment of the in-place deep (>15,000 ft) natural gas resource

of the onshore interior salt basins of the North Central and Northeastern Gulf of Mexico areas through petroleum system identification, characterization, and modeling, and to use the petroleum system based resource assessment to estimate the volume of the in-place deep gas resource that is potentially recoverable and to identify those areas in the interior salt basins with high potential to recover commercial quantities of the deep gas resource.

POLICY ANALYSIS DIVISION

Research undertaken by the **Policy Analysis Division** of the Center currently has four concentrations:

- Policies and trends affecting the oil and gas industry, especially with respect to offshore development.
- The interrelationship between the energy sector and the larger economy, especially in Louisiana.
- Implications for Louisiana of the evolving retail and wholesale electricity markets. Both the effects on the price, availability, and reliability of electricity and on the economic development of the local and the state economy are being studied.
- The design and effectiveness of state and federal programs intended to assist low-income households to meet their energy bills, use energy more efficiently, or accomplish other social or governmental objectives.



JERRY WILSON
standing on boat,
in diving suit

*"The pipe goes down maybe
50-60 feet below the bottom.
This pipe is expensive.
They want to save as much
as they can. So you have to
go inside of this pipe from
the topside. They'd fill it with
water, then you went down
that pipe. It wouldn't do any
good to have
claustrophobia."*

— Joe Schouest

PROJECTS

THE OIL AND GAS INDUSTRY

(1) A Collaborative Investigation of Baseline and Scenario Information for Environmental Impact Statements.

David Dismukes and Kristi Darby
Funding Agency: U.S. Department of the Interior, Minerals Management Service
\$300,000 (Second year of a three-year project).

Description: The purpose of this research project is to provide Minerals Management Service (MMS) with primary and secondary source information about current industry activities and future trends that can be used for baseline and scenario analyses for the agency's Environmental Impact Study (EIS) investigations. The methods that will be employed for securing this information will be through an *Offshore Researchers Collaborative Process* (or Collaborative). This Collaborative will team industry, government, and academic researchers, and analysts. Separate groups will be designated by major offshore activity category with data collection, analysis, and commentary being directed by the project principal investigators. Information secured during this process will be provided to MMS for use in its ongoing EIS analyses.

(2) An Examination of Liquefied Natural Gas Facilities in the Gulf of Mexico.

David Dismukes and Kristi Darby.
Funding Agency: U.S. Department of the Interior, Minerals Management Service. \$52,273.

Description: This research will survey all the main issues associated with LNG development with a particular focus on the

implications that the wide-scale development of LNG will have on the Gulf coast. The topics that will be examined in the Gulf of Mexico (GOM)-specific analysis include: How do changes in natural gas markets impact the business case for developing LNG facilities? How do changes in natural gas markets impact the business case for continued development of resources in the GOM (shelf and deepwater)? Are there any interactions between the supplies associated with LNG and traditional GOM exploration and production (E&P)? How does LNG impact the existing oil and gas industry infrastructure within the GOM? and What impacts the business case for developing LNG facilities either offshore or onshore? Several variations of LNG facilities have been proposed in the Gulf. This research will examine the benefits and costs of this development.



(3) Profitability of Offshore Petroleum Ventures and Operations: Empirical Evidence from Oil and Gas Lease Sales and Development in the

Gulf of Mexico, 1983-1999.

Omowumi O. Iledare, Allan Pulsipher, and Mark Kaiser.

Funding agency: U.S. Department of the Interior, Minerals Management Service and LSU's Coastal Marine Institute. \$125,000.

Description: This study analyzes the economic attributes of petroleum producing leases owned by firms of different sizes in the Gulf of Mexico OCS region since the inception of the area-wide leasing program in 1983. Petroleum decision economic analysis and regression analytical approach will be used to examine whether firms of different sizes acquire leases with significantly different expectations since

area-wide leasing began in 1983 and in the aftermath of the merger/acquisition wave of the last two decades. The study seeks to confirm whether or not the profitability of offshore ventures in the U.S. and the bonus payments to the Federal government in exchange for the rights of the private sector to develop oil and gas resources in offshore leases have remained essentially and significantly consistent over the years.

(4) Forecasting the Explosive Removal of Offshore Structures.

Mark Kaiser, Dmitry V. Mesyanzhinov, and Allan Pulsipher.
Funding agency: U.S. Department of the Interior, Minerals Management Service, and LSU's Coastal Marine Institute.
\$175,955.

Description: The purpose of this study is to provide a forecast of the explosive removal of offshore structures from the Gulf of Mexico in support of the MMS petition to the National Marine Fisheries Services (NMFS) reauthorization of Subpart M Regulations (50CFR, §216) which expired on November 13, 2000. A statistical description of the explosive removal of offshore structures in the federally regulated Outer Continental Shelf of the Gulf of Mexico is presented based on data collected by the MMS. The influence of factors such as water depth, planning area, configuration type, structure age, and company preference for removal method is investigated. The number of structures that is expected to be removed from the Gulf of Mexico using explosive methods is also forecast over a short-term and medium-term time horizon according to structure configuration type, water depth, and a planning area categorization. The development of predictive models to estimate the method



and cost of decommissioning offshore structures is also under investigation.

(5) Idle Iron, Scrap, and Reuse in the Gulf of Mexico: Issues, Perspectives, and Policy.

Mark Kaiser, David Dismukes, and Allan Pulsipher.
Funding agency: U.S. Department of the Interior, Minerals Management Service and LSU's Coastal Marine Institute.
\$129,745.

Description: The Minerals Management Service (MMS) requires that all structures on a leasehold be removed within one year after production on the lease ceases. Recently, the MMS has begun to encourage operators in the Gulf of Mexico (GOM) to remove structures on a lease when they are not “useful” (i.e., “economically feasible”). The purpose of this proposal is to examine the issue of “idle iron” in a generalized conceptual framework, inventory idle iron, and

trace out the reuse and recycle pathways of decommissioned structures.

The purpose of this project is to address and resolve questions such as: How much idle iron is in the GOM and who owns it? What are the economic and environmental tradeoffs involved in onshore versus offshore storage? Where does scrap metal go after decommissioning and to what extent is it being reused? What factors determine reuse decisions? What is the likely impact of policies that promote/require the removal of idle iron? What are the general trends of the scrap, reuse, and recycle markets in the GOM?

(6) History of the Offshore Oil and Gas Industry in Louisiana.

Allan Pulsipher, Ric Pincomb, Don Davis, (Diane Austin, Bob Carriker, Robert Gramling, Tom McGuire, Joseph Pratt and Tyler Priest)

Funding agency: Minerals Management Service. Four years at approximately \$900,000.

Description: The Center is currently coordinating a multi-year project intended to provide the Minerals Management Service with an objective and comprehensive history of the evolution of the industry. In cooperation with the Universities of Arizona, Houston, and Louisiana at Lafayette, the perspectives from the firms, workers, and communities that participated in the industry’s development and evolution are being recorded and archived. An interim report has been published with the final report due next year.



(7) Coordinated Regional Benefit Studies of Coastal Ocean Observing Systems.

Allan Pulsipher and Mark Kaiser.
Funding agency: National Oceanographic Partnership Program, Office of Naval Research. Project funding: \$49,996.

Description: A number of coastal and ocean observation systems exist throughout the Gulf of Mexico, but the network of systems is not currently linked or integrated, and at present not fully implemented. The network of local systems is diverse, typically involving unique mandates and several different funding sources at various levels of permanence. The purpose of this study is to describe the ocean observation systems that currently exist in the Gulf of Mexico, and to identify and quantify the expected economic

benefits that may result from the implementation of a regional and integrated network. Improved ocean observation systems are expected to reduce the uncertainty of ocean/weather forecasting and to enhance the value of ocean/weather information throughout the Gulf region. The source of benefits and the size of activity from which improved ocean observation benefits may be derived are estimated for private sector, non-market, and public sector activities categorized according to marine transportation, commercial fishing, recreational fishing, search and rescue operations, and pollution management. The benefits of improved ocean observation systems to energy exploration, development, and production activities are estimated, and a discussion of potential benefits to lightering activities, environmental monitoring, delayed royalty, and engineering design are highlighted.

ENERGY AND ECONOMIC DEVELOPMENT

(1) The Economic Opportunities of LNG.
David Dismukes, Kristi Darby and Jeff Burke.
Funding Agency: Greater New Orleans, Inc. and Louisiana Department of Economic Development. \$25,000.

Description: This project examined the importance of LNG facilities to Louisiana. The study was presented in three major parts. The first part of the study outlined the nature of LNG and why it is being considered as a resource to supplement current U.S. gas supplies. The second section of the report examined the importance of natural gas usage to the Louisiana economy, particularly to the petrochemical industry in the state. The third section of the report presented the

results from a number of economic impact models. These models included the estimation of economic impacts associated with the construction of the facilities in Louisiana, the operation of proposed LNG facilities in Louisiana, and the impacts that lower-cost gas resources would have on Louisiana industry.

(2) An Examination of Royalty Relief on State Leases. David Dismukes, Robert Baumann and Dmitry Mesyanzhinov.
Funding Agency: Louisiana Department of Natural Resources.
\$74,492.

Description: This project examined the possibilities of offering royalty relief to marginal oil and gas leases owned by the state. The research focused on three primary tasks: (1) identifying marginal oil and gas properties; (2) estimating the potential increased production that could be stimulated from a limited royalty relief program; and (3) estimating the increased severance and royalty changes from this increased production as well as the economic impacts (i.e., new economic output and employment) generated from the stimulated activities. The study found there were limited opportunities for royalty relief in the state and that any program developed should be done on a profitability basis.

(3) The Economic Impacts of Oil and Gas Exploration and Production Activities on State Leases.
David Dismukes, Robert Baumann and Dmitry Meshyanzhinov.
Funding Agency: Louisiana Department of Natural Resources.
\$8,000.

Description: This project examined the importance of oil and gas activities on state leases, and the overall importance of the management of these resources to the state's economy. The study found that, over the period examined (1995-2000), oil and gas activities generated close to \$1 billion in economic activity, and over a half a billion

in taxes and additional revenues. The Interstate Oil and Gas Compact Commission issued a "Best Practices" research award to the Louisiana Office of Minerals Resources for commissioning the study and its approach.

(4) Economic Effects of the Dynamics of Oil and Gas Prices and Petroleum Resource Development in Louisiana State Offshore Waters.
Omowumi Iledare and Williams Olatubi.
Funded Agency: Minerals Management Service. \$83,430.

Description: The implications of the current changing dynamics of crude oil and natural gas prices on petroleum E&P activity and regional or global macroeconomic policy variables are of great importance to public policy makers. These concerns are based on past experiences and the consequences of the volatility in world oil prices observed in the 1970s, the mid 1980s and more recently in 1998. These changes in crude oil and natural gas prices have affected oil and gas industry dynamics and the significance of the industry as a prime mover of regional or national economic growth. For example, Louisiana, a southern U.S. state that would otherwise have ranked at the very bottom in per capita income, enjoyed significant economic growth relative to most other southern U.S. states because of its extensive petroleum resource endowments. On the other hand, the loss of significant employment in the state due to the downturn in the oil and gas business over the past three decades has led to the suggestion that the oil and gas industry in Louisiana, the "engine" that drove the Louisiana economy for decades, has now stalled. The purpose of this study is to model the interrelationship between selected macroeconomic variables, E&P activity in Louisiana state offshore waters, and changes in the dynamics of oil and natural gas prices. Quantitative techniques are used to test the nature of

these relationships and to provide empirical measures of the economic effects of changes in crude oil and natural gas prices on petroleum industry activities in offshore state waters.

(5) Accounting for Economic Change in the Gulf of Mexico: Developing a Comparative Context for Cumulative Socioeconomic Effects on Coastal Communities.

Allan Pulsipher, Wumi Iledare and David Dismukes.

Funding agency: Minerals Management Service. \$139,560.

Description: Similar movements in per person personal income may be caused not only by different trends but also by factors that would be considered either signs of economic health or signs of economic illness. Consider an increase in per person personal income caused largely by a massive out-migration of poorer residents in search of employment elsewhere and an increase in per person personal income resulting from an influx of high paying jobs in “high tech” industries. Statistically, both can cause the same increase in per person personal income, but the implications about relative economic performance are very different. In this project factors such as changes in industry mix, real wages, participation in the labor force, growth or decline of the labor force, transfer payments and other governmental spending, and other income such as interest, profits and rent, are compared for the coastal and non-coastal parishes of Louisiana for each of the business cycles occurring during 1960 to 2000. This was the period when offshore oil and gas development became a major force in the State’s economy. Patterns of change and the factors responsible for them are compared for the two groups of parishes in an effort to understand the cumulative effects of offshore development on coastal communities.

ELECTRICITY

(1) The Economic Opportunities for a Limited Industrial Retail Choice Plan.

David Dismukes.

Funding Agency: Private Industry.

Description: This project estimated the potential savings and economic impacts associated with allowing large industrial customers with loads greater than 5 MW to choose their own providers of natural gas. The study examined the importance of electricity prices for Louisiana industry and surveyed recent experiences and trends in industrial electricity prices for the region and the state. A model was developed to estimate the potential savings from allowing these customers to choose their own providers under a number of different scenarios. The annual savings estimates ranged from \$211 million to \$69 million. The Louisiana Public Service Commission has formally requested comments from the State’s utilities and other interested parties on this study.

(2) The Power of Generation: Continued Economic Benefits from Independent Power Generation in Louisiana.

David Dismukes.

Funding: Internal.

Description: This project estimated the economic impacts associated with merchant generation in Louisiana. The study updated an earlier, important, and well-cited analysis of the topic and investigated the benefits of independent power generation in light of the Enron crisis and the deterioration of the wholesale marketing portion of the industry. The study found that there were still well over \$4 billion in new capital investments associated with the construction of new generation facilities despite the fact that close to half had been cancelled due to the industry’s downturn. The study was also well cited for its estimation of the economic dispatch opportunities in the Gulf South by moving to more efficient dispatch of power generation facilities in the region. The study

found more than \$800 million in efficiency savings opportunities for the region. The study was recognized by the Federal Energy Regulatory Commission (FERC), which requested comments on its results and conclusions.

(3) Moving to the Front of the Lines: The Economic Benefits from Independent Power Generation in Louisiana.

David Dismukes.

Funding Agency: Internal.

Description: This study, one of the first of its kind, examined the economic benefits of independent power generation on the Louisiana economy. The study, which was widely cited at the time, examined the impact that the construction, operation, and dispatch of merchant facilities could have on the Louisiana economy if developed. The study found that the announced merchant generation in the state represented close to a \$7.8 billion capital investment in the Louisiana economy, one of the largest investment trends in any single sector of the Louisiana economy in over a decade. More than 13,000 jobs were estimated to be created in the construction of these facilities. The study discussed significant supply side efficiency opportunities that also were created by the development of these facilities and the retirement of a considerable number of older, high heat rate units in the region.

ENERGY ASSISTANCE AND CONSERVATION PROGRAMS

Evaluation of the Louisiana Energy Fund and the Home Energy Rebate Option Programs.

Mark Kaiser and Allan Pulsipher.

Funding Agency: Louisiana Department of Natural Resources, \$71,309.

Description: The Louisiana Energy Fund is a public-private cooperative endeavor created by the Louisiana Department of Natural Resources in partnership with the Louisiana Public Facilities Authority, Hibernia National Bank, and Lehman Brothers to provide publicly funded institutions with low-cost, tax exempt financing to implement energy and water conservation projects in the state. In September 2002, the Louisiana Bond Commission authorized \$15.3 million dollars in tax-exempt bonds to help “buy down” the interest rate and fund seven energy and water retrofit performance contracts. The purpose of this study is to evaluate the expected economic, energy, and environmental impact of the performance contracts awarded during the first phase of the program. An input-output model is developed to quantify the expected total economic benefit, and based on the specifications of the performance contracts, the energy and environmental impacts for the program are estimated. In the second part of this study, the energy savings generated by the Louisiana Home Energy Rebate Option program will be evaluated using Measured and Verified (M&V) protocol standards.



“There would be maybe only three houses or apartments together in any particular little group. And of course they were just like sisters, the women that stayed home and raised the kids. There was one that was a school teacher... they were extremely dependent on each other”

“They paved the road sometime around 1953”

Photo courtesy of Moye Boudreaux.

PUBLICATIONS 2002-2004

(A complete list is available at the CES website, www.enrg.lsu.edu.)

THE OIL AND GAS INDUSTRY

Dismukes, D. E. and D. V. Mesyanzhinov. Alaska in-state natural gas demand study. Alaska Department of Natural Resources, Division of Oil and Gas. 2002.

Dismukes, D. E., D. V. Mesyanzhinov (with W. Nebesky). New role for North Slope gas in South-central Alaska. *Natural Gas* 19(2):10-15. 2002.

Goddard, D. A. (with R. K. Zimmerman). Shallow Miocene and Oligocene gas potential: southeastern Louisiana's Florida parishes. *GCAGS/GCSSEPM Transactions* 53:287-301.

—. Southeast Louisiana's shallow gas potential: E&P opportunities for the independent operator. Baton Rouge: Louisiana State University, Center for Energy Studies, March 2002.

Goddard, D. A. (with S. C. Talukdar). Cretaceous fine-grained mudstones of the Maracaibo Basin, Venezuela. *GCAGS Transactions* 52:1093-1101. 2002.

Goddard, D. A. (with R. K. Zimmerman, C. D. White, and M. N. Birdwell). Dominant structural and stratigraphic characteristics influencing hydrocarbon production distribution in Louisiana's Livingston Field. *GCAGS Transactions* 52:337-349. 2002.

Iledare, O. O. An appraisal of the outlook for hydrocarbon resources potential in the U.S. Gulf of Mexico Outer Continental Shelf. Presentation at the 2004 International Seminar on Strategic Natural Resources organized by the Center for Investigation on North America, National University of Mexico, Mexico City, May 27-28, 2004.

Iledare, O. O., A. G. Pulsipher, W. O. Olatubi, and D. V. Mesyanzhinov. An empirical analysis of the determinants and value of high bonus bids for petroleum leases in the U.S. outer continental shelf (OCS). *Energy Economics* 26(2):239-259. 2004.

“Positive shocks to oil and gas prices and production variation increase the economic performance of coastal Gulf States of Texas, Louisiana, Mississippi and Alabama. However, there is no symmetry in the effects of these price shocks and changes in petroleum production on economic performance indicators across these Gulf States. There are also significant differences in the duration of the lingering economic effects of price shocks and changes in production among these states. The duration varies depending upon whether the state is a net petroleum exporter or net importer, and whether the state has a diversified economic base or structure.” (The Energy Journal 25(2):97-114. 2004.)

—. The impact of changes in crude oil prices and offshore oil production on the economic performance of U.S. coastal Gulf States. *The Energy Journal* 25(2):97-114. 2004.

Iledare, O.O. OPEC oil production strategy and its implication on global oil market stability. *Proceedings of the Society of Petroleum Engineers Hydrocarbon Economics and Evaluation Symposium, Dallas, April 5-8, 2004*. SPE Paper #82041.

Iledare, O. O., W. O. Olatubi, and A. G. Pulsipher. Onshore effects of offshore petroleum production: a case study of the U.S. Gulf of Mexico Outer Continental Shelf (OCS) and the Louisiana economy. Paper

presented at the Annual SPE International Technical Conference & Exhibition, Abuja, Nigeria, August 4-7, 2004. SPE Paper #85657.

Iledare, O. O. (with D. Nottingham). Factors affecting the shareholder value in the E&P industry: an appraisal. Proceedings of the SPE Annual International Conference & Exhibition, Abuja, Nigeria, August 5-8, SPE Paper #79180. 2002.

Iledare, O. O., A. G. Pulsipher, and D. V. Mesyanzhinov. Effects of firm size and corporate alliances on the market for offshore oil and gas leases: empirical evidence from the Gulf of Mexico OCS, 1983-1999. *USAAE Dialogue* 10(3):10-13. 2002.

Kaiser, M. J. and A. G. Pulsipher. *Fiscal system analysis: concessionary and contractual systems used in offshore petroleum arrangements*. Prepared for the U.S. Department of the Interior, Minerals Management Service by Louisiana State University, Center for Energy Studies, March, 2004. MMS 2004-016, 78pp.

Kaiser, Mark J. and Allan G. Pulsipher "A Meta-Modeling Approach to Fiscal Systems Analysis. Part 1: Concessionary Systems," *Petroleum Accounting and Financial Management*, 23(2)13-38, Summer 2004.

Kaiser, Mark J., Allan G. Pulsipher, and Robert C. Byrd, "The Science and Technology of Nonexplosive Severance Techniques," *Marine Technology Society Journal*, 38(1)30-39, Spring 2004.

Kaiser, M.J. and A.G. Pulsipher, "A binary choice severance selection model for the removal offshore structures in the Gulf of Mexico," *Marine Policy*, 28 (2004): 97-115.

Kaiser, M. J. and A. G. Pulsipher. Gulf of Mexico decommissioning-1: various factors affect severance selection. *Oil & Gas Journal* 102(36):41-52. 2004.

Kaiser, M. J., A. G. Pulsipher, and R.C. Byrd. Gulf of Mexico decommissioning-2: Abrasive Cutting offers one option. *Oil & Gas Journal* 102(37):37-43. 2004.

Kaiser, M. J., D. V. Mesyanzhinov, and A. G. Pulsipher. *Long-term oil and gas structure installation and removal forecasting in the Gulf of Mexico: A decision- and resource-based approach*. Prepared for the U.S. Department of the Interior, Minerals Management Service by Louisiana State University, Center for Energy Studies, May. MMS 2004-009, 56pp.

Kaiser, M. J. and A. G. Pulsipher. A binary choice model for the removal of offshore structures in the Gulf of Mexico. *USAAE Dialogue* 11(1):20-24. 2004.

—. A generalized modeling framework for public benefit fund program valuation. *Energy* 28:519-538. 2003.

—. Fiscal meta-modeling-1: new approach offered to smooth fiscal system analysis and design. *Oil & Gas Journal* 101(43):42-46. 2003.

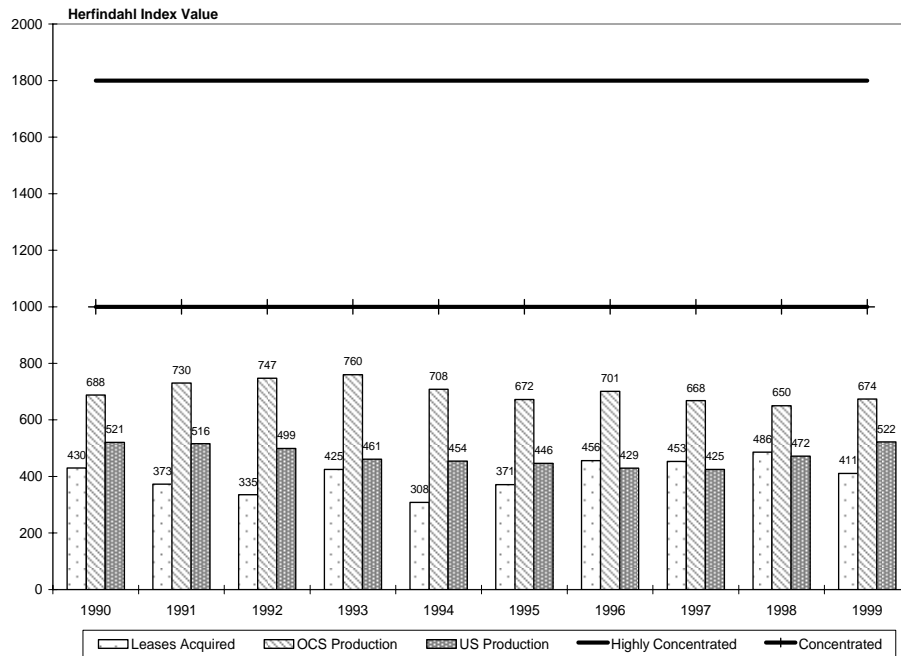
—. Fiscal meta-modeling-2: meta-modeling system applied to Gulf's Na Kika fields group. *Oil & Gas Journal* 101(44):43-45. 2003.

Kaiser, M.J. and A.G. Pulsipher, "The Cost of Explosive Severance Operations in the Gulf of Mexico," *Ocean and Coastal Management*, 46(6-7):701-740, May 2003.

Kaiser, Mark J., Allan G. Pulsipher, and Robert C. Byrd, "Decommissioning Cost Functions in the Gulf of Mexico," *ASCE Journal of Waterway, Port, Coastal and Ocean Engineering*, 129(6), November, 2003.

Kaiser, M. J., D. V. Mesyanzhinov, and A. G. Pulsipher. Explosive removals of offshore structures in the Gulf of Mexico. *Ocean & Coastal Management* 45(8):459-483, 2002.

Figure ES1—Herfindahl Indices of Industry Competitiveness



Pulsipher, A. G., O. O. Iledare, and D. V. Mesyanzhinov. *Changing patterns of ownership and control in the petroleum industry: implications for the market for oil and gas leases in the Gulf of Mexico OCS region, 1983-1999*. Prepared for the U.S. Department of the Interior, Minerals Management Service by Louisiana State University, Center for Energy Studies, October, 2003. MMS 2003-041, 86pp.

“Neither aggregate measures used to analyze concentrated market and industry structures, nor patterns of joint bidding among firms active in the offshore Gulf of Mexico suggest a decrease or a deficiency in the competitiveness of the lease sales held by the U.S. Minerals Management Service (MMS). Whether leases acquired at the sales, or production by firms bidding for leases, are used as the base of the concentration measures, they indicate a competitive industry bidding for leases in a competitive market. (Changing patterns of ownership and control in the petroleum industry: implications for the market for oil and gas leases in the Gulf of Mexico OCS region,” 1983-1999. page 14.)

Pulsipher, A. G. (with D. Austin, B. Carriker, T. McGuire, J. Pratt, and T. Priest). 2004. *History of the offshore oil and gas industry in southern Louisiana: Interim report; Volume I: Papers on the evolving offshore industry*. Prepared for the U.S. Department of the Interior, Minerals Management Service by Louisiana State University, Center for Energy Studies, July, 2004. MMS 2004-049, 98 pp.

(T. McGuire). *History of the offshore oil and gas industry in southern Louisiana: Interim report; Volume II: Bayou Lafourche - An oral history of the development of the oil and gas industry*. Prepared for the U.S. Department of the Interior, Minerals Management Service by Louisiana State University, Center for Energy Studies, July 2004. MMS 2004-050, 148pp.

(D. Austin and T. McGuire). *History of the offshore oil and gas industry in southern Louisiana: Interim report; Volume III: Samples of interviews and ethnographic prefaces*. Prepared for the U.S. Department of the Interior, Minerals Management Service by Louisiana State University, Center for Energy Studies, July 2004. MMS 2004-051, 74pp.

ENERGY AND THE ECONOMY

Baumann, R. H., D. E. Dismukes, D. V. Mesyanzhinov, and A. G. Pulsipher. *Analysis of the economic impact associated with oil and gas activities on state leases*. Prepared for the Office of Mineral Resources, a division of the Louisiana Department of Natural Resources by Louisiana State University, Center for Energy Studies, March 2002.

Dismukes, D. E. and D. V. Mesyanzhinov (with E. A. Downer). *Economic opportunities for LNG development in Louisiana*. Prepared for the Louisiana Department of Economic Development and Greater New Orleans, Inc. by Louisiana State University, Center for Energy Studies, April 2004.

“Failure to act on LNG development (less than 6 new plants), in addition to other negative resource development factors, could lead to the worst case, ‘do nothing,’ scenario which would have devastating impacts on Louisiana’s economy:

-As much as \$2,803 million cost (negative impact) associated with the higher cost gas associated with low LNG development.

-As many as 61,926 jobs could be lost.” (Economic opportunities for LNG development in Louisiana)

Dismukes, D. E., D. V. Mesyanzhinov, J. M. Burke, and R. H. Baumann. *Marginal oil and gas production in Louisiana: An empirical examination of state activities and policy mechanisms for stimulating additional production*. Prepared for the Office of Mineral Resources, a division of the Louisiana Department of Natural Resources by Louisiana State University, Center for Energy Studies, April 2004.

“The empirical examination of production on state leases, and Louisiana in general, shows some significant changes. In particular, there has been a noticeable increase in production declines as indicated by the sharp drop in post peak year production. Further, there has been an equally impressive increase in well productivity, as measured by production per well, over the same period of time. This would tend to indicate that overall state oil and gas production is being maintained by a relatively few number of newer, more productive wells. The future disposition of production, and state mineral revenues, could be significantly impacted should drilling activity stop, or slow considerably in Louisiana.” (Marginal oil and gas production in Louisiana.)

Dismukes, D. E., D. V. Mesyanzhinov, and J. M. Burke (with W. E. Nebesky). Alaskan north slope gas pipeline gives results hard to quantify. In *Electric & Natural Gas Business: Understanding It!*, R. E. Willett, ed. Houston, TX: Financial Communications Company, 185-205. 2003.

Dismukes, D. E., W. O. Olatubi, D. V. Mesyanzhinov, and A. G. Pulsipher. *Modeling the economic impacts of offshore oil and gas activities in the Gulf of Mexico: methods and applications*. Prepared for the U.S. Department of the Interior, Minerals Management Service, by Louisiana State University, Center for Energy Studies, March. MMS 2003-018, 88pp.

Iledare, O. O. and W. O. Olatubi. *Effects of changes in oil and gas prices and State offshore petroleum production on the Louisiana economy, 1969-1999*. Prepared for the U.S. Department of the Interior, Minerals Management Service, by Louisiana State University, Center for Energy Studies, August, 2004. MMS 2004-052, 45pp.

“Thus, oil and gas prices are still important in short-term fluctuations in employment and personal income, but less so for state revenue. In addition, while there are some differences between oil and gas prices, the pattern of effects on the economy is similar in many respects. It is noted, however, that gas prices have potential of a more destabilizing effect on the economy in the long run than oil prices. It is also noted that only a sustained relatively high positive

movement in petroleum prices can have a long-lasting impact on Louisiana economy, in the context of state offshore oil and gas production. Finally, in the absence of significant price movements, autonomous changes in production in state offshore waters no longer play a prominent role in Louisiana economic activities.” (MMS OCS Study 2004-052.)

—. The impact of changes in crude oil prices and offshore oil production on the economic performance of U.S. coastal Gulf States. *The Energy Journal* 25(2):97-114. 2004.

Olatubi, W. O. and D. E. Dismukes. Do deepwater activities create different economic impacts to communities surrounding the Gulf OCS? *IAEE Newsletter*, 2nd Quarter, 16-20. 2002.

Olatubi, W. O. (with D. W. Hughes). Natural resource and environmental policy trade-offs: a CGE analysis of the regional impact of the Wetland Reserve Program. *Land Use Policy* 19(3):231-241.

ELECTRICITY

Dismukes, D. E. Affordable energy: the key component of a strong economy. Presentation at the National Association of Regulatory Utility Commissioners (NARUC) 115th Annual Meeting, Atlanta, November 16-19.

—. Competitive bidding in the electric power industry. *Proceedings of the Association of Energy Engineers*, New Orleans, December 12.

Dismukes, D. E. and D. V. Mesyanzhinov. Economic displacement opportunities in southeastern power markets. *USAEE Dialogue* 11(3):20-24. 2003.

Dismukes, D. E., D. V. Mesyanzhinov, and J. M. Burke (with E. A. Downer). *The power of generation: continued economic benefits from independent power development in Louisiana*. Baton Rouge: Louisiana State University, Center for Energy Studies, April 2003.

“Under an average savings approach, savings for industrial customers could range from as high as \$84 million to \$212 million per year; the net economic impacts to the Louisiana economy (adjusting for out-of-state leakages) could range from \$55 million to \$118 million per year; the employment created from an industrial choice plan ranges from a high of 454 jobs to a low of 202 jobs. Under a fixed heat rate approach, savings for industrial customers could range from as high as \$69 million to \$130 million per year; the net economic impacts to the Louisiana economy (adjusting for out-of-state leakages) could range from \$47 million to \$76 million per year; the employment created from an industrial choice plan ranges from a high of 292 jobs to a low of 173 jobs.” (The Power of Generation.)

Dismukes, D. E. (with K. E. Hughes II). An electric utility's exposure to future environmental costs: does it matter? You bet! *Oil, Gas & Energy Quarterly* 52(2):457-469. 2003.

—. "Clear skies" or storm clouds ahead? The continuing debate over air pollution and climate change. *Oil, Gas & Energy Quarterly* 51(4):823-848. 2003.

—. What happened to the merchant energy industry? Issues, challenges and outlook. *Oil, Gas & Energy Quarterly* 51(3):635-652. 2003.

—. White paper or white flag: do FERC's concessions represent a significant withdrawal from wholesale power market reform? *Oil, Gas & Energy Quarterly* 52(1):197-207. 2003.

Dismukes, D. E. (with R. F. Cope III and J. W. Yeargain). Reflections on the U.S. electric power production industry: precedent decisions vs. market pressures. *Journal of Legal, Ethical, and Regulatory Issues*. 6(1). 2003.

Dismukes, D. E. and J. M. Burke (with M. J. Collette and R. D. Priddy). Distributed energy resources show promise wellhead to burnertip. In *Natural Gas & Electric Power Industries Analysis 2002 edition*, R. E. Willett, ed. Houston, TX: Financial Communications Company, 114-131.

Dismukes, D. E. (with F. I. Denny). *Power system operations and electricity markets*. New York: CRC Press, 134pp. 2002.

Mesyanzhinov, D. V. and D. E. Dismukes. The U. S. hydroelectric power industry: trends and perspectives. In *Renewable Energy: Trends Prospects*, S. K. Majumdar, E. W. Miller, and A. I. Panah, eds. University Park, PA: Pennsylvania State University Press, 133-146. 2002

Pulsipher, A. G. One cheer for the Frist/Alexander plan to remodel TVA. *The Electricity Journal* 17(6):39-50. 2004.

“Frankly, with a few exceptions, TVA’s problems are as much a consequence of the judgment and leadership of the members of the board as they are of the board’s structure. Political considerations rather than industry experience and accomplishment have dominated the selection process. The result has been a succession of inexperienced individuals often of modest accomplishments trying to lead a large and complex organization through unusually difficult circumstances. The proposed plan offers no remedy for this problem. A pragmatic approach consistent with Senators Frist and Alexander’s objectives would be to fill some of the slots on the board with sitting members of the public utility commissions in the states served by the TVA power system, selecting them either through the respective governors or the respective state’s legislature. In addition to ensuring a degree of regulatory and industry experience, such an arrangement would also provide needed linkages and avenues for accountability to the variety of regional, geographical interests in the TVA system.” (One cheer for the Frist/Alexander plan to remodel TVA.)

Pulsipher, A. G. Testimony at hearing on the Tennessee Valley Authority and financial disclosure before the U.S. Senate Committee on Banking, Housing, and Urban Affairs. U.S. Senate, 107th Congress, 2nd session, September 17, 2002, pp. 25-27 and 44-46.

ENERGY ASSISTANCE AND CONSERVATION PROGRAMS

Kaiser, Mark J., Allan G. Pulsipher, and Robert H. Baumann. The potential economic and environmental impact of a public benefit fund in Louisiana. *Energy Policy* 32 (2004):191-206. 2004.

Kaiser, Mark J. and Allan G. Pulsipher. WAP explained. *Energy Policy* 32:1843-1860: 2004.

Kaiser, M. J. and A. G. Pulsipher. The design of a dynamic allocation mechanism of the federal energy assistance program LIHEAP. *European Journal of Operations Research* 158:773-792. 2004.

Kaiser, M.J. and A.G. Pulsipher, “An empirical investigation of the 1995 Weatherization Assistance Program funding formula,” *Energy*, 29:1001-1038. 2004.

Kaiser, M. J. and A. G. Pulsipher. LIHEAP reauthorization: is the time right for a formula fight? *The Electricity Journal* 16(5):65-77. 2003.

“Defenders of the status quo may be right that if the inherently divisive issues of interstate distribution are raised, it is risky to assume the rationale for the program is strong enough to

withstand pressures created by growing budget deficits. The ultimate question may be: are the current lower returns to Southern and Western states still significant enough to persuade them that raising the interstate equity issue is a risk not worth taking?" (LIHEAP reauthorization: is the time right for a formula fight?)

———. A generalized modeling framework for public benefit fund program valuation. *Energy* 28:519-538. 2004.

———. Resource allocation modeling for a Louisiana Public Benefit Fund program. *Energy Economics*. 25(2003):639-667.

Kaiser, M.J. and A.G. Pulsipher, "The impact of hold-harmless and give-back provisions on the Low-Income Home Energy Assistance Program allocation mechanism." *Energy* 28 (2003)1615-1654.

———. LIHEAP reconsidered. *Energy Policy* 31(14):1441-1458. 2003.

———. The WAP funding formula: ambiguous, contentious, forgotten. *The Electricity Journal* 16(9):68-82. 2003.

Kaiser, M. J. and A. G. Pulsipher. LIHEAP as a textbook case of government befuddlement. *Electricity Journal* 15(5):70-92. 2002.

"A complex and convoluted formula is not necessarily a 'bad' formula, but it is not clear what the final state allocation percentages even mean . . . Four separate formulas are entangled with the 1981 formula allocation percentages . . . And each one is biased toward cold-climate states. The most egregious aspect of the 1981 'formula' however, is that the allocation mechanism does not distribute funds based on the need for home energy assistance . . . the formula defines need implicitly and indirectly and although the home heating needs of cold-climate states may have been particularly severe in the early 1980s, it is now the year 2002 and the distribution of federal dollars based on an archaic and cryptic formula can be improved. (LIHEAP as a textbook case of government befuddlement.)

CES STAFF

Robert H. Baumann

Director of Research and Development
rbaumann@lsu.edu

Kristi A. R. Darby

Research Associate
kdarby@lsu.edu

David E. Dismukes

Associate Director, Associate Professor
dismukes@lsu.edu

Donald A. Goddard

Coordinator and Associate Professor
dgodda1@lsu.edu

Omowumi O. Iledare

Professor
wumi@lsu.edu

Mark J. Kaiser

Associate Professor
mkaiser@lsu.edu

Barbara S. Kavanaugh

Head, Information Services
epkava@lsu.edu

Ann Lewis

Word Processor Operator Spec 1
aglewis@lsu.edu

Ric Pincomb

Research Associate
rpincom@lsu.edu

Marybeth T. Pinsonneault

Communications Manager
mtherio@lsu.edu

Allan Pulsipher

Executive Director,
Marathon Oil Company Professor
of Energy Policy
agpul@lsu.edu

Stacy Retherford

Computer Analyst
stacy@lsu.edu

Diana Reynolds

Assistant to the Executive Director
dreynol@lsu.edu

Versa Stickle

General Librarian
vstickle@lsu.edu

Mike Surman

Computer Analyst
msurman@lsu.edu

GRADUATE STUDENTS

Rupesh Boorugu

M.S. Candidate in Industrial Engineering

Jeff Burke

Ph.D. Candidate in Agricultural Economics

Victoria Caridas

Ph.D. Candidate in Geography

Chad Gary

M.B.A. Candidate

Bryan Landry

M.A. Candidate in Economic Geography

Drew Smith

M.P.A. Candidate

Pankaj Uppalapati

M.S. Candidate in Electrical Engineering

Kevin (Hui) Wang

Ph.D. Candidate in Economics



CENTER FOR ENERGY STUDIES

Energy, Coast, and Environment Building

Louisiana State University

Nicholson Drive Extension

Baton Rouge, Louisiana 70803

Telephone: 225-578-4400

Fax: 225-578-4541

www.enrg.lsu.edu

4/05