Regional Economic Stimulus of Coastal Alabama Exploration and Development

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1. History of Coastal Alabama Natural Gas Exploration and Development

Following the 1979 discovery of Norphlet gas in Mobile Bay, the Coastal Alabama region experienced the emergence of a large offshore gas industry. A report by Foster Associates, History of Coastal Alabama Natural Gas Exploration and Development, (MMS 99-0031), documents the history of leasing, exploration, development and production of natural gas offshore Coastal Alabama in state and federal fields, and projects likely future development and production.

After nine years of regulatory delay, Mobil Oil Exploration and Production, Inc.'s first well encountered natural gas at 21,113 feet November 28, 1979, having discovered Norphlet formation gas. At the apex of America's Energy Crisis, Mobil had discovered a giant gas field in 14 feet of water in America's backyard. The Coastal Alabama/Panhandle Florida Norphlet trend would later become one of the most important U.S. natural gas producing regions.

Between 1981 and 1984, Alabama leased tracts in state waters for bids totaling $800 million. MMS leased tracts in federal Mobile OCS waters between 1982 and 1985 for bids totaling $562 million—$1.36 billion combined state and federal. The State of Alabama set up a perpetual trust fund to ensure that the State would continue to benefit from the interest on the lease proceeds. At the end of FY 1998, the balance of Alabama's trust funds had grown to more than $1.5 billion, having increased with the receipt of production royalty payments. Annual interest from the funds, averaging about $100 million since 1986, had grown to near $140 million at the end of FY 1998, accounting for more than ten percent of the state's General Fund. Foster forecasts that interest earnings plus tax revenue collections will grow to over $200 million annually by 2008. The trust funds and interest

wells represents a 71 percent success ratio. All but three discovered fields were producing gas at year-end 1998.

Only a few oil and gas companies have risked the hundreds of millions of dollars and years of lead times necessary to bring the Norphlet into production. Mobil's Mary Ann Field began production in 1988, nine years from first discovery to first production. Shell's Fairway Field started up in late 1991 along with Mobil's federal 823 Field, ten years after the lease sales. Exxon started its three fields in late 1993, 12 years after the 1981 lease sale.

Union and Chevron have become the dominant operators in acreage developing the eastern and western edges of the Mobile OCS. Chevron took nine years from its first Norphlet discovery in Mobile 861 in 1985 to first production in 1994. Alabama state and federal production surpassed 1 BCFD for the first time in February 1997. Forthcoming and planned Alabama wells will take Norphlet and Miocene production to 1.4 BCFD by 2000. Destin Dome production, planned to start in 2001, will sustain regional production near 1.6 BCFD through 2004, before production from discovered fields goes into decline. Cumulative production is forecast to total about 9 TCF from discovered Norphlet and Miocene fields by 2015. Operators' remaining discovered reserves show that all but Shell will produce Norphlet for many years into the future.

2. Economic Effects

The emergence of a large offshore gas industry in the Coastal Alabama region during the early 1980s spawned thousands of jobs in Mobile County, State of Alabama, Louisiana, and Texas. Foster Associates' report, Economic Effects of Coastal Alabama and Destin Dome Offshore Natural Gas Exploration, Development, and Production, (MMS- 99-XXX), estimated the economic effects of the offshore gas industry on Mobile County, the State of Alabama, and the combined economies of Louisiana and Texas resulting from Alabama State, Mobile OCS, and forthcoming Destin Dome OCS natural gas exploration, development, and production.

Total gas industry spending on exploration, development, and infrastructure to fully develop existing Coastal Alabama fields will total close to $4 billion. Expenditures for ongoing operations and maintenance will add over $3 billion more through 2020—on top of the $1.4 billion paid to Alabama and the federal government for offshore leases.

The State of Alabama and coastal counties will spend close to $6 billion through 2020

Coastal Alabama gas development has supported at least 7,000 jobs Gulfwide annually since the early 1980s. During the early 1990s employment created by Coastal Alabama natural gas rose to nearly 14,000 annual FTE jobs. Planned development activity for Destin Dome will cause another spike in offshore gas industry-related employment during 2000 - 2001, boosting Gulfwide employment from offshore gas activities over 10,000 once again.

Spending by the natural gas industry has added between 2,000 – 3,000 FTE jobs to Mobile County since the early 1990s. Spending of State trust fund earnings and tax revenues has sustained over 6,000 jobs since the early 1990s. Regional employment from offshore gas production will be sustained well into the 21st century as Norphlet fields, including the forthcoming Destin Dome field, continue high production levels. Tax and trust fund interest spending will sustain statewide employment over 7,000 FTE indefinitely according to Foster's forecast.

3. Coastal Industries Coexistence

Foster Associates' report, Economic Baseline of the Coastal Alabama Region (OCS Study MMS 98-0046), analyzed the interplay among three major users of the region's coastal natural resources: tourism, fishing and offshore natural gas. Tourism and natural gas industries grew up together post-Hurricane Fredric (1979) stimulating economic growth in Coastal Alabama and the rest of the State of Alabama. The economic evidence shows that both industries have been extremely beneficial to the local coastal region and to the State of Alabama.

The cities of Gulf Shores and Orange Beach along Alabama's Gulf Coast are home to a densely developed tourism and second-home industry. Gulf Shores experienced rapid growth throughout the 1980s. The total volume and value of construction in Orange Beach, east of Gulf Shores, grew 10-fold from 1991 to 1995. Baldwin County sales tax revenues to the state have grown by more than 300 percent since 1979, totaling about $20 million in 1995. Baldwin County leads the state in lodging tax collections.

The offshore natural gas industry in Alabama is over 15 miles away from the bulk of Gulf Shores development and nearly 25 miles away from Orange Beach. No platforms can be seen from the tourist areas of Baldwin County except in the vicinity of Fort Morgan on the western tip of the Gulf Shores peninsula. Support bases for the gas

Tourism tax receipts are important to the state budget, but earnings from offshore gas development are a much larger source of revenue to the state.

Vitae

William W. Wade, Senior Vice President of Foster Associates, Inc., has been involved in energy- and environmental-related research since 1973 and associated with offshore exploration and development issues for the last 20 years. He was principal investigator for economics for *all* of the MMS OCS Petroleum Development Scenario studies funded in the Alaska Socio-Economics Study Program (SESP) during the period, 1978-1983, and project manager for the 1984 MMS deepwater California OCS Petroleum Development Assessment. The MMS Alaska studies led to related studies of Beaufort Sea and Bering Sea onshore facilities siting and impact evaluations. Dr. Wade was project director for a Beaufort Sea comparison and evaluation of alternative lease stipulations to protect the ecosystem.

Dr. Wade has worked on Gulf of Mexico OCS studies since 1994, first for Chevron on its Destin Dome project and subsequently for MMS GOM. He is Project Manager of a three phase study in the final phase of completion for MMS, Gulf of Mexico. Three reports have been issued:

- *Social and Economic Consequences of Onshore OCS-Related Activities in Coastal Alabama*;

- *History of Coastal Alabama Natural Gas Exploration and Development*;

- *Economic Effects of Coastal Alabama and Destin Dome Offshore Exploration and Development.*

In other recent petroleum industry research, Dr. Wade developed for Shell Western E&P a model of California's onshore petroleum producing fields by producing district capable of estimating annual production related to changes in the wellhead price. This model is linked to IMPLAN models of the producing districts to estimate the economic effects of the changes in the oil patch—jobs and taxes. The results of this research were instrumental in demonstrating that the proposed Btu tax would have had significant negative effects on California's oil producing industry. Dr. Wade served as project manager for the 1993 Division of Oil and Gas study of The Cost of Regulatory Compliance in the producing sector. This controversial study yielded a data set showing the range in costs of regulatory compliance by producing district and pin-pointed regulatory overlap. Dr. Wade worked on economic and environmental

Jason Plater is a Senior Resource Economist at Foster Associates, Inc. His specialty is development of computer models to assess economic and financial aspects of natural resource projects and policies. Mr. Plater was a principal investigator throughout the three-phase Gulf of Mexico study He took the lead in analyzing onshore and offshore constraints to expanded OCS natural gas production in the Gulf of Mexico. He developed a twenty-five year production forecast for offshore natural gas production in the Gulf of Mexico utilizing historical production data, estimates of total reserves, and planned pipeline gathering system capacity. The gas production forecast, combined with estimates of offshore operator spending on exploration and development, infrastructure installation, and ongoing operations and maintenance; provided the input data Mr. Plater then used to forecast regional employment, population, and income from the offshore gas industry in the Gulf.

Other relevant work by Mr. Plater includes participation in a Chevron study to determine the economic impacts and constraints associated with offshore gas development in the Gulf of Mexico. His spreadsheet-based model was used to analyze economic impacts of offshore Gulf of Mexico gas development on employment, personal income, and population. The model allows for changes to inputs such as gas field reserves, pipeline transmission capacity, and onshore treatment capacity to examine onshore changes with economic multipliers.

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