

## BOEM ENVIRONMENTAL STUDIES PROGRAM: ONGOING STUDIES

**BOEM OCS Region:** [Gulf of Mexico](#)

**Planning Area:** Gulfwide

**Title:** MAG-PLAN Modification: Gulf of Mexico Data Collection, Streamlining, Testing and Repair of OCS Economic Impact Model (GM-08-08)

**Total Cost:** \$476,825

**Period of Performance:** FY 2009-2012

**Conducting Organization:** Eastern Research Group, Inc.

**BOEM Contact:** [Kristen Strellec](#)

### **Description:**

**Background:** BOEM maintains an OCS Economic Impact Model (EIM) called MAG-PLAN to provide a consistent bureau-wide approach to estimating employment, personal income, and similar economic impacts from OCS activities. MAG-PLAN is a Microsoft Access-based, 2-stage model that uses OCS-specific “cost functions” to estimate the industry expenditures required (by industry sector and onshore incidence of spending) to complete a given activity, such as drilling an exploration well or operating a production facility. The second stage uses general economic multipliers from the commercial economic modeling system IMPLAN to forecast employment, personal income, and other variables resulting from the initial industry expenditures.

Obtaining data at the appropriate level of detail for the different activity functions has proven to be difficult. Researchers developed many of these data largely in-house, with only limited documentation, and by using data supplied through BOEM studies. No publically or commercially available data source contains all of the data needed for the model. Also, the model exhibits software-related problems that make it unstable and easily corrupted. BOEM seeks professionals with expertise to update activity function data, to refine the methodology used to distribute industry expenditures onshore, to refine and test MAG-PLAN software, and to resolve the software issues that have been encountered running the model.

BOEM initiated two parallel efforts to help address these issues and provide information and technical support for this MAG-PLAN modification. First, a current ongoing study will provide useful information on offshore expenditure patterns for contracted services, and their allocation onshore by certain sectors. To prevent duplication of effort, this information will be shared with the MAG-PLAN Modification contractor as it becomes available. Second, BOEM has created a Modeling Review Board (MRB) to assist in the

technical oversight of this MAG-PLAN modification effort. The MRB consists of a group of consultants who will provide expert advice to BOEM regarding all aspects of this contract. The MRB will provide expertise in evaluating the review and testing of the actual model, suggest possible improvements and solutions to problems, and provide review and comments on all deliverables.

**Objectives:** The objective of the MAG-PLAN Modification study is to strengthen and refine the Bureau's procedures for estimating the onshore economic effects from OCS-related activities, by improving the current MAG-PLAN model.

**Methods:** This project will involve coordinating three linked but separate research efforts: (1) the identification and collection of industry expenditure data; (2) testing and streamlining MAG-PLAN functionality; and (3) documentation of all efforts. Specifically, the methods involved are as follows:

1. sensitivity analysis of expenditure data in the current model to determine the influence of various data on model outputs.
2. collection of industry expenditure data for various activity functions, which includes thorough investigation of all public and commercially available data sources, as well as any additional sources identified.
3. creation of new activity functions for FPSO systems; subsea tiebacks/well completions and seismic exploration.
4. Update sector allocation codes for onshore distribution of industry expenditures; and
5. Structuring model outputs to improve onshore distributions at the county/parish level. Streamlining the model would include, but not be limited to the following: simplify the current methodology for entering user-defined onshore impact areas; create a single screen that includes all the steps required to run the model; compress existing water depth categories; and revise the model so that E&D Scenarios are not forced to include drill depth categories, but retain the option to include them at the user's discretion.

**Products:** MAG-PLAN Economic Impact Model, User Manual and Comprehensive Report

**Importance to BOEM:** Modification of MAG-PLAN by improving data inputs as well as testing and streamlining the model, will substantially increase the accuracy of MAG-PLAN outputs and the efficiency of using it. This will aid broader BOEM efforts to understand the local and regional consequences of the program as industry activities expand or contract and will support planning, decision making and environmental assessments related to the management of mineral resources on the OCS.

**Current Status:** The contractor has provided all of the draft deliverables under the contract. BOEM staff has provided detailed comments on the draft comprehensive technical report to the contractor, and is currently finalizing comments on the draft user manual. BOEM staff is continuing their review of the draft model that was delivered.

Additional refinements needed to the underlying data and assumptions of the model, particularly to the onshore distribution of expenditures, have been identified and are ongoing. Portions of the reviewed deliverables are being circulated to an external model review board for external peer review.

**Final Report Due:** March 2012

**Publications:** N/A

**Affiliated WWW Sites:** N/A

**Revised date:** January 2012

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