



An IHS Global Insight and IHS CERA Report

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Restarting “the Engine” —

Securing American Jobs, Investment, and Energy Security

The Importance to the US Economy of Restarting the Offshore Oil and Gas Exploration and Development Industry



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For more information, contact

Jeff Marn
Senior Manager Public Relations
Jeff.marn@ihscera.com
(202) 463 8213

Jim Dorsey
Senior Manager Public Relations
Jim.dorsey@ihsglobalinsight.com
(781) 301 9069

IHS Global Insight
1150 Connecticut Avenue NW
Suite 200
Washington, DC 20036

IHS CERA
1150 Connecticut Ave NW
Suite 400
Washington, DC 20036

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PROJECT TEAM

Authors

- Mohsen Bonakdarpour, *Director, Consulting, Manufacturing and Services, IHS Global Insight*
- James Burkhard, *Managing Director, Global Oil, IHS CERA*
- Jim Diffley, *Chief US Regional Economist, IHS Global Insight*
- David Hobbs, *Vice President, Global Research, IHS CERA*
- Sang-Won Kim, *Managing Director, Consulting, Energy and Natural Resources, IHS CERA*
- John W. Larson, *Vice President, Consulting, Public Sector, IHS Global Insight*
- Michael N. Marinovic, *Vice President, Consulting, Energy and Natural Resources, IHS CERA*
- Candida Scott, *Senior Director, Cost and Technology Group, IHS CERA*
- Leta Smith, *Director, Exploration and Production Trends, IHS CERA*

Contributors

- Project Manager. *Tabitha M. Bailey, Senior Associate, IHS Global Insight*
- Senior Account Executive. *Linda Kinney, IHS CERA*

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IHS offers an independent assessment of the importance of the offshore oil and gas industry to the overall US economy. This research was supported by the Gulf Economic Survival Team (GEST). IHS is exclusively responsible for all of the analysis and content contained herein. The analysis and metrics developed during the course of this research is intended to contribute to the national dialogue on the role of the offshore in terms of oil and gas production, employment, economic growth, and energy security.

RESTARTING “THE ENGINE”: SECURING AMERICAN JOBS, INVESTMENT, AND ENERGY SECURITY

The Importance to the US Economy of Restarting the Offshore Oil and Gas Exploration and Development Industry

EXECUTIVE SUMMARY

Energy security and job creation are fundamental to reinvigorating the American economy. Efforts that result in both adding jobs and increasing domestic energy production would help the US economy overcome such economic headwinds as high gasoline prices and high unemployment. Safely restoring oil and natural gas exploration and development levels in the US Gulf of Mexico is potentially one of the most significant sources of new jobs over the next two years and could help sustain a nascent trend of rising US oil production and lower crude oil imports. Failure to do so would have a major toll in jobs lost and lower energy security. The “activity gap” between proactive action and the pace of plan and permit approvals is the focus of our study.

Swift action to reduce the growing backlog of plans and increase the pace of plan and permit approvals to explore for oil and natural gas resources in the deepwater Gulf of Mexico would increase employment opportunities in almost every state, boost tax and royalty revenues for governments, and help stabilize US energy security. And these benefits could materialize rapidly. Early alignment between the capacity to properly regulate oil and natural gas activities and the pace and scale of investment opportunities would capture the largest possible share of the activity gap, which in 2012 results in

- 230,000 American jobs
- more than \$44 billion of US gross domestic product (GDP)
- nearly \$12 billion in tax and royalty revenues to state and federal treasuries
- US oil production of more than 400,000 barrels of oil per day (bd) (equivalent to approximately 150 million barrels in the full year)
- reducing the amount the United States sends to foreign governments for imported oil by around \$15 billion

The employment effects would not be limited to the Gulf states. One-third of those jobs would be generated outside the Gulf region in such states as California, Florida, Illinois, Georgia, and Pennsylvania.

These benefits will not materialize under the current track—the “Slow Recovery” scenario—that is, the lower pace of permitting activity in the US Gulf of Mexico since the moratorium on oil and gas exploration and development drilling was lifted last October. Since then, the process for regulatory approval has been dramatically slower compared with historical activity levels—activities that have added an average of 1 billion barrels per year to US oil reserves since 1998. Changes in the wake of the tragic Deepwater Horizon accident have resulted in new regulations to improve safety and to require industry to demonstrate its response and containment capabilities, as well as a new regulatory organization. However,

Deepwater Projects Key to Higher Oil Production

From 2006 to 2009 annual world deepwater discoveries accounted for 42 to 54 percent of all discoveries—onshore and offshore. In 2008 alone, deepwater discoveries added 13.7 billion barrels of oil equivalent to global reserves. If deepwater production was viewed as its own “country,” it would exceed that of every other country except Saudi Arabia, Russia, and the United States.

the magnitude of the slowdown indicates the need for regulatory capacity and responsiveness commensurate with the level of investment that companies are prepared to commit to oil and gas exploration and production operations in the post-moratorium environment.

This assessment of the potential benefits from better alignment between regulatory capacity and the responsible operational capacity of the industry is based on analysis by IHS CERA and IHS Global Insight. This analysis is focused on the pace of oil and gas exploration and development activity in light of the changes in requirements for regulatory approvals and permitting after the lifting of the moratorium. We compare the pace of plan and permit approvals against what could be achieved with appropriate regulatory resources at a level consistent with restoring the Gulf of Mexico as an engine for job creation, government revenue, and energy security. This has allowed us to benchmark the impacts on investments, production, employment, and government revenues under a “Proactive Recovery” scenario versus the trajectory implied by post-moratorium trends in the “Slow Recovery” scenario. Based on our analysis of data from the Bureau of Ocean Energy Management, Regulation and Enforcement (BOEMRE), in the six months following the lifting of the moratorium we have found that investment activity is proceeding at a much slower pace compared to historical trends.*

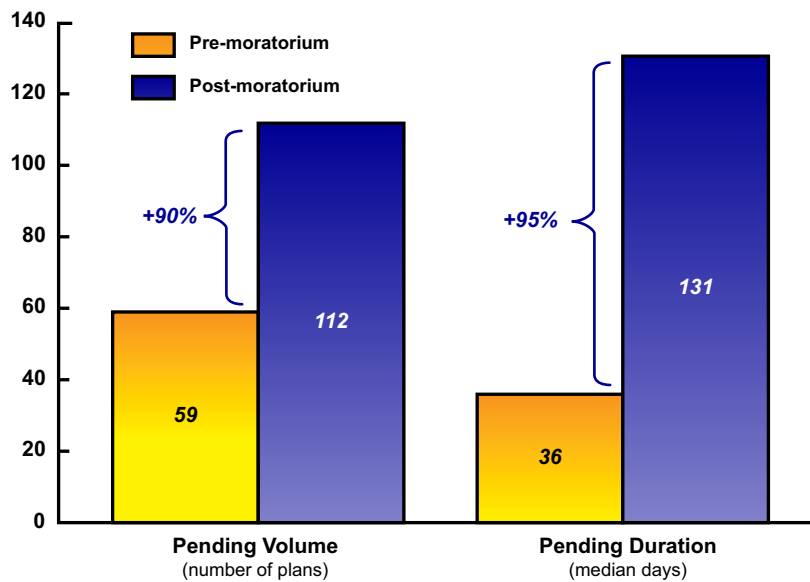
- Number of pending plans up. The number of exploration and development plans that are pending (plans submitted to BOEMRE but not yet received a final action) has increased by nearly 90 percent from previous levels. The median days a plan is pending prior to approval, however, have also increased, to 131 days from the historical norm of 36 days (see Figure ES-1).
- Approvals taking longer. Exploration and development plan approvals are down by more than 85 percent from previous levels; approvals of drill permits covered by those exploration and development plans show a decline from previous levels of nearly 65 percent (see Figure ES-2).

As industry is adapting to the regulatory changes, the significant growth in plans pending and slower pace of plan and permit approvals demonstrates two issues:

- There remains a strong commitment and desire on the part of industry to continue to invest in the Gulf and proactively work through and adapt to new safety requirements and the new regulatory environment.

*The analysis in this report is based on data up to April 10, 2011—six months after the lifting of the moratorium. IHS CERA and IHS Global Insight will issue a 12-month update, based on data through October 12, 2011, to provide insight into changes in the pace of plan and permit activity.

Figure ES-1
Gulf of Mexico Pending Plans Volume and Duration



Source: BOEMRE, IHS CERA analysis.

Note: Pending volume pre-moratorium represents an average number of plans pending without a final action as of April 10 of each year from 2005 to 2010. Pending volume post-moratorium represents the number of plans pending without a final action as of April 10, 2011. Pending days refer to the median number of days that these plans have been pending without a final action.

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- The revised regulatory process is not yet working smoothly as the regulatory system struggles with this growing backlog and implementation of new processes.

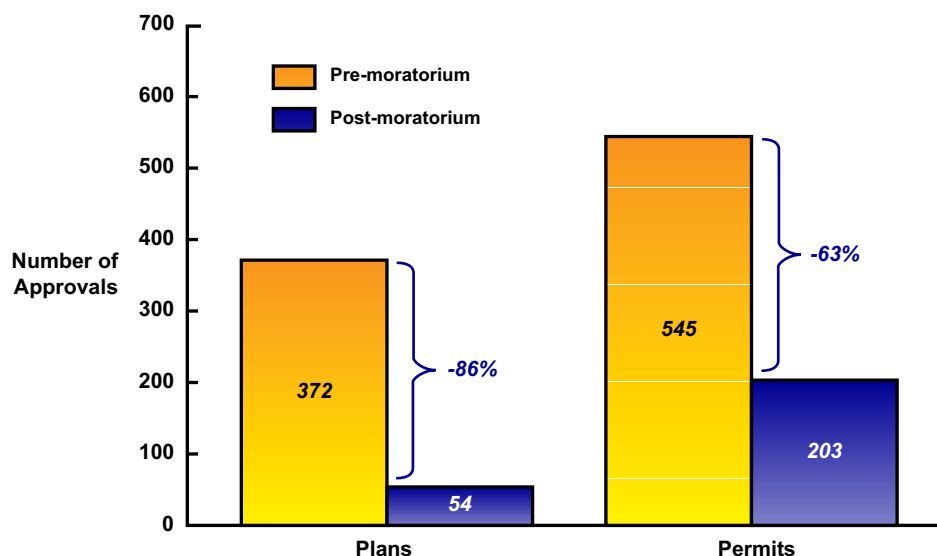
The slower pace of approvals and regulatory uncertainty makes the Gulf of Mexico less attractive when competing with other investment opportunities and as a result assets and capital will move to other prospective areas of the world. A sustained slowdown in the Gulf of Mexico is already having a negative impact on job creation and domestic oil production, and will do so even more in 2012.

The potential opportunities associated with a proactive approach by regulators to successfully restart the Gulf of Mexico “engine” are significant (see Table ES-1).

This report presents the key findings of our analysis. We will release a companion volume that will provide a detailed explanation of the methodology employed and the full results of the analysis. We hope the metrics developed during the course of this research will contribute to the national dialogue on the role of the offshore in terms of production, employment, economic growth and energy security.

Figure ES-2

Gulf of Mexico Plans and Permits Annual Approval Rate



Source: BOEMRE, IHS CERA analysis.

Note: “Pre-moratorium” represents the average annual approval rate from 2005 to 2010.

“Post-moratorium” represents the annualized approval rate.

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Table ES-1

US Potential Opportunities Associated with the Activity Gap

Category	Unit	Projected		
		2011	2012	2013
Production	Thousand barrels per day	198	438	186
Capital Investment	Millions of dollars (2011 \$)	9,504	6,143	3,635
GDP Impacts	Millions of dollars (2011 \$)	23,826	44,243	27,658
Total Taxes	Millions of dollars (2011 \$)	5,544	11,864	7,658
Total Employment	Workers	108,486	229,131	198,593

Source: IHS CERA and IHS Global Insight.

Our analysis demonstrates that the slower pace of plan and permit approvals (regardless of the cause) is resulting in lower activity levels than the operational capacity of the industry. Successfully restoring the activity levels in a safe and environmentally responsible fashion will have significant benefits for America’s energy independence and continued economic recovery.

RESTARTING “THE ENGINE”: SECURING AMERICAN JOBS, INVESTMENT, AND ENERGY SECURITY

The Importance to the US Economy of Restarting the Offshore Oil and Gas Exploration and Development Industry

INTRODUCTION

US economic growth has decelerated in recent months as the economic headwinds have become more brisk. In May and June a precipitous drop in job growth relative to earlier months pushed unemployment up to 9.2 percent. That 9.2 percent figure is not just a percentage, however; it is a number about people. It means there are more than 14 million individual Americans looking for jobs.* Added to this economic headwind are rising commodity prices, high gasoline prices, and rising food costs.

National, state, and local fiscal difficulties are compounded by rising unemployment that is shrinking the revenue tax base. In fact, states continue to face one of the most significant fiscal challenges since the Great Depression, with total projected budget gaps of nearly \$105 billion for 2012.** Furthermore, the US Congress and President Barack Obama are engaged in a critical debate on the debt ceiling and long-term solutions for reducing the annual budget deficits in the face of a total national debt currently standing at \$14.3 trillion.

Against this stark economic backdrop, the need to reignite the economy and return Americans to work is recognized across the country. There is an immediate opportunity to create jobs that would not require any additional federal government stimulus but that would, in contrast, generate additional government revenues. That opportunity is to restart the economic engine of the Gulf of Mexico under the revised regulatory system.

On May 30, 2010, the US government declared a moratorium on offshore drilling activity following the tragic Deepwater Horizon accident and subsequent spill. In doing so, the government temporarily halted an important part of the offshore oil and gas industry—exploration and development. Our estimate is that at full capacity, the industry can generate an additional 230,000 jobs. The lifting of the moratorium on Oct. 12, 2010 was accompanied by the subsequent announcement of a planned institutional reorganization of the Minerals Management Service (MMS), the primary regulator for offshore oil and gas activities. Under this reorganization, the BOEMRE has replaced the MMS as the new regulating agency. In addition to these institutional changes, rules governing the requirements of plans and permits for exploration, development, and production activities have also been modified.

Since the lifting of the moratorium, concern has been expressed about the pace at which BOEMRE has been approving plan and permit applications to return the Gulf to work under the new regulatory and institutional environment. BOEMRE officials have observed that the agency is meeting all statutory timelines for processing applications. Yet the data indicate that the process of granting applications has almost ground to a halt. This means that the important “growth

*Bureau of Labor Statistics, Table A-1 Employment status of the civilian population by sex and group <http://www.bls.gov/news.release/empstat.t01.htm>

**Center on Budget and Policy Priorities: *States Continue to Feel Recession's Impacts*; McNichol, Elizabeth; Oliff, Phil, and Johnson, Nicholas; June 17, 2011 <http://www.cbpp.org/cms/?fa=view&id=711>

engine” for the US economy—investment in the Gulf of Mexico—has stalled. Restarting it requires that oil companies have the confidence their plans and permits will be approved. They will be unlikely to redirect investment and rigs back to the Gulf from elsewhere until it is clear that they can put them to work without delay. The Gulf of Mexico does not exist in a vacuum and must compete for investment like all other oil and gas basins.

IHS CERA and IHS Global Insight analyzed the pace of regulatory approvals after the lifting of the moratorium and its resulting impact on activity levels. We compared this trend against what could be achieved with appropriate resources to match the effective capacity of the industry to operate. This has allowed us to benchmark the impacts on investments, production, employment, and government revenues under a Proactive Recovery scenario versus the trajectory implied by the slow recovery observable in post-moratorium trends.

In this report we shall

- outline the regulatory process and how it interacts with oil and gas investment cycles
- analyze BOEMRE’s data on the pace of permit applications and approvals
- compare the post-moratorium levels of permitting activity by regulators with what could be achieved under a more proactive approach (the activity gap)
- conduct an economic impact analysis to quantify the “activity gap”
- In the companion volume to this report, explain the methodology employed and provide a more detailed discussion of the results of the analysis

Overall, the data demonstrate that, owing to the slowdown in approvals for plan and permit applications, activity levels are lower than historical levels and relative to the capacity of the industry to operate. This activity gap has a significant cost to the US economy.

OIL FIELD DEVELOPMENT—OVERCOMING THE ODDS

The upstream oil and gas business can appear complex—large investments are made with long lead times and, at various stages, face significant financial risk. The recent report by Quest Offshore (sponsored by the American Petroleum Institute and the National Ocean Industries Association) describes the process of exploration, appraisal, development, and production of oil and gas in a manner that is accessible to readers at any level of expertise.*

In this section we outline the plan and permit approval process that overlays the industry exploration and development cycle, as described in the Quest Offshore report.** It is important to understand how the pace of regulatory approvals controls the pace of investment activity and thus the benefits to the US economy.

*United States Gulf of Mexico Oil and Natural Gas Industry Economic Impact Analysis; July 11, 2011. Quest Offshore (<http://www.noia.org/website/staticdownload.asp?id=45798>)

**Ibid.

The Importance of Exploration and Development to Maintaining Production

Without continuing exploration to find new resources and development of both existing and future discoveries, it is inevitable that production will decline in the Gulf of Mexico.

The lead times from exploration and development to first production may be as long as seven to ten years. Therefore the impact of reduced exploration levels is not immediately evident. But if development activity falls, the impact is clear more immediately. Our analysis indicates that, without the activity gap, oil production in the Gulf of Mexico would be 400,000 bd higher in 2012, mostly from allowing developments already under way to move forward.

Exploration carries significant risk—only one in seven wells find economically viable reserves, and it is therefore important to maintain high levels of exploration to ensure that there is a continuing supply of development candidates. For every barrel produced today, at least one barrel must be discovered and developed in order to maintain current production.

Exploration and production companies invest their capital pursuing the possibility of finding oil and gas. In the Gulf of Mexico they identify lease blocks that they believe to be prospective and competitively bid to secure the exclusive rights to explore these blocks during the lease term. They drill exploration wells in the locations where they hope to find hydrocarbons and, if successful, drill appraisal wells to delineate the size of the discovery. This is a costly process.

On the journey to first production, a company will have navigated a complex regulatory process that involves

- acquiring the lease
- creating and applying for approval of an exploration plan
- applying for approval of exploration drill permits (for specific wells outlined in the exploration plan)

The Importance of Lease Sales

As the first step in the journey to production, lease sales play a critical role in allowing operators to bid for opportunities to explore and, if found, commercially develop natural resources. Based on historical lease sales, the government has an opportunity to recognize \$7.3 billion in bonus and rental payment between 2011 and 2013.* However, it was not until recently that BOEMRE announced that it was on track with plans to hold a Gulf lease sale in December 2011 and another within the first six months of 2012. Even if lease sales resume, the current lack of clarity, uncertainty around the plan and permit approval process, and the observed levels of activities may significantly reduce the bid amounts for the new leases.

*Office of Natural Resources Revenue. From 2005 to April 2010 the federal government leased more 17 million acres, generated more than \$13.4 billion from the Gulf's lease bonuses—\$2.2 billion per year, and \$6.6 billion over the first three years of the period analyzed. Finally, operators' payments for renting the leased areas, over the same period, amounted to \$1.36 billion—or \$227 million per year.

- designing and applying for approval of a development plan
- applying for approval of development drill permits (for specific wells outlined in the development plan)

The regulatory framework of applications and approvals in place prior to the Deepwater Horizon incident remains intact today. But in response to the accident, the federal government has adopted more specific regulations and operating requirements to ensure that there could be no repeat—an objective shared by the entire oil and gas industry. These regulatory changes included the following two major aspects:

- **Institutional reorganization.** In May 2010 the Department of Interior announced the reorganization of the US MMS. As part of this reorganization the department is in the process of creating three new entities (Bureau of Ocean Energy Management, Bureau of Safety and Environmental Enforcement, and the Office of Natural Resources Revenue) to replace MMS and segregate what the department called the government’s “conflicting missions” around offshore energy development.
- **New safety and environmental regulations.** BOEMRE has developed and implemented two major regulations and guidance documents aimed at achieving drilling safety and preventing major oil spills and their environmental impact. This resulted in new requirements:
 - a corporate compliance statement on and access to equipment capable of containing the “worst-case” spill volume—the latter requirement being met by contracts with either the Marine Well Containment Company or the Helix Well Containment Group
 - new drilling safety requirements
 - new Safety and Environment Management Systems requirements

In addition to these regulatory requirements, the agency launched a full review of its interpretation of the National Environmental Policy Act, specifically limiting the use of Categorical Exclusions and requiring that additional assessments be conducted even for an operation that had already been appropriately analyzed.

The smooth operation of this revised regulatory process is a goal shared by the regulator and industry, but the process is clearly not yet working in that way. Many of these approval steps require long lead times. The growing backlog of plans pending and slower pace of permit approvals, in conjunction with regulatory uncertainty, make the Gulf of Mexico less attractive when competing with other investment opportunities. Furthermore, if companies are not confident on the timing of approvals, they will be hesitant to contract for rigs and may not order long lead time equipment and services until they have achieved an approval milestone; and this will further extend investment timelines.

The rate at which applications are made and approvals are granted is the pacing factor in determining how much investment there will be and what benefits will flow to the US economy. In the subsequent sections of this report, we present analyses of the pace of permit approvals and the consequential impacts on investment, production, employment, and fiscal revenues.

PLAN AND PERMIT ANALYSIS

Plan and permit approval activity levels are leading indicators of the pace of investment by the offshore oil and gas industry in the Gulf of Mexico. The pace and volume of these activity levels directly contribute to near-term production and development activities. However, current activity is also critical to future production in the longer term, which results from near-term exploration (and subsequent development of new finds from these exploration activities).

IHS CERA conducted an empirical benchmarking analysis to assess the pace and volume of plan and permit applications and approvals, comparing the levels under the new revised regulatory framework relative to pre-moratorium levels of activity. The results of the analysis, presented below, are based on an examination of publicly available BOEMRE data on plan and permit approvals from January 1, 2005, through April 10, 2011.

Key findings around the observed change in the pace and volume of plan and permit activity include

- **Significant and growing backlog of plans pending approval.** The number of pending deepwater exploration and development plans (the main engine of Gulf of Mexico production growth) has increased by more than 250 percent, up from an historical average of 18 plans pending to nearly 65 plans pending.
- **Significantly fewer plan approvals.** Deepwater exploration and development plan approvals have dropped from an annual average of nearly 130 per year to an annualized pace of fewer than 30 per year, down nearly 80 percent. Shallow water exploration and development plan approvals have dropped from an annual average of more than 240 per year to an annualized pace of about 25 per year, down nearly 90 percent.
- **Declines in drill permit approvals.** Deepwater exploration and development drill permit approvals have also declined by approximately 80 percent, down from an average of nearly 160 per year to a pace of only 30 per year. Shallow water exploration and development drill permit approvals have also dropped by over 50 percent from an average of nearly 390 per year to a pace of fewer than 180 per year.

Although it is difficult to discern the exact causes behind the significant variations from historical patterns, the results of the BOEMRE data analysis offer two important insights:

- **Is the process working?** The pace of plan and permit approvals is significantly below historical norms and indicates that the process appears not to be working as it was intended.

- **What does the backlog signify?** There is a growing backlog of pending plans, which could suggest two possible conclusions:
 - The growing number of plans pending approvals reflects industry’s continued appetite for investment in the Gulf; but operators are struggling to understand or fulfill the precise regulatory requirements.
 - The regulator is struggling to keep pace with the numbers of plan and permit applications.

The growing backlogs of plans and the net reduction in overall plan and permit approvals indicate that the regulatory process is significantly constraining operators’ ability to invest capital, thereby hindering the generation of jobs and reducing production in the offshore Gulf of Mexico.

OIL PRODUCTION IMPACTS

IHS CERA developed a Gulf Activity Model to simulate future production and capital investment decisions, constrained by levels of plan and permit activity. This was to assess how a reduction in the pace and volume of plan and permit activity manifests itself in production and in the capital investment decisions of the industry.

The analysis of two scenarios—one based on current “Slow Recovery” trends and another based on a “Proactive Recovery”—demonstrates that there are significant opportunities associated with returning the pace of plan and permit activities to levels consistent with industry investment appetite. The gap between these two scenarios shows that, over a three-year period, the combined benefit on both shallow water and deepwater production represents 300 million barrels (equivalent to an average of nearly 275,000 bd of oil) that could be added to domestic production.

In 2012 alone the proactive scenario path identifies additional production from the deepwater Gulf of Mexico of 411,000 bd more than under the slow recovery scenario for approvals—the result of allowing field developments already under way to move forward to production. This

One Year Later, One Billion Barrels Down?

Since 1998 new discoveries in the deepwater Gulf of Mexico have, on average, contributed more than one billion barrels of additional oil reserves each year. Although the moratorium was officially lifted on October 12, 2010, the pace of permitting since then has been considerably slower than before the moratorium. In the more than 12 months since the imposition of the moratorium there were no new discoveries. The lack of substantial exploration during those 12 months does not necessarily equate to the loss of a billion barrels of oil—it may simply delay the discovery of that oil. But discoveries that might have been made would be contributing to production for future years. The fields that started producing in 2009, for example, were discovered between 1988 and 2004. However, this recent gap in exploration activity will have significant implications for future supplies from the Gulf of Mexico.

A Call for Energy Security

On March 30, 2011, President Obama called for a one-third cut in oil imports by 2025 to reduce US reliance on foreign oil. Again, on May 14, 2011, recognizing the important role the Gulf of Mexico can play in reducing oil imports by one-third by 2025, President Obama announced he would open up more areas for leasing in the Gulf of Mexico and Alaska.

represents an annualized production gain of 150 million barrels—five times the amount that President Obama announced on June 23, 2011, would be released from the US Strategic Petroleum Reserve.*

Table-1 represents the production opportunities associated with the first three years of proactively restarting the Gulf’s approval engine.

As already noted, the near-term production opportunity derives primarily from the immediate impact of permitting the currently stalled—but well advanced—deepwater development projects and allowing them into production. The longer-term impact results from returning exploration plan and permit approvals in the near term to the level necessary to support future discoveries and subsequent production growth in Gulf of Mexico oil. Although the production resulting from exploration today may only be realized in seven to ten years, the longer the delay in the pace and volume of exploration activities, the greater the challenge in sustaining current production levels in the future and the greater the risk of losing investments to other regions around the world.

CAPITAL INVESTMENT IMPACTS

The incremental oil production opportunity stems from increases in capital investment. While most operators (both majors and independents) remain committed to the Gulf, the lower current levels of plan and permit approvals have forced many to consider redeployments of equipment, people, and capital expenditures to more promising opportunities. Our analysis indicates that more than \$19 billion in pent up capital investment over the next three years could be reinjected into the economy if approvals rose to the proactive scenario level (see Table 2).**

Nearly 95 percent of the combined activity gap capital investment opportunities are attributable to deepwater exploration and development opportunities. And as with the production impacts, the greatest opportunities arise early on in the outlook horizon. In order to safely restart the Gulf of Mexico engine of growth, the regulatory system requires the capacity to process plans and restore the pace of permit approvals consistent with operator investment capacity.

*<http://www.energy.gov/news/10393.ht>

**Sum of Combined net capital expenditure increases during 2011–13

Table 1

**Gulf of Mexico Potential Oil Production Opportunities
Associated with the Activity Gap**

(thousand barrels per day)

	<u>2011</u>	<u>2012</u>	<u>2013</u>
Shallow Water			
Proactive Recovery Scenario	232	216	173
Slow Recovery Scenario	227	189	156
Activity Gap	5	27	17
Deep Water			
Proactive Recovery Scenario	1,647	1,921	1,984
Slow Recovery Scenario	1,454	1,510	1,815
Activity Gap	193	411	169
Combined			
Proactive Recovery Scenario	1,879	2,137	2,157
Slow Recovery Scenario	1,681	1,699	1,971
Activity Gap	198	438	186

Source: IHS CERA.

Table 2

**Gulf of Mexico: Potential Capital Investment Opportunities
Associated with the Activity Gap**

(millions of dollars [2011 dollars])

	<u>2011</u>	<u>2012</u>	<u>2013</u>
Shallow Water			
Proactive Recovery Scenario	1,379	1,052	840
Slow Recovery Scenario	780	829	894
Activity Gap	599	223	(54)
Deep Water			
Proactive Recovery Scenario	11,561	13,179	16,240
Slow Recovery Scenario	2,656	7,259	12,551
Activity Gap	8,905	5,920	3,689
Combined			
Proactive Recovery Scenario	12,940	14,231	17,080
Slow Recovery Scenario	3,436	8,088	13,445
Activity Gap	9,504	6,143	3,635

Source: IHS CERA.

ECONOMIC IMPACTS

Production activities and capital investments on the part of industry will have far-reaching implications for the Gulf of Mexico regional economy. However, the economic impacts extend far beyond the Gulf shores into the heartland of the US economy and across the country. Increased investment and resulting production will have a positive impact on employment, tax receipts, and general economic activity in the ways we now outline based on IHS Global Insight’s economic analysis.

Employment Impacts

Table 3 presents the potential employment gains during the initial three-year comparison between the scenarios. In 2011 alone nearly 110,000 jobs would be created or retained if investments return to normal levels. In 2012, the peak year for job performance relative to the slow recovery scenario, that number climbs to nearly 230,000 jobs, which exceeds the worldwide employment of General Motors.* Put another way, the incremental employment in 2012 would, on a monthly basis, exceed the recent jobs report of only 18,000 seasonally adjusted nonfarm jobs. Increasing activity in the Gulf of Mexico can meaningfully “move the needle” on the entire US employment picture.**

More importantly, these employment impacts are not just isolated to the states immediately bordering the Gulf of Mexico. In fact, more than one in every three jobs will be found outside the region. These indirect and induced impacts cascade nationally through the economy because the oil and gas industry purchases supplies; equipment; and high-technology, geological, and other services from vendors in every corner of the United States. (This does not include the impact outside of the Gulf of investments in securities held by individuals, institutions, and pension funds across the country).

Table 3

**US Potential Employment Opportunities
Associated with the Activity Gap**
(workers)

	<u>2011</u>	<u>2012</u>	<u>2013</u>
Direct	23,080	26,587	13,772
Indirect	48,620	61,594	30,664
Induced	36,786	140,951	154,157
Total	108,486	229,131	198,593

Source: IHS Global Insight.

*Employment numbers cannot be summed.

**www.bls.gov

Federal, State, and Local Government Tax Revenue

Beyond employment impacts, restarting the Gulf of Mexico will increase government tax revenues paid by oil and gas producers, their employees, the energy industry’s extensive supply chain, and other companies in ancillary industries. As depicted in Table 4, IHS Global Insight estimates that a total of \$25 billion of additional royalty payments along with corporate and personal tax revenues could be realized by federal, state, and local governments if industry activity in the Gulf followed the path described in our Proactive Recovery scenario. This underscores the importance of safely returning to pre-moratorium drilling levels. Given unprecedented federal and state budget deficits, a recovery in drilling represents one element in a multistep approach in resolving the nation’s current fiscal crisis.

These increased fiscal revenues can be better understood in the context of programs they fund and services they provide. The nearly \$12 billion in additional revenues identified in 2012 would be enough to fully fund the Department of Labor or Department of Interior for a year or fund nearly 50 percent of the annual budgets of the Department of Agriculture or Department of Energy.

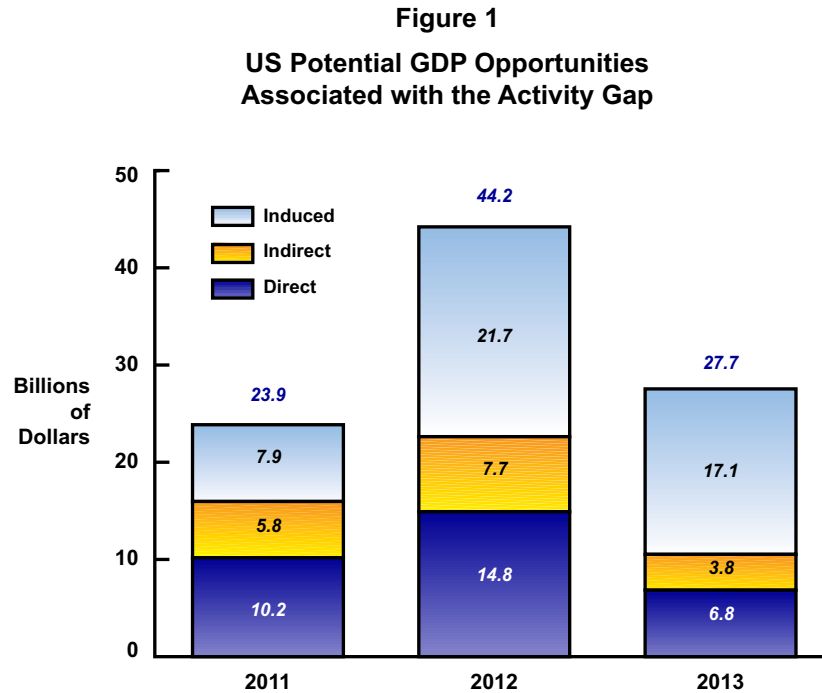
Gross Domestic Product Impacts

To quantify the size of the near-term opportunity for US GDP, IHS Global Insight compared the Slow Recovery Scenario with the Proactive Recovery Scenario. In Figure 1 GDP growth under the Proactive Recovery Scenario is higher in 2011, 2012, and 2013.

Table 4
US Potential Tax Revenue Opportunities Associated with the Activity Gap
(million dollars)

Taxes and Royalties—United States	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>Cumulative 2011–13</u>
Federal Taxes	2,483	5,108	3,953	11,544
Personal Taxes	1,814	3,844	3,185	8,842
Corporate Taxes	670	1,264	768	2,702
State and Local Taxes	1,586	3,324	2,163	7,073
Personal Taxes	178	394	342	913
Corporate Taxes	1,408	2,930	1,821	6,160
Total, Federal, State, and Local Taxes	4,069	8,432	6,116	18,617
Royalties Retained by Federal Government	1,460	3,398	1,527	6,384
Royalty Distributions to States	15	34	15	64
Total Royalties	1,475	3,432	1,542	6,449
GRAND TOTAL	5,544	11,864	7,658	25,066

Source: IHS Global Insight.



Source: IHS Global Insight.
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The near-term gain in GDP is \$24 billion in 2011 and reaches a maximum of \$44 billion in 2012, followed by another increase of \$27 billion in 2013.* It is important to note that actual GDP is not contracting in 2013 from the peak impact in 2012, but rather that the gap between the two scenarios is narrowing as the Slow Recovery scenario reaches convergence with the Proactive Recovery scenario. As such, plan and permit levels for 2013 are closer to pre-moratorium levels than in 2012, and therefore the opportunity or “gap” to capture is comparatively smaller in 2013. The significant, short-term economic benefits underscore the urgency of safely returning the Gulf of Mexico back to work as there is a narrow window of opportunity. Failure to act swiftly will ensure these economic gains are missed.

Summary Economic Impacts by State

Finally, to understand how these economic impacts cascade through the broader US economy, IHS has conducted a state-level analysis of key economic indicators such as employment and tax revenues. From an employment perspective, our analysis found that the most significant job improvements outside of the Gulf will be in states such as California, Florida, Illinois, Georgia, and Pennsylvania.

*These figures reflect IHS Global Insight’s dynamic modeling, and the year-by-year totals are not additive on a cumulative basis.

State Impacts—A Closer Look

Louisiana’s potential incremental revenues of \$1.3 billion would allow the state to close more than 80 percent of its current \$1.6 billion budget shortfall. Additionally, IHS Global Insight estimates Louisiana would gain \$2.78 billion in revenue over the first three years of the recovery period. This is about the size of annual higher education budget of Louisiana and over half of state annual allocations for education. Over the initial three-year period described under the scenarios, this sum would fund 264,000 public school students, based on the 2009 average per pupil expenditure of \$10,533. Or, looked at another way, each household in Louisiana would have to generate an additional \$530 of state and local taxes per year, during those three years, to make up for the \$2.78 billion.

Further down the rankings of states, Pennsylvania would gain an additional \$61 million in state and local tax revenues in 2012 and a total of \$140 million over the first three years of Proactive Recovery scenario. The first year of state tax revenue gains are about 50 percent of the current state public library subsidy. Alternatively, the sum of the tax revenue increases identified in the first three years of the scenarios could fund 11,000 public school students, based on the 2009 average per pupil expenditure of \$12,512.

To estimate these impacts, the components of the activity gap are converted into dollars and combined to calculate the aggregate activity gap. To fill the estimated activity gap, each industry in turn requires additional labor and value-added inputs through the entire supply chain for direct and indirect impacts.

In addition to the IMPLAN model, IHS Global Insight used its propriety state-of-the-art modeling systems, multilateral trade, and business demographics databases (including *TransearchTM*, *Business Market InsightTM*, *US Macroeconomic Model*, and *US Regional Model*) to track the sources of additional indirect and induced impacts by industry and state.

Table 5 provides an examination of the employment and tax revenue impacts for select states, ranking the states based on the employment impact numbers for 2012.

Table 5

**State-level Potential Employment and Tax Revenue Opportunities
Associated with the Activity Gap for States with Greatest Employment Opportunity**

State	Rank	Employment Opportunities			State Tax Revenue Opportunities (thousand \$)		
		2011	2012	2013	2011	2012	2013
Alabama	11	1,680	3,353	3,330	12,088	27,443	22,347
California	3	6,139	14,292	12,756	84,391	181,625	151,238
Florida	5	3,252	7,497	6,671	21,618	43,816	34,060
Georgia	10	1,788	3,975	3,462	17,107	34,910	28,336
Illinois	6	2,772	6,069	5,276	41,963	79,155	59,755
Louisiana	2	37,323	68,319	52,218	677,010	1,317,887	784,704
Mississippi	7	2,790	5,440	4,765	18,871	32,296	22,538
Missouri	14	1,206	2,935	2,506	12,050	25,887	19,945
New Jersey	17	512	1,249	1,859	5,721	14,326	10,756
New York	4	3,584	8,809	8,076	48,439	106,193	91,757
North Carolina	12	1,202	3,347	3,166	12,544	31,256	27,871
Ohio	9	1,915	4,539	4,246	5,316	12,510	12,560
Oklahoma	16	1,118	2,073	1,653	10,584	18,720	14,069
Pennsylvania	8	1,978	5,214	4,893	27,751	61,413	50,591
Tennessee	15	1,332	2,810	2,493	10,503	19,501	15,156
Texas	1	33,784	73,944	58,816	539,448	1,205,981	723,108
Virginia	13	1,239	3,248	3,015	11,065	25,503	21,473
Rest of United States		4,853	12,021	19,392	29,503	85,549	72,876
Total		108,466	229,134	198,594	1,585,973	3,323,971	2,163,141

Source: IHS Global Insight.

Notes: Ranks are based on employment opportunities for 2012. States with 2012 employment opportunities below 1,000 workers are aggregated into "Rest of United States."

CONCLUSION

The current pace of regulatory approvals is a constraining factor on the oil and gas industry's ability to make its contribution from the Gulf of Mexico to restoring growth and employment in the US economy. The results of the BOEMRE data analysis offer two important insights:

- **The process constrains benefits** The current pace of plan and permit approvals is significantly below historical norms and indicates that the process is not working smoothly.
- **Industry is ready.** The growing backlog of plans awaiting approval indicates that the industry remains ready to invest as quickly as it is permitted to do so.

This study quantifies the gap between industry's capacity to operate and government's capacity to regulate. It defines the scale of the opportunity for government and industry to work together for the benefit of the US economy and its energy security and, at the same time, to assure compliance with the safety standards that are needed.

Increasing the pace of approvals will provide widespread and substantial financial returns to the US taxpayer, measured in billions of dollars of fiscal revenues over the coming three years. Furthermore, the economic stimulus that such an investment would create, along with the private sector investment it would precipitate, can be measured in hundreds of thousands of jobs and billions of dollars of contribution to GDP.

Restarting the stalled economic engine of the Gulf of Mexico would help meet the urgent national needs of job creation, increased tax revenues, and higher economic growth—as well as increased energy security. ■

Appendix
State-level Potential Employment and Tax Revenue Opportunities
Associated with the Activity Gap

State	Rank	Employment Opportunities			State Tax Revenue Opportunities (thousand \$)		
		2011	2012	2013	2011	2012	2013
Alabama	11	1,680	3,353	3,330	12,088	27,443	22,347
Arizona	26	195	604	1,066	605	3,429	3,210
Arkansas	27	497	593	306	5,012	6,502	3,745
California	3	6,139	14,292	12,756	84,391	181,625	151,238
Colorado	25	269	694	1,096	1,309	3,988	3,292
Connecticut	30	182	546	928	2,048	6,236	4,997
DC	39	38	144	269	185	1,300	1,216
Florida	5	3,252	7,497	6,671	21,618	43,816	34,060
Georgia	10	1,788	3,975	3,462	17,107	34,910	28,336
Illinois	6	2,772	6,069	5,276	41,963	79,155	59,755
Indiana	20	275	769	1,297	1,731	6,098	5,472
Iowa	33	172	426	700	1,330	4,193	3,645
Kansas	31	299	489	671	2,286	3,919	3,028
Kentucky	23	356	714	939	2,796	5,727	4,302
Louisiana	2	37,323	68,319	52,218	677,010	1,317,887	784,704
Maryland	28	159	559	1,054	522	4,352	4,239
Massachusetts	19	240	808	1,459	1,929	7,120	6,211
Michigan	18	423	900	1,751	2,121	4,413	5,038
Minnesota	21	257	753	1,283	1,912	7,484	6,438
Mississippi	7	2,790	5,440	4,765	18,871	32,296	22,538
Missouri	14	1,206	2,935	2,506	12,050	25,887	19,945
Nebraska	35	107	276	459	723	2,123	1,807
Nevada	34	156	377	586	19	67	59
New Jersey	17	512	1,249	1,859	5,721	14,326	10,756
New Mexico	36	101	242	364	1,019	2,180	1,653
New York	4	3,584	8,809	8,076	48,439	106,193	91,757
North Carolina	12	1,202	3,347	3,166	12,544	31,256	27,871
North Dakota	40	47	113	179	396	924	694
Ohio	9	1,915	4,539	4,246	5,316	12,510	12,560
Oklahoma	16	1,118	2,073	1,653	10,584	18,720	14,069
Oregon	32	155	453	760	946	3,709	3,287
Pennsylvania	8	1,978	5,214	4,893	27,751	61,413	50,591
South Carolina	29	219	549	844	959	2,993	2,519
South Dakota	41	33	103	179	4	18	17
Tennessee	15	1,332	2,810	2,493	10,503	19,501	15,156
Texas	1	33,784	73,944	58,816	539,448	1,205,981	723,108
Virginia	13	1,239	3,248	3,015	11,065	25,503	21,473
Washington	22	224	721	1,282	267	1,353	1,245
West Virginia	38	55	187	325	403	1,653	1,398
Wisconsin	24	211	696	1,262	808	4,857	4,588
Wyoming	37	162	230	192	73	108	65
Rest of United States		18	75	141	99	804	712
Total		108,466	229,134	198,594	1,585,973	3,323,971	2,163,141

Source: IHS Global Insight.

Notes: Ranks are based on employment opportunities for 2012. States with 2012 employment opportunities below 100 workers are aggregated into "Rest of United States."