

An Appraisal of the Outlook for Hydrocarbon Resources Potential in the U.S. Gulf of Mexico



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Background and Objectives



- In the early 1990s, the Gulf of Mexico (GOM) was considered a "dead petroleum basin"
- Analysts thought the GOM region could only attract the smaller investor, because the chance of any big discoveries was considered unlikely.
- It is now, however, the key focal point of oil and gas activity in the U.S.
 - Currently GOM accounts for 28% of total U.S. domestic oil and 23% of natural gas (23%)
 - Ninety-seven percent and 82 %, respectively, of new field discoveries of crude oil and dry natural gas in 2002 in the U.S. were discovered in the GOM OCS.



Background and Objectives

- Reasons for this turn around from the near death experience status to the new optimism:
 - Technical advancements in offshore drilling and production technology
 - Relatively stable oil and gas prices since the first Gulf War. The only exception in that stretch since 1986 is 1998.
 - Deepwater Royalty Relief Act of 1995 (DWRRA).
- Main objective is to appraise the significance and growing importance of deepwater activity and petroleum discoveries to the U.S. domestic petroleum resources and supply.

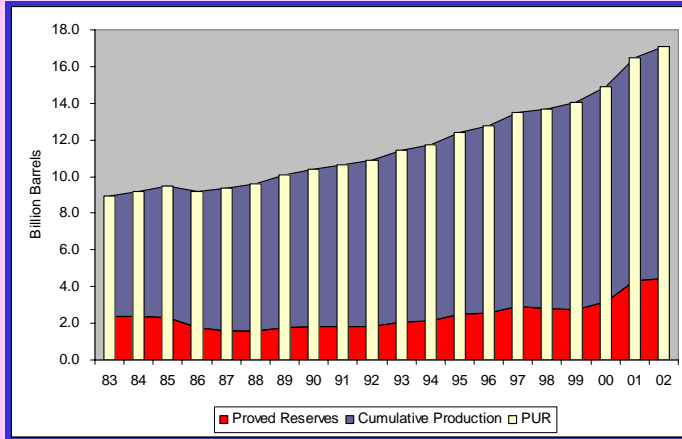


Trend in Proved Recoverable Reserves (PUR)

- Components of recoverable reserves
 - cumulative production—above ground reserves
 - proved reserves—below ground reserves
 - growth in reserves
- The estimated proved ultimate recovery (PUR) in the GOM as of January 1, 2003 [1]:
 - 17.1 billion barrels (Bbbls) and 170 trillion cubic feet (Tcf).
 - Approximately 76.8 percent of oil recovery had already been produced and nearly 94 percent of recoverable natural gas.



Trend in the U.S. GOM PUR of Crude Oil



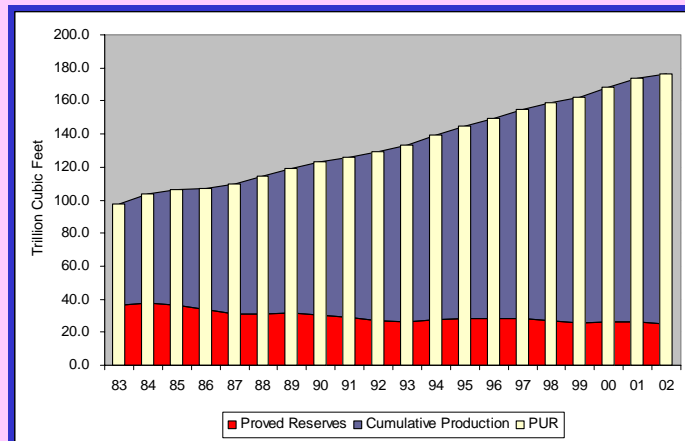
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Trend in U.S. GOM PUR of Dry Natural Gas

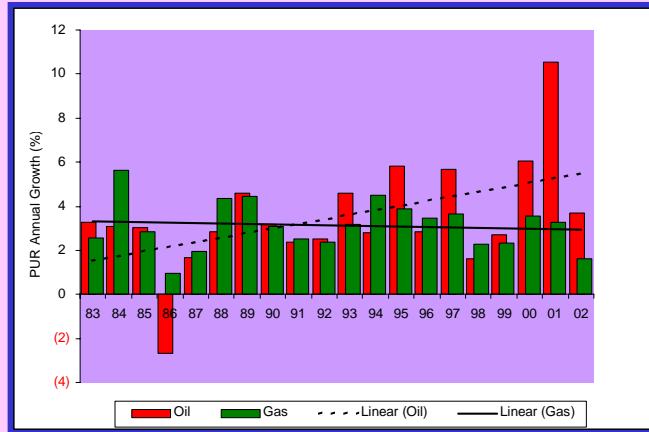


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Annual Percent Change in the U.S. GOM PUR

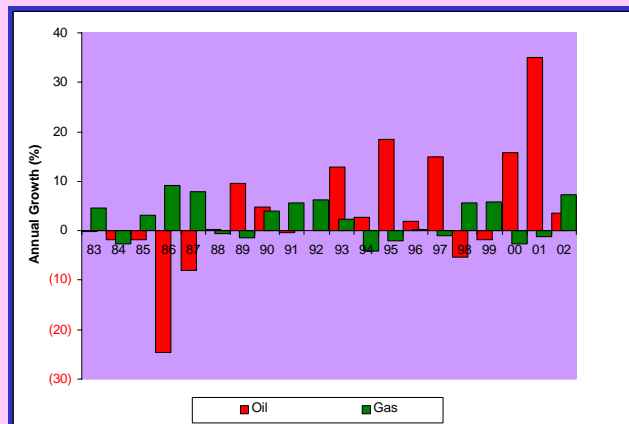


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Annual Percent Change in Reserves Additions in the U.S. GOM



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Indicators of GOM Resources Outlook

- Components and distribution of reserves additions
 - Net revisions and adjustments
 - New Discoveries
 - Extensions
- Proportion of produced reserves replaced by new discoveries, total discoveries or gross reserve additions.
- Reserves to production ratios.

Components and Distributions of Oil Reserve Additions in the U.S. GOM

Hydrocarbons / Components	1980-1989	1990-1999	1993-2002	2000-2002
Natural Gas Reserve Additions (Bcf)				
Net Revisions and Adjustments	7,957	8,594	4,355	3
New Discoveries (no extensions)	20,528	23,300	27,001	8,598
Total New Discoveries	33,140	35,608	41,201	13,019
Gross New Additions	41,097	44,202	45,556	13,022
Crude Oil Reserve Additions (MMbbl)				
Revision & Adjustment	1,867	1,252	1,163	342
New Discoveries (Less Extensions)	774	3,351	5,339	2,082
Total New Discoveries	1,025	5,139	7,275	2,642
Gross New Additions	2,892	6,391	8,438	2,984

Indicators of U.S. GOM Resource Development Outlook

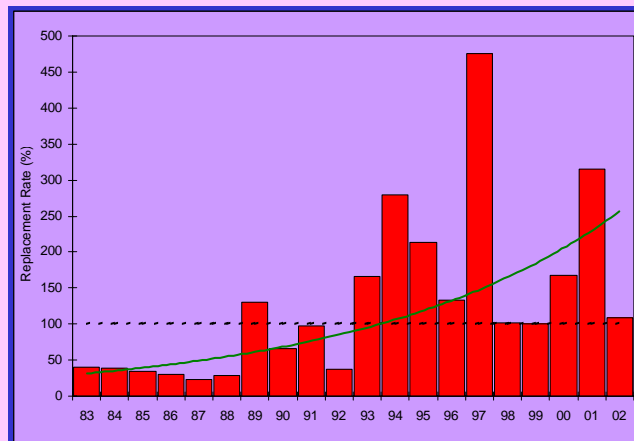
	1980-1989	1990-1999	1993-2002	2000-2002
Replacement by Source (percent)				
Crude Oil				
New Discoveries	14	52	88	157
Total Discoveries	18	80	120	199
Gross Reserve Additions	52	100	139	224
Natural Gas				
New Discoveries	42	48	56	61
Total Discoveries	68	73	85	91
Gross Reserve Additions	85	92	94	92
Growth and Depletion Rates				
Crude Oil				
Reserve Growth	(2.5)	4.8	9.8	18.1
Reserve Depletion	26.5	29.5	24.0	13.1
PUR Growth Rate	8.9	6.3	6.2	5.9
Natural Gas				
Reserve Growth	2.9	2.3	1.0	1.1
Reserve Depletion	13.5	17.1	17.9	18.7
PUR Growth Rate	5.4	3.8	3.7	3.1
Reserves-to-Production Ratios				
Crude Oil	3.8	3.7	5.4	8.9
Natural Gas	7.4	5.7	5.6	5.5

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Oil Reserves Replacement Rates in the U.S. GOM

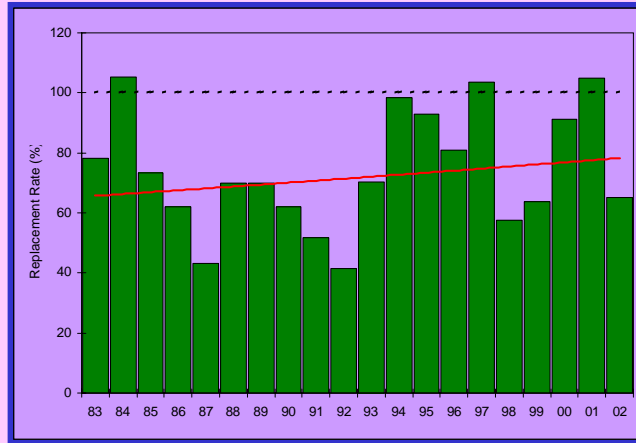


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Gas Reserves Replacement Rates in the U.S. GOM

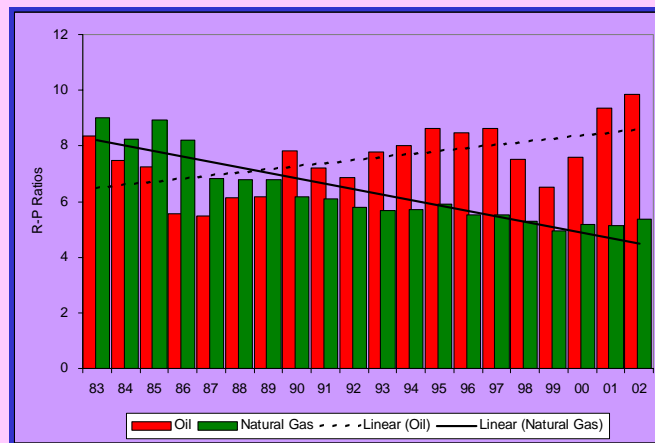


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Reserves-to-Production Ratios in the U.S. GOM



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Deepwater GOM OCS Resources Potential [5]

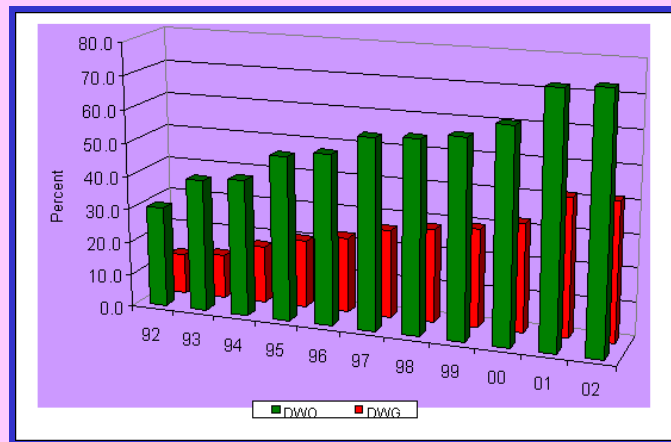
- The significance and growing importance of the OCS deepwater (water depths greater than 200 meters) are quite evident:
 - Deepwater now produces more than 60 percent of total GOM oil production and about 30 percent of gas production.
 - Nearly seventy percent of the ultimate oil recoverable resources and about 40 percent of the ultimate gas recoverable resources are in the deepwater Gulf of Mexico.
 - It is estimated that nearly 70 percent of recoverable deepwater oil and gas resources are still available for discovery in the deepwater.

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Deepwater Share of GOM Proved Reserves

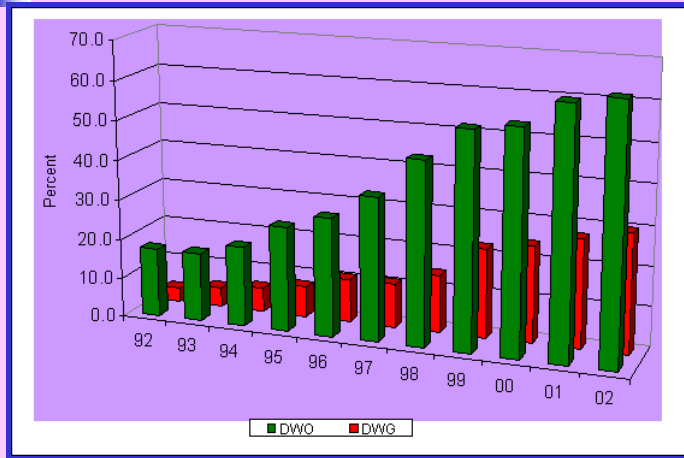


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Deepwater Share of GOM Production

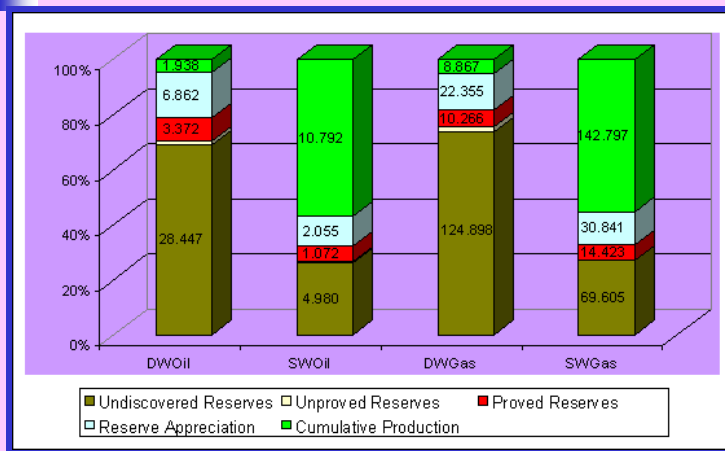


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Components of the Estimated Ultimate Resources in the U.S. GOM [7]

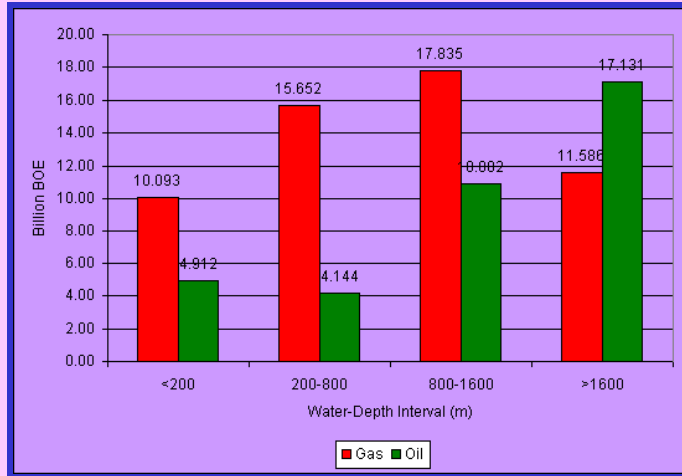


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Estimated Mean GOM Discoverable Resources [7]

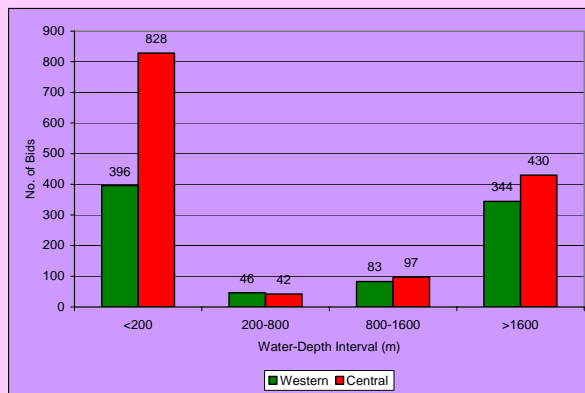


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Bids Received for GOM Leases, 1999-2002

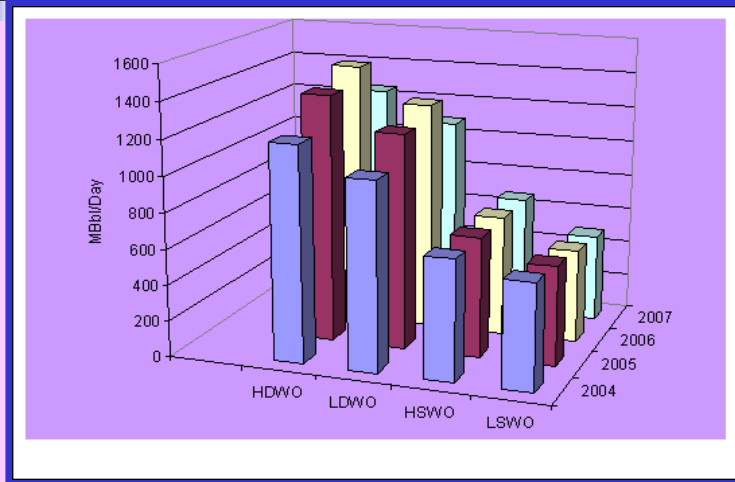


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Projected GOM Daily Oil Production[9]

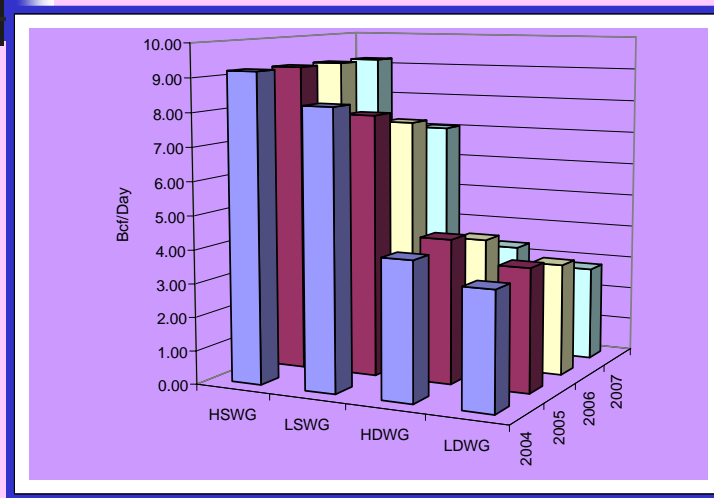


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Projected Daily GOM Gas Production[9]

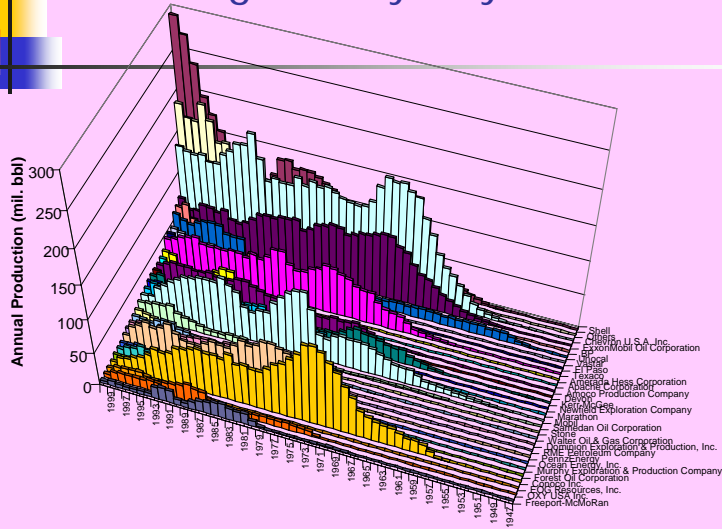


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Understanding the Key Players

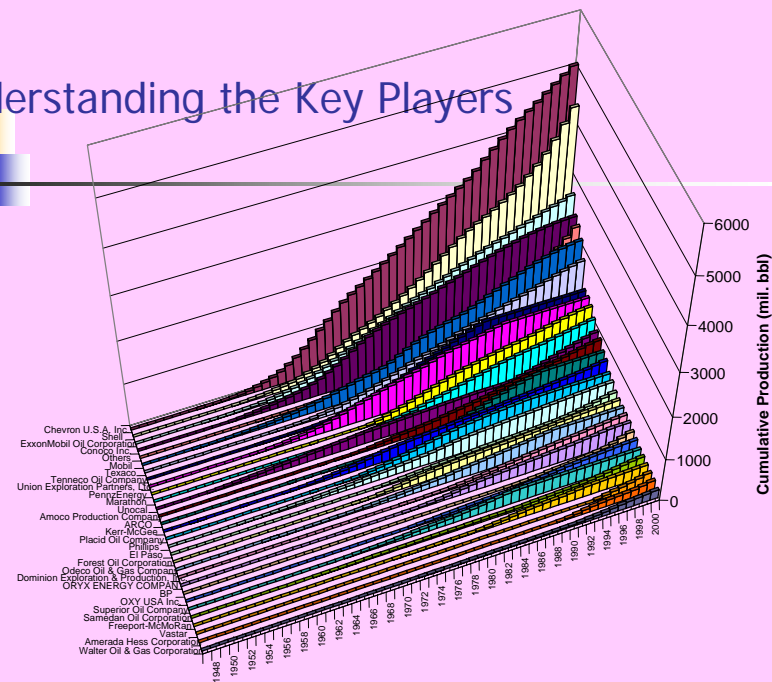


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Understanding the Key Players



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Concluding Remarks

- GOM OCS currently accounts for a considerable proportion of the U.S. total domestic oil (28 %) and natural gas (23%) production as well as most new additions to petroleum reserves in the U.S.
- The proportion of produced petroleum reserves that were replaced in the aggregate portrays more optimistic outlook for domestic crude oil production than for natural gas in the U.S. Gulf of Mexico.
- The significance and growing importance of the OCS deepwater to the U.S. domestic petroleum supply are also evident in the proportion of GOM, resources, reserves and production that comes from deepwater (water depths greater than 200 meters).
- Nearly seventy percent of the ultimate oil recoverable resources and about 40 percent of the ultimate gas recoverable resources are in the deepwater Gulf of Mexico.
- Although there are new players in the Gulf, but the driving force underlying the deepwater OCS resource development is propelled by the majors and may probably be more so in the nearest future.



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