

Assessment of Undiscovered Technically Recoverable Oil and Gas Resources of the Nation's Outer Continental Shelf, 2003 Update

Using a play-based assessment methodology, the Minerals Management Service estimated a mean of 76.0 billion barrels of undiscovered recoverable oil and a mean of 406.1 trillion cubic feet of undiscovered recoverable natural gas in the Federal Outer Continental Shelf of the United States.

Introduction

This assessment represents an update of selected basins of the Federal Outer Continental Shelf (OCS) (fig. 1). Assessments of the entire OCS were made by the Minerals Management Service (MMS) in 1995 and 2000 (MMS, 1996 and MMS, 2001). The next MMS assessment of the entire OCS is scheduled for completion in mid 2005. Areas

selected for this update included those where significant new discoveries were made, such as parts of the Gulf of Mexico, and areas where new geological concepts have been developed, such as the Atlantic OCS margin and the North Aleutian Basin of Alaska. Results from this selective update were combined with the year 2000 assessment results from other areas to yield the regional totals presented here.

The MMS utilizes a probabilistic play-based approach to estimate the undiscovered technically recoverable resources (UTRR) of oil and gas for individual plays. This methodology is suitable for both conceptual plays where there is little or no specific information available, and for developed plays where there are discovered oil and gas fields and considerable information is available. After estimation, individual play results are aggregated to larger areas such as basins and regions.

This assessment is limited to technically recoverable undiscovered resources of oil and gas. Unlike MMS's 1995 and 2000 assessments, it does not contain economic analyses of what portion of these technically recoverable resources are commercially viable.



Figure 1. Federal OCS Areas of the United States

Resource Summary

The MMS estimated that 76.0 billion barrels of oil and 406.1 trillion of cubic feet of gas are technically recoverable from the U.S. Federal OCS. These results are presented by area in table 1, which lists mean values as well as the 95th and 5th percentile values representing high and low probability cases, respectively. Greater range between the high and low values indicated higher uncertainty in the estimates. The complete probability distributions for OCS oil and gas resources are shown in figures 2 and 3.

These values represent a 1 percent increase in oil resources and a 12.1 percent increase in gas resources when compared with MMS's 2000 assessment. The increases are due to changes in the assessments of the Atlantic and Gulf of Mexico OCS areas. Both the Alaska and Pacific OCS area resource estimates are essentially unchanged from 2000. The increases also account for the approximately 2 Bbbl oil and 8 Tcfg that were discovered and moved to the reserves category during this time period.

Table 1. Undiscovered Technically Recoverable Resources of the OCS

(Bbbl, billion barrels of oil, Tcf, trillion cubic of gas. F95 indicates a 95 percent chance of at least the amount listed, F5 indicates a 5 percent chance of at least the amount listed. Only mean values are additive.)

Undiscovered Technically Recoverable Resources									
	UTRR Oil (Bbbl)			UTRR Gas (Tcf)			UTRR BOE (Bbbl)		
	F95	Mean	F5	F95	Mean	F5	F95	Mean	F5
Alaska OCS	16.6	25.1	35.9	54.6	122.1	226.2	28.0	46.9	72.1
Atlantic OCS	1.9	3.5	5.3	19.8	33.3	50.6	5.4	9.4	14.3
Gulf of Mexico OCS	31.5	36.9	44.0	208.9	232.5	267.6	68.7	78.3	91.6
Pacific OCS	4.4	10.5	21.8	7.4	18.2	38.2	5.7	13.7	28.6
Total OCS	62.1	76.0	93.0	326.2	406.1	520.0	122.0	148.3	180.4

In the Atlantic OCS area significant new knowledge and information was gained as a result of recent drilling in the Scotian basin offshore Canada. Applying this new information led to adjustments to risks applied to previous defined plays, and to the definition of new plays resulting in increased estimates for oil and gas UTRR of 52 percent and 19 percent respectively over MMS’s 2000 study. Gulf of Mexico OCS oil resources have remained flat while gas resources have increased by over 20 percent relative to MMS’s 2000 study. This increase is attributed primarily to plays in the deep shelf areas of the Central and Western Gulf of Mexico, and to the Eastern Gulf of Mexico. Results of new drilling and discoveries led to revisions of plays and their associated risks that significantly increased gas resources. This is especially true for conceptual plays where valuable insights into the presence of source rock, maturation, migration, trapping, and reservoir facies were gained.

References

Minerals Management Service (MMS), 1996: *An Assessment of the Undiscovered Hydrocarbon Potential of the Nation’s Outer Continental Shelf*, OCS Report MMS 96-0034.

—, 2001: *Outer Continental Shelf Petroleum Assessment, 2000*, OCS Report MMS 2001-036, 12 p.

List of Terms

Pool: A discovered or undiscovered accumulation of hydrocarbons, typically within a single stratigraphic interval.

Play: A group of pools that shares a common history of hydrocarbon generation, migration, reservoir development, and entrapment. A play is classified based on availability of data, stages of hydrocarbon detection and discovery, and degree of confidence in the play concept.

Undiscovered Technically Recoverable Resources (UTRR): The portion of the hydrocarbon potential that is producible, using present or reasonably foreseeable technology, without any consideration of economic feasibility. Previously this was termed Undiscovered Conventionally Recoverable Resources.

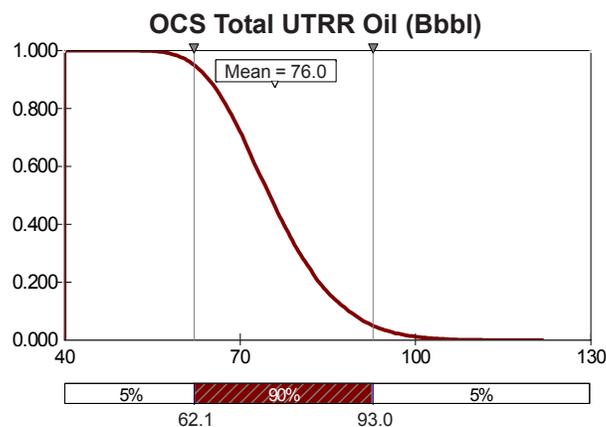


Figure 2. Total Oil Resources of the OCS

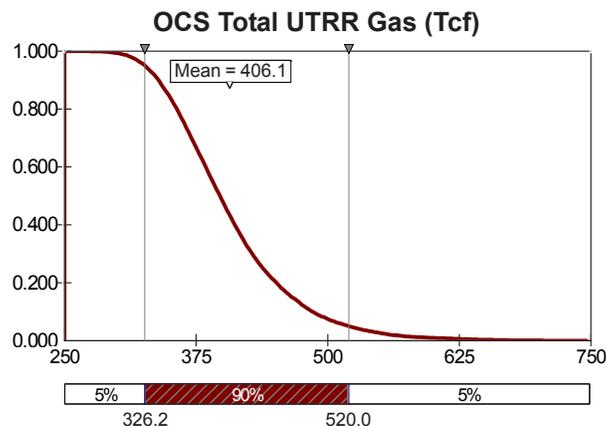


Figure 3. Total Gas Resources of the OCS

For Further Information

Supporting geologic studies, previous assessment results, and methodologies used by MMS for resource assessment can be found on MMS’s web site, www.mms.gov/offshore.