Memorandum September 12, 2008

TO: House Committee on Natural Resources
Attn: Kevin V. Kennedy

FROM: Marc Humphries
Analyst in Energy Policy
Resources, Science, and Industry

SUBJECT: Possible Federal Revenue Estimates From Oil and Gas Production in Areas Currently Off-Limits (under leasing moratoria or inaccessible)

This memorandum is in response to your request for estimates of revenues from royalties and corporate income taxes if the public lands, now off-limits, (i.e., outer continental shelf moratoria and onshore inaccessible areas) were open and available for oil and natural gas leasing and development.

Resource estimates in Table 1 are from the Department of the Interior Statement of Stephen C. Allred before the Senate Committee on Energy and Natural Resources, Resource Estimate Table, January 25, 2007 and onshore resource estimates in Table 2 are from the Interagency report: *Inventory of Onshore Federal and Natural Gas Resources and Restrictions to Their Development, 2008.*

I hope this information meets your needs. If you have any further questions, please call me at ext. 7-7264.

Background

The federal government currently collects revenues from oil and gas leases on public lands in the form of bonus bids, annual rents, and royalties. Bonus bids are upfront payments made to secure a lease in a competitive lease sale. Leases are awarded to the highest bidder. Royalties are based on the value of production. Annual rental payments are made by lessees on a per acre basis. Once commercial production begins, rental payments are no longer required. The primary lease term for onshore leases is ten years. For offshore leases the primary term is 5 years for shallow water (<400 meters), 8 years for mid-depth water (400-800 meters) and 10 years for deep water (>800 meters). Leases continue as long as commercial production takes place. The Bureau of Land Management (BLM) administers the onshore leasing program and the Minerals Management Service (MMS) administers the offshore leasing program. The MMS collects and disburses all revenues from federal leases. The MMS and BLM are agencies within the Department of the Interior.

In FY2007, the MMS collected about $11.5 billion from leasing activity on public lands. About 90% came from royalty payments. A royalty rate of 12.5% applies to onshore leases and up to 18.75% applies to offshore leases.[1] All states except Alaska generally receive 50% of the revenue generated from leasing activity within their state for onshore leases. Alaska receives 90%. The Reclamation Fund receives 40% of onshore receipts and the General Treasury receives 10%. Revenues from offshore leases are statutorily allocated among the coastal states, the Land and Water Conservation Fund (LWCF), the National Historic Preservation Fund (NHPF) and the General Treasury. Revenue sharing among the coastal states is limited to revenues generated within an area three miles beyond the state's boundary and revenues from leases identified in the Gulf of Mexico Energy Security Act of 2006 (P.L. 109-432).[2] Despite the statutory allocations, the vast majority of revenues from offshore leases go to the General Treasury.

Assumptions

A number of assumptions are made in this memo to simplify a very complex process of making revenue projections. Supportable projections of revenue generation would require complex economic modeling and would likely include many more variables. A simplified approach here assumes that leasing restrictions were lifted and once those restrictions were lifted, discovery and production of all possible undiscovered technically recoverable resources (UTRR) estimated by Department of the Interior in the OCS and onshore would be produced over a 58-year time horizon (2010-2068). Federal revenue projections are over the entire recovery cycle (58 years), until oil and gas is no longer recoverable. Production rates, however, are beyond the scope of this memo. It is assumed that once legislation to open withdrawn lands is enacted, it could take at much as 5 years or longer for lease sales in the newly opened areas to be held. Production might begin 5-10 years from the lease sale if commercial quantities were found. However, in certain areas of the OCS, production, if resources are discovered, could come onstream much sooner, thus, revenues might be generated as soon as 2010, assuming there is known geological data and infrastructure requirements, among other variables, are in place. To receive revenues as early as 2010, an assumption is made that the administration would begin its new 5-year OCS leasing program in 2010. Further, a lease sale would need to occur in 2010 along with drilling and development. According to assumptions in this memo, most of the revenues would likely be generated beyond 2018. The revenue estimates are based on the mean resource estimates provided by the Department of the Interior and the base forecasted price ($113/barrel oil, $10.64/thousand cubic foot of natural gas) by the Energy Information Administration within the Department of Energy. Price and revenue estimates are in nominal dollars. Revenue estimates are not discounted to reflect present value. These revenue projections are very rough and meant to reflect what might happen, not what will happen. Data in Tables 1 and 2 reflect receipts to the General Treasury only and do not include bonus bids and rents collected or revenues to the states.

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[1] The Mineral Leasing Act of 1920, as amended, established a minimum royalty rate of 12.5% for federal leases. The most recent offshore lease sales contained a royalty rate of 18.75%. MMS Congressional Affairs representative Lyn Herdt indicated that MMS would likely continue to impose the 18.75% rate on offshore leases in the foreseeable future.

[2] For a more detailed discussion of revenue sharing see CRS Report RL33493 *Outer Continental Shelf: Debate Over Oil and Gas Leasing and Revenue Sharing* by Marc Humphries.

Royalty revenue estimates in Table 1 assume the federal government (General Treasury) would receive a 50% share and the coastal states would receive 50%. Statutory allocations to the NHPF and the LWCF would come out of the revenues allocated to the General Treasury. This assumption reflects a distribution formula that is included in nearly all of the legislation proposed to lift the moratoria in the outer continental shelf (OCS). The royalty revenue estimates in Table 2 are based on the current onshore distribution allocation that distributes 50% to the states, 40% to the Reclamation Fund, and 10% to the General Treasury. This formula also includes revenue estimates from ANWR. Alaska would also receive 50% of the estimated royalty revenues.

Corporate income tax estimates are based on calculating pre-tax profits from assumed oil production in the newly opened areas, then multiplying that amount by an estimated effective federal corporate income tax rate for large integrated oil companies that would have an interest in oil and gas development. Net pre-tax profit for those companies averaged 31% of revenue and the average effective tax rate for the years 1998-2005 was 33%.[3]

Caveats

These rough estimates should be used with caution. There are major uncertainties involved. First, the amount of recoverable resource is an estimate based on assumptions and probabilities; in fact, they are educated guesses. Second, projecting the price of oil for a few years is difficult and complex; projecting for decades is highly uncertain. Lastly, the possible legislation and its terms are not known at this time.

Results

Given the above caveats, OCS leases might generate royalty revenue, (over a 50-year period), of about $518.5 billion of which 50% ($259.25 billion) might go to the states and 50% ($259.25 billion) might go to the General Treasury. Corporate income tax revenue is estimated to be about $283 billion.

Onshore leases (excluding ANWR) in areas that might be opened might generate an estimated total royalty revenue of about $280 billion, of which about $28 billion would flow to the General Treasury, $140 billion to the states and $112 billion to the Reclamation Fund. Corporate income tax revenue is estimated at about $230 billion.

ANWR leases might generate royalty revenue of about $114 billion of which $11.5 billion might go to the General Treasury, $57 billion might go to the states, and $45.5 billion might go to the Reclamation Fund. Corporate income tax receipts could total about $95 billion.

[3] For more details on corporate income tax rates and production costs see CRS Report RL34547 *Possible Federal Revenue from Oil Development of ANWR and Nearby Areas* by Salvatore Lazzari.

Table 1. Federal OCS Revenue Estimates From Areas Currently Under Moratoria (billion $U.S.), 2010-2068

	UTRR Oil (billion barrels)	Oil Royalty Revenue	UTRR Natural Gas (trillion cubic feet)	Natural Gas Royalty Revenue	Total Royalty Revenue	Corporate Income Tax Revenue
Atlantic						
North	1.91	20.25	17.99	18.0	38.25	41.65
Mid	1.50	15.89	15.13	14.65	30.54	33.4
South	0.41	4.34	3.86	3.74	8.08	8.81
Total Atlantic	3.82	40.48	36.88	36.39	76.87	83.86
Gulf of Mexico						
Eastern	3.44	36.44	19.37	18.78	55.22	60.25
Pacific						
Wash/Ore	0.40	4.23	2.28	2.21	6.44	7.0
Northern Ca.	2.08	22.0	3.58	3.47	25.47	27.78
Central Ca.	2.31	24.45	2.41	2.33	26.79	29.24
Southern Ca.	5.58	59.0	9.75	9.45	68.45	74.8
Total Pacific	10.37	109.7	18.02	17.46	127.15	138.82
Total OCS	17.63	186.61	74.37	72.63	259.24	282.93

Source: Department of the Interior, Statement of C. Stephen Allred, before the Senate Committee on Energy and Natural Resources, Resource Estimate Table, January 25, 2007.

Notes: Major assumptions include: OCS royalty rate = 18.75% (ad valorem) price: oil = $113/barrel, natural gas = $10.64/Mcf, 58-year time horizon, 50% of the estimated royalty revenue would go to the General Treasury and 50% to the states. The table presents estimates of revenue to the General Treasury only.

Table 2. Federal Onshore and ANWR Revenue Estimates in Areas Currently Classified Inaccessible (billion $U.S.), 2018-2068

	UTRR Oil (billion barrels)	Oil Royalty Revenue	UTRR Natural Gas (trillion cubic feet)	Natural Gas Royalty Revenue	Total Royalty Revenue	Corporate Income Tax Revenue
Onshore	12.0	16.9	86.5	11.18	28.08	230.2
ANWR	7.5	10.59	8.0	0.84	11.44	95.16

Source: Interagency report, *Inventory of Onshore Federal Oil and Natural Gas Resources and Restrictions to Their Development, Phase III Inventory*. In compliance with the Energy Act of 2000, P.L. 106-469, as amended by the Energy Policy Act of 2005, P.L. 109-58.

Notes: Major assumptions include: Onshore and ANWR royalty rate = 12.5% (ad valorem), price: oil = $113/bbl, natural gas =$10.64/ Mcf, 50-year time horizon, General Treasury would receive 10%, the Reclamation Fund would receive 40% and the states would receive 50% of the estimated royalty revenue. The table presents estimates of General Treasury revenues only.