

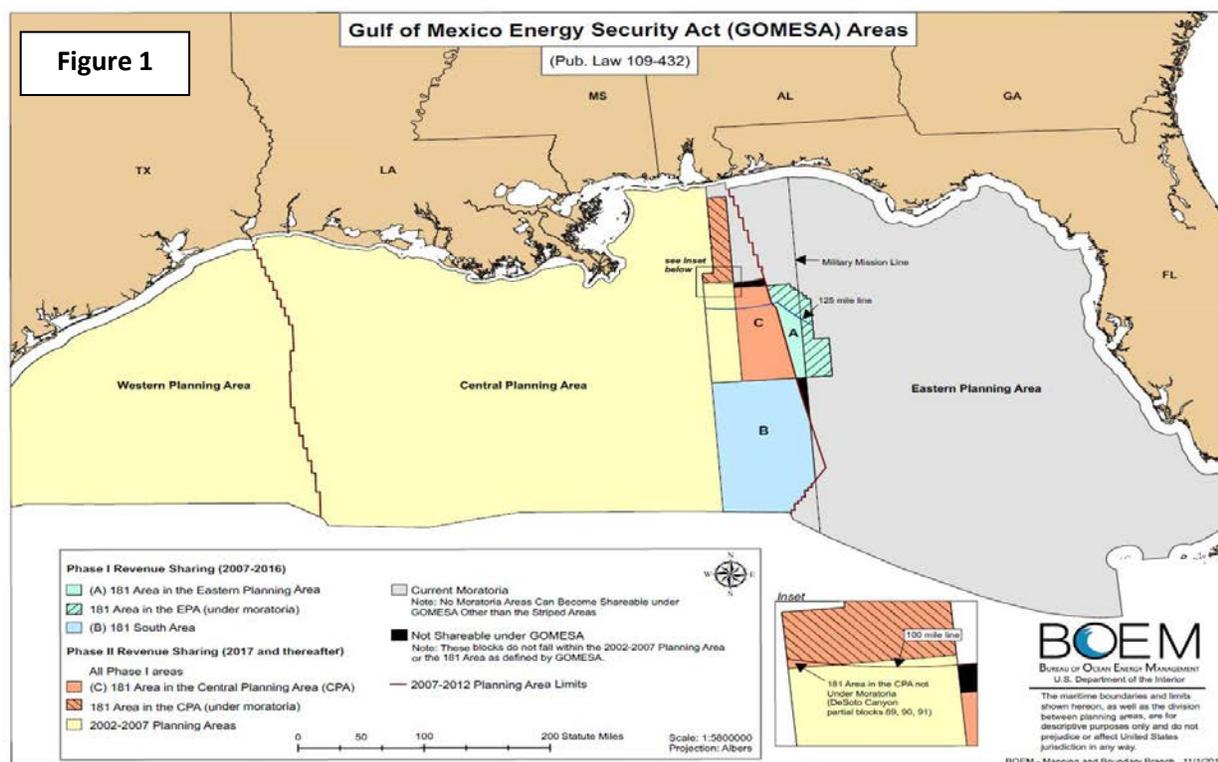
GOMESA Phase II Revenue Sharing

The Bureau of Ocean Energy Management's Estimates of Historical Qualified Outer Continental Shelf Revenues & Sharing Proportions with Gulf Producing States & their Coastal Political Subdivisions

Introduction

The Gulf of Mexico Energy Security Act of 2006 (GOMESA) established permanent sharing of Federal revenues from oil and natural gas leasing and production on the Gulf of Mexico (GOM) Federal Outer Continental Shelf (OCS) with the states of Alabama, Mississippi, Louisiana, and Texas. The GOMESA statute provided for two phases of revenue sharing. The Phase I areas indicated on the map which is Figure 1 started sharing revenue immediately. This paper is only concerned with GOMESA Phase II and will present details about the three basic types of revenues to be shared, estimates of the historic amounts for the 3 revenue sources, materials for estimating future revenues, an explanation of the allocation formulae for revenue sharing, and estimates of allocable shares to all stakeholders.

GOMESA Phase II revenues to be shared with Gulf producing States (GPS) and their associated Coastal Political Subdivisions (CPS) are highly variable. The revenues are primarily dependent on the prices of crude oil and natural gas. Under GOMESA Phase II, Qualified OCS Revenues (QOCSR) consisting of bonus bid, rental, and royalty revenues, from leases generally in the Western and Central Gulf of Mexico (GOM) (Figure 1), will be shared 50% with GPS (37.5%) and the Land and Water Conservation Fund (12.5%) (LWCF).



The revenue will be subject to the following provisions:

- Fiscal year 2017 is the first year of revenue sharing under GOMESA II.
- The revenue is from applicable leases sold since passage of GOMESA on December 7, 2006.
- Of the revenue to be shared, 25% is to be distributed to the LWCF and 75% to the GPS. Twenty percent of the GPS distribution is to be further distributed to the State's CPS.
- At a minimum, each GPS will receive 10% of the revenue shared with all the GPS.
- For the first 40 years of GOMESA II revenue sharing, the maximum amount available for sharing each year is \$500 million (MM), after which there will be no maximum sharing amount.

Historical Data

Lease bonuses, lease rentals, and royalties have been produced from GOMESA II leases since Western Gulf of Mexico Lease Sale 204 held on August 22, 2007, the first lease offering following passage of GOMESA by the 109th Congress in December 2006. As of September 30, 2015, there were 16 applicable lease sales in the Central and Western GOM planning areas and 4,462 leases were acquired by industry from those lease sales. Also as of September 30, 2015, 3,091 of these leases were still active, meaning currently under lease, and are either paying rentals or royalties. Table I, *Estimated GOMESA II Production and Historic Qualified OCS Revenues Since Enactment of GOMESA*, provides an accounting of historical information through FY 2015 resulting from the leasing of these 4,462 GOMESA II tracts. Table I lists the estimated QOCSR for fiscal years 2008 through 2015 and demonstrates the components and the calculation of QOCSR. Table I also reflects the complexities and the uncertainties of those components, and how the QOCSR can vary and change unexpectedly. Finally, it is important to recognize that GOMESA II QOCSR and revenue sharing do not actually begin until QOCSR are generated and collected in FY 2017.

Oil and gas production from GOMESA II leases can be subject to one of several royalty arrangements depending on when the GOMESA II leases were acquired. Leases acquired in lease sales held in 2007 are 1/6th royalty rate leases, leases acquired after 2007 are 3/16^{ths} royalty rate leases. Further, leases in water deeper than 400 meters acquired from 2007 through 2010 are entitled to deep water royalty relief subject to oil and gas price thresholds. This royalty relief affords royalty free production up to a royalty suspension volume (RSV) of 5 MMBOE of oil and/or gas produced from leases in 400 to 800 meters of water depth. The other applicable relief RSV categories are 9 MMBOE in water 800 to 1,600 meters; 12 MMBOE in water 1,600 to 2,000 meters; and 16 MMBOE in water deeper than 2,000 meters.

The RSVs apply only to the first production from the lease and the RSV is exhausted by any oil and/or gas production up to that amount regardless of whether or not royalties are paid on that production. For all years of production in Table I, deep water leases would be expected to pay royalties on oil production as oil prices were above the designated oil price thresholds. However, royalties were not payable on deep water gas production up to each lease's RSV as gas prices have been less than the designated gas price thresholds each year.

Table I
Estimated GOMESA II Production and Historic Qualified OCS Revenues (QOCSR)¹ Since Passage of GOMESA

	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
GOMESA II Leases Producing ²	1,559	6	14	18	24	33	40	46
GOMESA II Tracts Leased in Fiscal Year	1,559	641	601	-	623	474	323	241
Active GOMESA II Leases at Fiscal Year End	1,559	2,147	2,647	2,573	2,752	3,204	3,238	3,091
Production from 1/6 Royalty Leases ³								
Oil Production (bbl)		1,170,941	1,169,338	1,284,098	1,626,323	1,371,006	1,342,021	2,147,194
Gas Production (Mcf)		31,467,755	33,284,501	29,003,169	25,647,919	19,872,421	12,864,386	12,297,716
Royalty Free Gas ⁴ (Mcf)		-	-	-	4,360,395	5,711,573	2,841,923	326,907
Royalty Gas (Mcf)		31,467,755	33,284,501	29,003,169	21,287,524	14,160,848	10,022,463	11,970,809
Effective Royalty Rates ⁵								
Oil		16.56%	16.56%	16.56%	16.56%	16.56%	16.56%	16.56%
Gas		15.50%	15.50%	15.50%	15.50%	15.50%	15.50%	15.50%
Production from 3/16 Royalty Leases ⁶								
Oil Production (bbl)		9,716	4,212,891	366,141	2,472,250	7,826,441	8,481,904	11,084,831
Gas Production (Mcf)		904,508	5,772,104	8,189,793	22,176,160	23,170,291	31,027,755	45,271,486
Royalty Free Gas ⁴ (Mcf)		-	2,152,001	-	7,039,165	10,898,725	9,141,453	8,023,568
Royalty Gas (Mcf)		904,508	3,620,103	8,189,793	15,136,995	12,271,566	21,886,302	37,247,918
Effective Royalty Rates ⁵								
Oil		18.16%	18.16%	18.16%	18.16%	18.16%	18.16%	18.16%
Gas		17.24%	17.24%	17.24%	17.24%	17.24%	17.24%	17.24%
Royalty Oil Production ⁷ (bbl)		195,678	958,777	279,150	718,327	1,648,452	1,762,695	2,368,769
Royalty Gas Production ⁷ (Mcf)		5,032,484	5,782,068	5,906,185	5,907,855	4,309,562	5,325,361	8,274,919
NYMEX Oil Price (\$/bbl Average for FY) ⁸		\$ 87.07	\$ 77.20	\$ 92.77	\$ 95.67	\$ 95.67	\$ 99.12	\$ 56.68
NYMEX Gas Price (\$/MMbtu Average for FY) ⁹		\$ 6.77	\$ 4.64	\$ 4.15	\$ 2.81	\$ 3.65	\$ 4.28	\$ 3.03
Estimated Royalties ¹⁰		\$ 51,120,275	\$ 100,845,528	\$ 50,421,645	\$ 85,318,598	\$ 173,441,100	\$ 197,526,942	\$ 159,330,077
Bonuses ¹¹	\$ 6,779,613,145	\$ 758,453,447	\$ 1,034,519,460	\$ -	\$ 2,009,921,242	\$ 1,435,549,296	\$ 868,900,300	\$ 643,484,672
Rentals ¹²	\$ 25,547,189	\$ 35,364,001	\$ 43,405,882	\$ 42,238,849	\$ 45,212,273	\$ 52,760,119	\$ 53,069,657	\$ 50,662,009
Total Estimated QOCSR ¹	\$ 6,805,160,334	\$ 844,937,723	\$ 1,178,770,870	\$ 92,660,494	\$ 2,140,452,112	\$ 1,661,750,515	\$ 1,119,496,899	\$ 853,476,758

Table I Footnotes:

¹Production figures shown are unofficial, also QOCSR for GOMESA Phase II do not actually begin until FY 2017, these QOCSR estimates are intended to show the progression of potential QOCSR over time building up to FY 2017.

²Shown are the progression of GOMESA II leases acquired since 12/7/2006 that produced oil or natural gas during the fiscal year.

³GOMESA II leases acquired in 2007 carry a 1/6th royalty rate.

⁴Deep water (greater than 400 meters) GOMESA II leases acquired between 2007 through 2010 get deepwater royalty relief subject to price thresholds, gas price thresholds have been above gas prices every year since passage of GOMESA affording gas from these leases to be produced royalty free either until the royalty suspension volume (RSV) for the lease is met or until gas prices rise above the price thresholds. RSV's are based on oil and gas production combined regardless of whether royalties are due on either product.

⁵Effective Royalty Rates are estimated royalty rates based on historical averages for leases with that royalty rate. The effective rates are calculated by dividing royalties received by the sales volumes and are less than the lease royalty rates because of transportation and processing allowances that enter into royalty calculations. This method is a means of estimating the effects of those allowances.

⁶GOMESA II leases acquired after 2007 carry a 3/16ths royalty rate.

⁷Royalty production is the production (oil or gas) times the respective effective royalty rate for both royalty rate lease categories added together. The result is the estimated royalty share of production.

⁸NYMEX Oil Price is for light sweet crude oil.

⁹NYMEX Gas Price is for Henry Hub gas.

¹⁰Estimated Royalties are the sum of Royalty Oil Production times NYMEX Oil Price and Royalty Gas Production times NYMEX Gas Price. It was assumed that one Mcf of gas was equivalent to one MMBtu for these calculations.

¹¹Bonuses are lease bonuses for tracts leased during the fiscal year. Fiscal year timing is by when the lease was issued not by the date of the lease sale which puts results from August lease sales in the following fiscal year.

¹²Rentals are estimated at \$3 per acre of non-producing active leases.

Production in Table I was segregated according to royalty rate. In addition, royalty free gas production was extracted before the royalty values were estimated. Effective royalty rates from all recent GOM production with the same lease royalty rate were used to estimate the royalties. Effective royalty rates were calculated across all similar royalty rate leases by dividing the royalties received from them by the sales value of their production. This calculation inherently accounts for transportation and processing allowances, simplifying the royalty estimation calculations. Finally, the oil and gas prices used for these estimations were the NYMEX oil and gas prices for each year.

Royalties for the year FY 2015 are the first GOMESA II royalties since FY 2011 to decline from the previous year. The decline in FY 2011 was caused by a greater than 70% decrease in oil production that year, most likely attributable to heightened safety standards devised and implemented following the *Deepwater Horizon* incident. However, production has increased steadily each year since then and the

drop in royalties in FY 2015 is clearly a function of lower oil and gas prices from FY 2014. Price uncertainty will likely have a bearing on GOMESA II royalties for the foreseeable future both from direct effects on the value of production but also from the indirect perspective of a reduced pace of OCS leasing, drilling, and development of new production on the OCS including GOMESA II leases.

Lease bonuses shown in Table I are actual lease bonuses received on tracts leased since the passage of GOMESA. Lease bonuses for GOMESA II are attributed to the fiscal year when the bonus bid was accepted and the lease was issued and not to the fiscal year when the lease sale was held. For example, bids from lease sales held in August are not likely to be accepted by BOEM until October or later which is in the following fiscal year (federal fiscal years begin on October 1st).

GOMESA II lease bonuses for FY 2015 of \$643MM were at the lowest level for any year since passage of GOMESA. Similarly, only 241 tracts were leased in FY 2015, also the lowest of the GOMESA II era. In contrast, FY 2008 saw the most leases sold and the highest level of lease bonuses with leases being 6-1/2 times greater than for FY 2015 and bonuses being over ten-times greater. As suspected for declining royalties, uncertainty over oil and gas prices are also likely the cause of this decline which may be expected to continue.

Lease rentals are the final component of QOCSR and are payable annually on each active non-producing lease issued since the passage of GOMESA. The applicable portion of the rentals for GOMESA is \$3 per acre per year for each tract. These amounts are estimated in Table I based on the acreage of active non-producing leases at the end of each fiscal year. Leases in 400 meters of water and less have 5-year primary lease terms, those in 400 to 800 meters of water are 8-year leases and leases in greater than 800 meters get 10-year primary terms. Since rentals are payable each year of the primary lease term, rental revenues are cumulative over a series of years. Estimated GOMESA II rentals have been building since the passage of GOMESA. As is true for the royalty estimates, the lease rentals are also estimated amounts that can vary from actual rental amounts received. This may be due to various reasons including the actual timing during each year when rentals are paid and how that timing might relate to the assumptions made here.

Estimated GOMESA II QOCSR is calculated for each fiscal year since passage of GOMESA by combining the estimated values of royalties, bonuses, and rentals. Again, revenue sharing under GOMESA II begins with QOCSR generated in FY 2017 so none of the revenues in Table I will be shared. Further, a primary purpose of this table is to demonstrate the components of the QOCSR, the complexities and the uncertainties of those components, and how the QOCSR can vary and change unexpectedly. For instance, the greatest year of GOMESA II QOCSR thus far has been FY 2008 when QOCSR were estimated to be \$6.8 billion. This was the first year of revenues and before any production or royalties were generated.

In contrast, FY 2015 QOCSR totaled only \$865MM, the third lowest annual total and the lowest since FY 2011 when no lease sales were held. Despite significant increases in royalty oil and gas production since FY 2014, much lower oil and gas prices resulted in lower royalties and lease bonuses. Low prices are

expected to continue for the foreseeable future making forecasting QOCSR for fiscal years 2017 and beyond problematic. This is important for predicting when QOCSR will exceed the annual \$1 billion cap for revenue sharing.

Production Statistics

Oil and gas production has occurred since November 2008 from GOMESA II leases and over that time several trends have emerged in this production information. Figure 2, *GOMESA II Monthly Oil and Gas Production*, presents the oil and gas production history of GOMESA II leases through FY 2015. The curves indicate an expected increasing trend in GOMESA II production. Figure 3, *Producing GOMESA II Leases*, is a monthly accounting of the number of GOMESA II leases that were producing oil and/or gas through FY 2015. The number of producing GOMESA II leases has been increasing in a linear fashion for over the past 5 years. Figure 4, *Monthly BOE per Producing GOMESA II Lease*, is the monthly average GOMESA II oil and gas production per producing GOMESA II lease through FY 2015 expressed in equivalent barrels of oil (BOE). For this analysis we have assumed that one barrel of oil equals one BOE and 5,620 cubic feet of gas equals one BOE. As the number of producing leases has grown, this average seems to have leveled off. Figure 5, *Oil Percent of BOE of Producing GOMESA II Leases*, is the fraction of monthly BOE production that is oil production. Again, as the number of producing leases has grown, this average too has grown steady.

Figures 3, 4, and 5 each provide a necessary component that when combined using the following relationships result in the production values of Figure 2:

$$\text{Oil Production (bbl)} = \text{Number of Leases} * \text{BOE of Production per Lease} * \text{Oil Percentage}$$

$$\text{Gas Production (mcf)} = \text{Number of Leases} * \text{BOE of Production per Lease} * (1 - \text{Oil Percentage})$$

Under more static economic conditions one could seemingly use this information from these established trends to accurately forecast oil and gas production. However, with oil prices in January 2016 having fallen to approximately one-third of where they were as recently as July 2014, it is conceivable that the upward trend in the number of GOMESA II lease producing will not continue at that pace. Also, while over the past 5 years the average BOE of production per GOMESA II producing lease has stabilized at approximately 50,000 BOE per month, this average could dramatically change with the addition of a prolifically producing lease. Hypothetically, the introduction of a lease, such as one in 2010 that produced over 1MM BOE per month for several months, could increase this average to 70,000 or more BOE per month. For example, over 64 percent of all GOM leases (GOMESA II and earlier) in greater than 800 meters of water produce more than 50,000 BOE per month and the average monthly production from these deep water leases is 200,000BOE.

A full 25% of BOE production from GOM waters deeper than 800 meters is from leases that produce more than 1 MM BOE per month. Therefore, as more GOMESA II deep water leases get developed the average production per lease is likely to increase. Similarly, the average oil percentage from BOE

production of all deep water GOM leases is 80% oil compared to 55% as indicated by the trend in Figure 5 for the GOMESA II leases. While using the emerging GOMESA II trends to forecast GOMESA II production is possible, these uncertainties coupled with uncertainties in oil and gas pricing, make forecasting GOMESA II production, royalty revenues, and QOCSR problematic and uncertain.

Figure 2 GOMESA II Monthly Oil and Gas Production

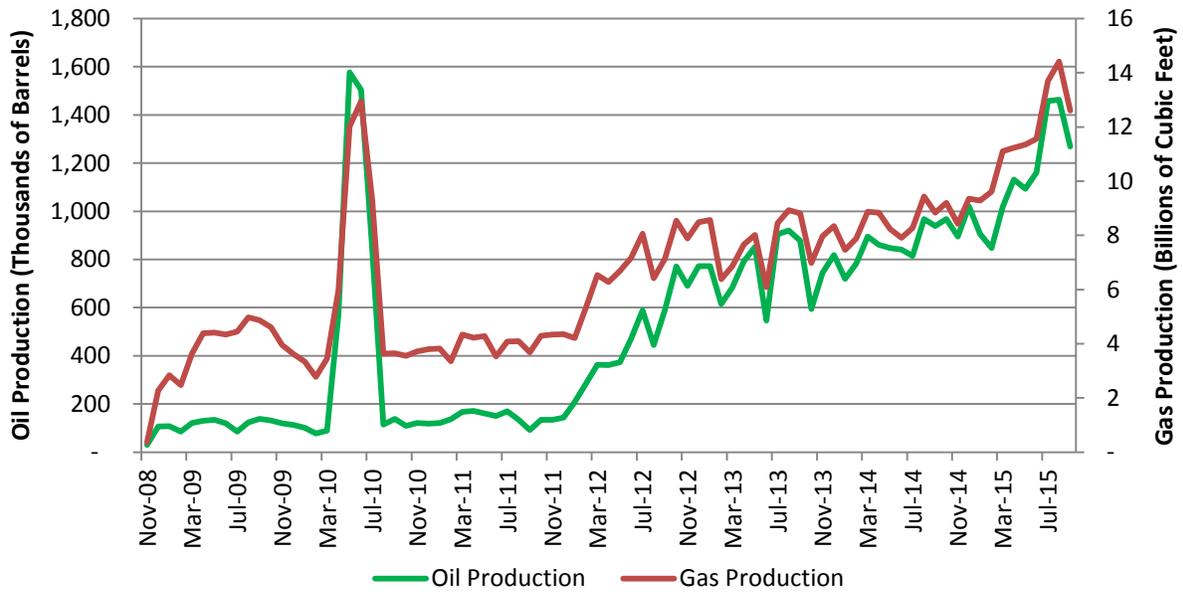


Figure 3 Producing GOMESA II Leases

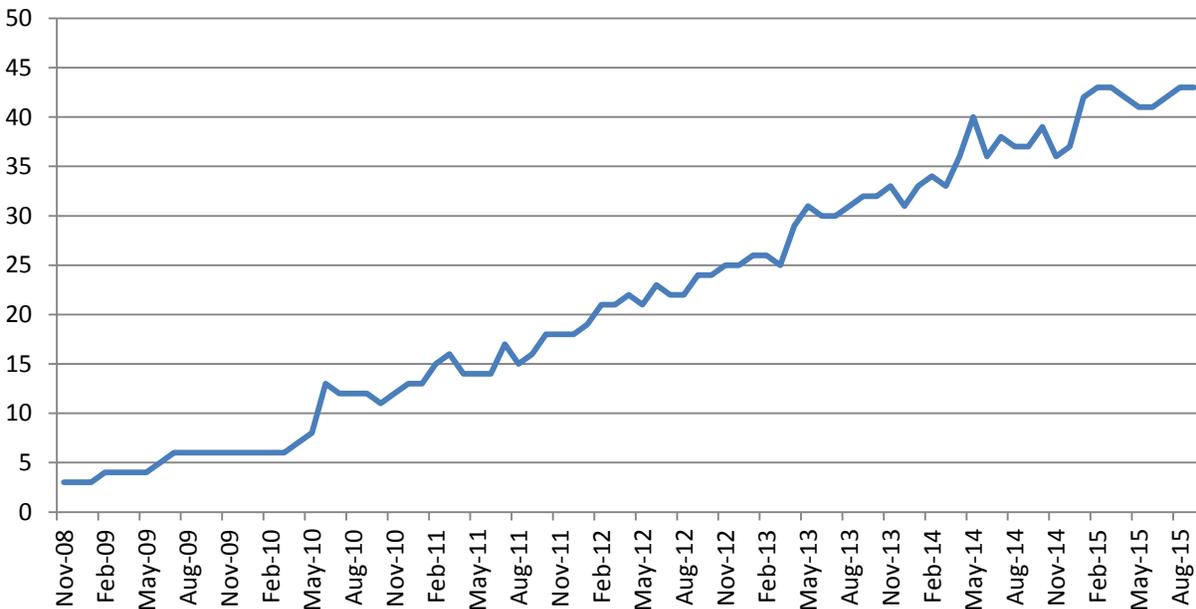


Figure 4 Monthly BOE per Producing GOMESA II Lease

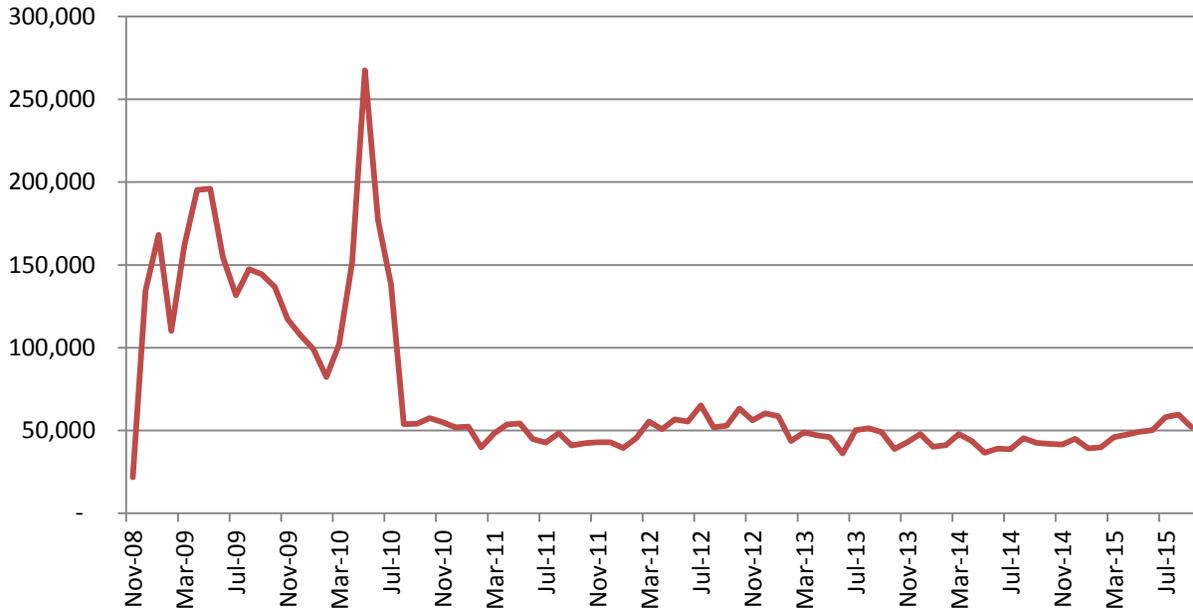
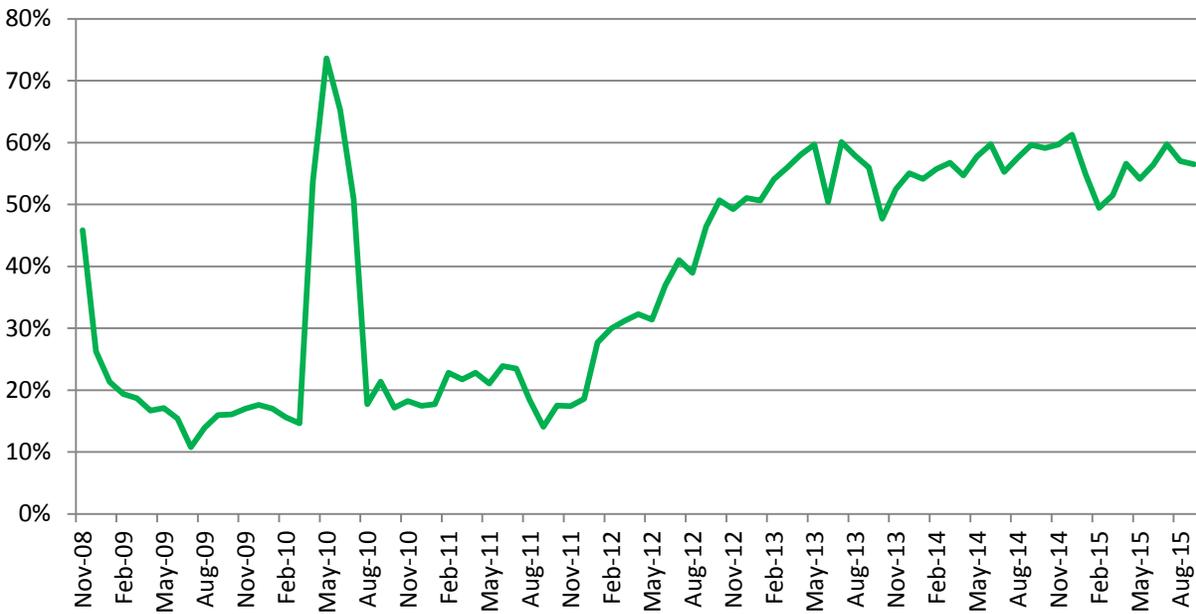


Figure 5 Oil Percent of BOE of Producing GOMESA II Leases



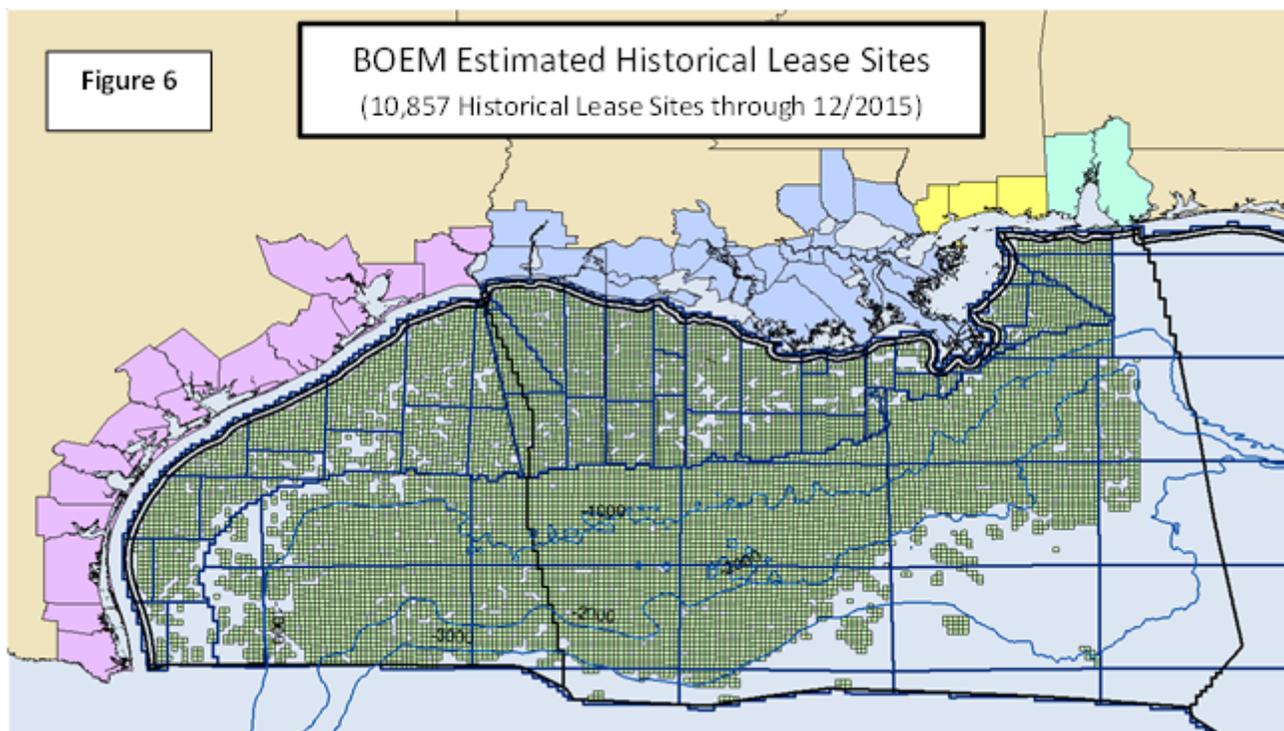
Revenue Sharing

Beginning in FY 2017, the GPS, CPS, and the LWCF will annually share 50% of the QOCSR generated each fiscal year under GOMESA II. For the years of FY 2017 through FY 2055, GOMESA II sharing is limited at \$500MM per year (if and when the annual QOCSR reaches at least \$1 billion in a year for this sharing cap

to be invoked). The shared revenue is payable 75% to the four GPS (Alabama, Mississippi, Louisiana, and Texas) and their 42 CPS, and 25% to the LWCF. Each GPS and its CPS are guaranteed to receive at least 10% of the shared revenue payable to the four GPS and their 42 CPS. Of the share to the states, 80% is to be paid directly to the GPS themselves while the remaining 20% directly to the CPS.

The shared revenue payable directly to the GPS is to be allocated in amounts that are inversely proportional to sum of the distances between each historical lease site (HLS) and the corresponding closest point on the coastline of each GPS. This means that a GPS that is closer to more HLSs than another GPS will receive a larger allocation.

Figure 6, *BOEM Estimated Historical Lease Sites*, is a map of the 10,857 HLS that have been unofficially determined by BOEM to exist through December 31, 2015 (the effective date for when the HLS are set for the first five years of GOMESA II revenue sharing). This map also shows the coastlines of the GPS and the locations and outlines of the 42 CPS. BOEM has calculated the distances from each of the 10,857 HLS to the nearest point on the coastline of each GPS and to the nearest point of each CPS. BOEM has compiled this information to calculate unofficial inverse distance shares used in the allocation calculations detailed in Table II. There are scenarios where the official inverse distance allocation could differ from these estimates. For example, the Office of Natural Resources Revenue's (ONRR) official records could indicate a different set of HLS than the 10,857 determined by BOEM or ONRR's distance calculating algorithm may be more precise.



The calculation of allocations to the CPS is more complex as it involves two components in addition to the inverse distance component also used for the GPS allocations. These are the population component, where CPS of higher populations would receive higher allocations, and the coastline length component, where CPS of greater coastline lengths would receive higher allocations. In these CPS allocation calculations, the inverse distance component is used to determine the allocation of 50% of the CPS' QOCSR while the population and coastline length components are each used to determine the allocation of 25% of the CPS' QOCSR.

As can be seen in the diagram of the CPS outlines in Figure 6, not every CPS has a coastline on the Gulf of Mexico. Accordingly, for the State of Louisiana only, there is a special provision that awards Louisiana CPS without a coastline a proxy coastline length equal to one-third of the average of the coastline lengths of Louisiana CPS with a coastline. A CPS without a coastline in any of the other GPS has "0" for their coastline length component and will receive no revenue from this component share of the calculations. This special provision for Louisiana CPS does not affect the allocations for CPS of other States.

Table II, *BOEM Unofficial Estimated Allocations of \$500,000,000 GOMESA II Revenue to the Gulf Producing States and their Coastal Political Subdivisions Based on Historic Lease Sites*, presents BOEM's unofficial estimated allocations of \$375MM in GOMESA II revenues to the GPS and their CPS. The allocations are unofficial for various reasons including, but not limited to: 1) it is the responsibility of ONRR to collect and disburse revenues from Federal oil and gas leases; 2) as noted above, the set of HLS may not be definitive and the inverse distance calculations made with them may not be 100% accurate for the reasons listed; 3) ONRR have a more accurate method of measuring the closest point from each HLS to the coastline of each GPS and the border of each CPS.

Table II represents BOEM's best current estimate of the allocable shares to each GPS and each CPS in any years where the GOMESA II revenue sharing cap of \$500MM is achieved. The LWCF would receive the other \$125MM above the GPS and CPS shares totaling \$375MM. To achieve this cap a minimum of \$1 billion of QOCSR must be collected from GOMESA II leases during a fiscal year. In fiscal years where the sharing cap is not met, the allocable shares revenue to each GPS and CPS should be proportional to the ratio of the total QOCSR collected in the fiscal year to the \$1 billion in QOCSR estimated in the example calculations comprising Table II.

Finally, the level of precision implied within Table II is not intended to be a signal of confidence in the accuracy of the data leading to these calculations using BOEM's estimated data. But rather it is intended as an illustration of the level of precision that will be utilized for the allocations once they are determined by ONRR. It is expected that the "Total Direct to State Allocations" and the "Total Direct to CPS Allocations" indicated will be accurate to within a few percentage points for each GPS and CPS given the uncertainties in the allocation calculations expressed herein for a year when the sharing cap is attained.

Summary

GOMESA Phase II revenue sharing begins with QOCSR generated from leases in the Central and Western GOM in FY 2017. This revenue will be comprised of lease bonuses, lease rentals, and lease royalties received during FY 2017 from leases acquired since enactment of GOMESA in December 2006. With the understanding that this population of leases is growing as leasing and development of them continues, estimations of these revenues historically provide clear indicators that prevailing oil and gas prices have a big effect on their magnitudes. Evidence to this are QOCSR estimates for FY 2014 of \$1.12 billion when oil prices were \$99.12/bbl and gas prices were \$4.28/MMbtu compared to QOCSR just one year later of \$0.85 billion when oil prices fell to \$56.68/bbl and \$3.03/MMbtu. The important question concerning QOCSR is if and in what years they may be expected to exceed \$1 billion which is the annual cap on QOCSR for revenue sharing through FY 2055, when the cap is lifted.

BOEM is aware of the interest of stakeholders in knowing the future magnitudes of QOCSR and on the expected shared revenues coming their way. BOEM is also acutely aware of the myriad uncertainties in factors contributing to future QOCSR including oil and gas prices, pace of leasing of GOMESA II leases, future magnitudes of lease bonuses paid for GOMESA II leases, and the pace of development of GOMESA II leases. Presented herein are historical values of the important components contributing to QOCSR along with data and suggested methods for estimating future production and GOMESA II royalties. This is provided for readers to use in crafting future QOCSR estimates based on their own beliefs of future uncertain variables. Finally, presented in Table II are BOEM's unofficial calculations of allocable shares of GOMESA II distributions that could be expected by the Gulf Producing States, their Coastal Political Subdivisions, and the Land and Water Conservation Fund in years where the sharing cap is met.