Administrative Overhead In Upstream Industry under Production Sharing, Joint Operating Contracts, Cost Accounting and IFRS

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Summary

- **Administrative overhead** can be shared among all operator and non-operator or can be only charged against non-operator, it depends on the terms of the agreements between the partners.

- **Operator's overhead** is allowed by joint operating contracts, considered as management fees which either is recognized as revenue in Operator's records based on paragraphs 52-53 of IAS 31 or be offset with the actual expenses based on requirements of international production sharing or joint operating agreements.

- **Some International production sharing and joint operating** contracts do not allow including element of profit in charging the joint venture accounts by administrative overhead. If profit is included, Cost recovery or Joint Venture audit may request to remove such profit from joint accounts. Therefore, recording recovery administrative overhead depends on contractual terms, criteria of revenue recognition and management decision

- **Operator's overhead that is allowed by Production Sharing Contract** does not meet the criterion of revenue recognition which requires benefit flow to entity should be probable [*Par of 20.b, 26, 27 and 28 of IAS 18*].

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The overhead is one of the important issue that is cared by petroleum accountant or auditor which can be a disputed item between government and contractors and even between operators and non-operating partners. Therefore, how the overhead is accounted for in joint accounts and in corporate accounts.

First we need to define some common words and abbreviation that are used in this article.

PSC is initial indicates to Production Sharing Contract

JOC is initial indicates to Joint Operating Contract

Contractor is stated in PSC and referred to the foreign investor that sign on PSC or is jointly and collectively foreign investors that sign on PSC. Contractor indicates to both operating and non-operating partners.

Operator is more common stated in JOC and referred to one of the jointly foreign investor that is responsible for operating the lease/acreage based on signed JOC.

Non-Operator is a party other than operator.

Allowed Overhead is the administrative indirect cost that can be recovered either from cost oil per PSC or from partners per JOC.

Actual Overhead is the administrative indirect cost that is incurred actually in return of rendering services.

Operator's indirect costs are not allowed to be charged to joint accounts, but international joint operation (JOCs) indicate that operators are allowed to recover part of their indirect charges that is incurred in return of its headquarter's or affiliated companies' contribution services for the lease/block, but in condition that the reimbursing operator overhead should not be used for creating profit for operator, therefore, this allowed administrative overhead is considered as management fees for operator.

Overhead allowed to be recovered by Joint Operating Contract

The operator's overhead that is allowed by JOC is recordable in Joint accounts as expense and as other income in Corporate accounts in accordance with the requirements of paragraph no. 52 and 53 of International Accounting Standard No. 31 (IAS 31). The overhead that is recovered by JOC's terms and is recorded as revenue in Corporate account, meet the following criteria of revenue recognition for rendering of services:

a. The amount can reliably be measured
b. There is probable economic benefit that will flow to company
c. The costs that are related for generating the revenue is incurred and can be measured reliably

The amount of recovery overhead can reliably be measured based on the contractual or agreed calculation. The probable that is allowed to record the contingency is measured by 50% of level of confidence. Therefore, Operator's overhead that is allowed by JOC is 100% assured to be collected from partners because there is contractual obligation on the partners to pay their portion of such overhead to the operator within the periodic cash calls. Headquarter and affiliated companies of operator render their services, and the joint venture lease/block received their services and liable to pay the cost of the services.

Some oil and gas companies may not to recognize the credit side of entry as revenue or other income, and it is recorded as "Administrative overhead Control" that offset with the actual allocated administrative overhead or actual specific expenses [*Cecil H. ("C.H.") Moore, James D. Grier. 1985. Accounting Standards and Regulations for Oil and Gas Producers. Paramus, N.J. Prentice-Hall Information Service, par 14.10*] to be in compliance with terms of some JOCs that require to refund or credit the joint account by allowed overhead in excess of actual overhead.

Operator's overhead that is allowed by JOC is not recovered from cost oil (production of oil) in many of PSCs, it is only recovered from paying-interest partners.

The accounting for operator overhead varies based on different accounting procedures and text in the JOCs. JOCs can indicate to either following scenarios.

1) An Indirect Charge is to compensate Operator's home office, for its administrative contributions of performing services that is not to be considered as direct charge for the benefit of Joint lease/acreage. The allowed overhead shall be charged to the Joint Account. If the allowed minimum overhead exceeds the actual operator overhead, the excess should be refunded to non-operating parties or applied as credit against indirect charges. The portion of all joint account costs or credits shall be charged to each party.

2) The operator shall be compensated for non-chargeable cost of its parent or affiliates for the administrative contributions for supporting joint venture by charging the non-operator by the allowed overhead. Allowed overhead shall be excluded for measuring net income or loss. In other words, shall be not shared among parties and shall be 100% payable to non-operator to compensate the operator by the fully allowed overhead amount and non-operator pay it proportionately based on their paying interest

Operator's Overhead is like management fees that allow the operator to reimburse other general expenses incurred by its parent or affiliates in carrying out some activities on behalf of non-operating partners and that is not covered by direct costs. The management fees are included in joint accounts as an expense specially if it is required by JOC.

In our example, Suppose that Company X is an operator and Corporate and affiliated companies should

- charge Joint accounts for actual G&A cost for overhead by amount of $1,000,000, but this amount is exceed the overhead that is allowed by JOCs by amount of $600,000.
- Therefore, Company X would charge joint accounts by amount of $400,000 through joint interest billing as allowed overhead (management fees) per JOCs.
- The overhead which is allowed by PSC is computed by $300,000.
- JOCs show the working interest of each partners as follow; Company X's share is 60%, Company Y's share is 25% and Company Z's share is 15%, and the total direct costs that are charged to joint account $1,000,000.

how much non-operators (Companies Y and Z) should pay Company X for allowed overhead?

To answer the question, we need to understand how the accounting procedures in JOC treat such overhead. The above JOC's provision that are provided as example lead to different accounting practices for overhead as follow.

Scenario 1: For the above examples and scenario 1 of JOC provisions show that the operator share with non-operators for the allowable overhead by amount of $400,000 and ask the non-operators to pay the allowed overhead fees based on their interests.

Joint Venture Accounts (Joint Account) reflect the following costs

Direct Cost	1,000,000
Allowed Overhead	400,000
Total Cost	1,400,000

Corporate accounts of operator reflects the following income statement items

Other Income		(400,000)
Total cutback exploration cost	(including overhead)	840,000
Net (Income)/loss		440,000

Scenario 2: For the above example and Scenario no. 2 of JOC provisions indicate that the non-operators should 100% pay the operator amount of $400,000 to recover the allowed operator's overhead fees

Joint Venture Accounts (Joint Account) reflects the following costs

Direct exploration Cost	1,000,000
Allowed Overhead	-
Total Cost	1,000,000

Corporate accounts of operator reflects the following income statements items

Other Income	(400,000)
Total cutback direct cost (excl overhead)	600,000
Net (Income)/loss	200,000

If the allowed overhead (management fee) is not clearly stated to include or exclude as expense in joint account, heated discussion will probably be happened because one interpretation will change the fully meanings and to be on favour of another partner. As it is seen in the above example the second scenario is in favour of operator more than in first scenario which reduce Corporate expenses from fees of managing the joint venture.

Many operators and petroleum accountants prefer

a) to record the operator overhead as expenses in joint account and other income in Corporate account by doing the following entry,

In Joint Venture Records			
Dr. License A - Overhead Expense		400,000	
Cr. Headquarter account			(400,000)
In Corporate Records			
Dr. License A - Overhead Expense	240,000		
Dr. License A – Accounts Receivable JV partners	160,000		
Cr. License A – Other Income		(400,000)	

b) but in some JOCs require not to include an element of profit or require to charge Joint Venture by only the actual costs and credit the joint venture accounts by excess of allowed overhead. Therefore, Other Companies prefer to record the allowed overhead as expense in joint account and credit in contra account such as “Overhead expense control” to offset the actual overhead with the applied overhead that is required by the contractual agreement.

The following accounting entries for using the contra account is little complicated but is easy for understanding and application. We will apply the previous example and scenario 2.

a) When the allowed overhead is charged to joint accounts, the accounting entry for allowed overhead is as follow

In Joint Venture Records		
Dr. License A - Overhead Expense	400,000	
Cr. Headquarter account		(400,000)

b) When Joint Interest Billing raised to the participants on the periodically basis, and the operator cuts back the joint accounts to record its share of joint costs to corporate accounts, the following entry will be as follow:

In Corporate Records		
Dr. License A - Overhead Expense	240,000	
Dr. License A – Accounts Receivable JV partners	160,000	
Cr. License A – Overhead Exp Control – Contra account		(400,000)

c) When the actual administrative Corporate and affiliates overhead is allocated based on appropriate allocation method to other licenses, the accounting entry will be as follow

In Corporate Records		
Dr. License A – Overhead Exp Control	1,000,000	
Cr. Corporate Cost Allocation Clearance		(700,000)
Cr. Affiliates Cost Allocation Clearance		(300,000)

d) The variance between the allowed overhead and the actual overhead can have different treatment as follow:

If the actual exceed the applied overhead, it is charged to "License A – overhead exp" in "Corporate accounts" and could not be charged to joint account because the joint account reflect the maximum allowed overhead that operator should charge Joint accounts. Therefore, the accounting entry will be as follow

In Corporate Records	
Dr. License A - Overhead Expense– in Corporate account	600,000
Cr. License A – Overhead Exp Control (in corporate acc)	(600,000)

If the aggregate positive variance (actual overhead is less than applied overhead) by cost center, it is referred to the management decision and either to be closed to the other income as it is required by IFRS or to charge back to the joint account of specific lease to remove any element of profit, if such thing is stated in the agreements. Assumed in above example that the actual overhead is $200,000 and allowed overhead that is required by JOC is $400,000. The accounting entries will be as follow

In Corporate Records	
Dr. License A - Overhead Expense Control– Contra account (in corporate acc)	200,000
Cr. License A – Other Income (in corporate acc)	(200,000) *
Or Cr. License A - Overhead Expense– in corporate acc	(120,000) **
Cr. License A – Accounts Receivable JV Partner- in Corp acc	(80,000)**
In Joint Venture Records	
Dr. Headquarter account	200,000
Cr. License A - Overhead Expense– in joint account	(200,000) **

** crediting other income by excess of allowed overhead as it is required by IAS 31.*

***crediting joint account by excess of allowed overhead, is shared between partners and required by agreement.*

e) In the consolidated financial statements, the intercompany transactions need to be eliminated, therefore, the impact of entries in point (c) and (d.1) need to be eliminated, if the in case of (d.2), only the impact of entry in point (c) need to be eliminated after deducting amount in (d.2) because the other amount of $200,000 effect third party (partners)

Overhead allowed to be recovered by Production Sharing Contract

Contractor's overhead that is allowed by PSC is recovered from cost oil (production of oil) based on PSCs' terms, and to paying-interest Contractor that represents operating and non-operating partners except the local Company of host government.

Author does not recommend to record such overhead either during exploration phase or development and production phase because under exploration phase there is no adequate certainty for economic benefit associated with recovering such cost [*par 28 of IAS 18*], and the main criterion of revenue recognition which is probable economic benefit will flow to entity [*par 20.b of IAS 18*], is not met.

In the exploration phase, the probable of recovering overhead that is allowed by PSC is adherent to probability of oil discovery and producing economically reserve (Chance of finding oil/gas and the commerciality of oil/gas). In undiscovered area, the geological risk is high and commerciality is more uncertain too [*Society of Petroleum Engineers, Oil and Gas Reserve Committee (OGRC), Mapping subcommittee, Final Report-December 2005, Comparison of Selected Reserves and Resource Classifications and Associated Definition: 14*]. However, the probability of oil discovery can be 50% in some undiscovered places, but the probability of commercial oil is less than 50% in those places too which the total probability of discovery and commerciality will be 25%, nevertheless globally the probability of success can be less than 25% *[Hillary Zaken. Jun 3, 2012. Potential for large natural gas find near Haifa: Estimates stand at 6.7 trillion cubic feet of gas, 1.4 billion barrels of oil. The Times Of Israel]*

Under IFRS, the probable threshold is implicitly measured by more than 50% and it is implicitly measured by more than 75% or 80% in US GAAP [*PricewaterhouseCoopers, IFRS, US GAAP, and US tax accounting method, comparing IFRS & US GAAP and assessing the potential implication on US tax accounting methods, February 2009: page 19*]. Therefore, the degree of uncertainty for oil discovery and producing economically reservoir is high that make revenue recognition is not probable and it is between reasonable possible or remote. Therefore, it is not appropriate to recognize the allowed overhead by PSC as revenue in this stage [*par 28 of IAS 18*], even though it is totally offset with the cutback expenses.

Under production stage, Author does not recommend to record the allowed PSC overhead too because the Contractor recover their cost which includes their overhead via cost oil. Cost oil is measured in and included in sold quantity of barrels then recorded in the revenue along with profit oil, therefore, no need to record the Contractor overhead allowed by PSC in the accounting books of either operator's book or non-operator's. If we did so, it will overstate the income by unreal revenue and overstate the expense by unreal expense, and complicate the related parties' transactions that may lead the affiliated Companies to make payments on behalf of each other for unreal business purpose that may give an indication to fraud.

Some oil companies do not record such overhead because it is already reported as revenue when Companies sell cost oil. To explain this, we can assume the following example, Contractor X sign PSC with a government that share the profit oil after deducting cost oil from oil production as follow: Government will take 70% and Contractor will take 30% of profit oil, Contractor Cost Recovery Statement she the following cost to recover it from oil produced and sold.

Direct Cost	$1,000,000
Indirect cost and allowed by PSC	$ 300,000
Total Recoverable Cost	$1,300,000

The oil price at FOB was $100 per barrel, assumed that Contractor can 100% cover the cost. And the annual production in bbls were 20,000 barrels.

The Company will compute the cost oil by dividing the total recoverable cost by oil price, therefore, the cost oil will be 13,000 barrel which include 3000 barrel to recover the indirect cost or the overhead that is allowed by PSC.

Contractor's will take 15,100 barrels (that represents 10,000 barrels to recover direct cost + 3,000 barrels to recover overhead expense that is allowed by PSC + 2,100 barrels are Contractor's share of profit oil). The revenue that will be recorded $1,510,000 (15,100 barrels x $100). The following entries in joint venture accounts and Corporate accounts will be as follow:

In Joint Venture Records		
Dr. Headquarter account or A/R– joint account	1,510,000	
Cr. License A - Revenue– in joint account		(1,510,000)
In Corporate Records		
Dr. License A – Accounts Receivable customer	822,000	
Dr. License A – Accounts Receivable JV partners	548,000	
Cr. License A – Revenue		(1,370,000)

In the above example clarify that revenue include the cost oil that cover the overhead and is already recorded as revenue. And no need to record the recovery overhead that is allowed by PSC again as revenue in Corporate account.

Not recording the recovery overhead that is allowed by PSC does not prevent us to record the actual overhead. Operator is allowed to charge the petroleum accounts by actual overhead but in condition of not exceeding the allowed limits of recovery overhead [*Model Production Sharing Contract between the Republic of Liberia represented by the National Oil Company of Liberia and Contactor X. Offshore Block Y. Appendix 1. Par II.2.3*]

Some practices are acceptable by view of both managerial and financial accounting as follow

- Some companies may record the overhead that is allowed by PSC in Joint Venture (JV) accounts for managerial purpose by crediting another account categorized under the same JV accounts and head account to clear or offset the PSC overhead expense for financial purpose. The below entry is an example:

<u>*In Joint Venture Records*</u>		
Dr. License A – PSC Overhead Expense	300,000	
Cr. License A –Overhead Exp Control		(300,000)

- Also some companies may record the PSC allowed overhead in JV account by its full amount, and JOC allowed overhead by residual amount (Full amount of JOC allowed overhead minus PSC allowed overhead) in JV account too for managerial purpose and credit other income in Corporate account by the full recovery overhead that is allowed by JOC for financial purposes. The below entry is an example of what we indicated above.

<u>*In Joint Venture Records*</u>		
Dr. License A – PSC Overhead Expense	300,000	
Dr. License A – JOC Overhead Expense	100,000	
Cr. Headquarter account		(400,000)
<u>*In Corporate Records*</u>		
Dr. License A – PSC Overhead Expense	180,000	
Dr. License A – JOC Overhead Expense	60,000	
Dr. License A – Accounts Receivable JV Partner- in Corp acc	160,000	
Cr. License A – Other Income		(400,000)

Due to the terms of some PSCs that require not to include an element of profit in computing administrative overhead and not exceeding the allowed overhead [*Model Production Sharing Contract for Petroleum Exploration and Production in Turkmenistan (Part 1).1997. Annex "D". par 2.5*], some oil and gas companies may do the following:

- When charge the petroleum operations by PSC overhead expense and crediting "Administrative overhead Control" that is categorized under the same joint accounts ledger not Corporate accounts to offset with applied and actual allocated administrative overhead.

<u>*In Joint Venture Records*</u>		
Dr. License A – PSC Overhead Expense	300,000*	
Cr. License A –Overhead Expense Control		(300,000)
* to record the allowed overhead based on PSC		

In Corporate Records
No entry because the expenses and expense control will offset each other.

- When charge the joint venture accounts by actual overhead. The following can be as follow:

In Corporate Records

Dr. Affiliate License A	200,000*	
Cr. Corporate Cost Allocation Clearance		(100,000)
Cr. Affiliates Cost Allocation Clearance		(100,000)

*Charge lease A by actual administrative overhead.

In Joint Venture Records

Dr. License A - Overhead Expense Control	200,000*	
Cr. Homeoffice		(200,000)

* to record the actual overhead

- The remaining balance that represents the variance between the recovery/allowed overhead and actual overhead shall be closed either in revenue in condition of excess of allowed overhead or in expense in condition of excess of actual overhead if the host government accept the excess of allowed overhead or recover the excess of actual overhead. If government request to reverse the excess of allowed overhead or refuse to recover the excess of actual overhead, either excess shall be reverse

If the host government accept and approve the excess of allowed overhead, the excess should be recorded as revenue for Contractor in JV records. And the accounting entry will be as follow.

In Joint Venture Records

Dr. License A - Overhead Expense Control	100,000**	
Cr. Revenue		(100,000)

** to record the excess that is approved by government as a revenue

In Corporate Records

Dr. License A – PC Overhead Expense	180,000	
Dr. License A – Accounts Receivable JV partners	80,000	
Cr. License A – Other Income		(60,000)
Cr. Affiliate License A		(200,000)**

** If the host government does not refuse the excess, and JV accounts reverse the excess:

If the host government refuse the excess of allowed overhead, the excess should be reversed for Contractor in JV records. And the accounting entry will be as follow.

In Joint Venture Records

Dr. License A –Overhead Exp Control	100,000	
Cr. License A – PSC Overhead Expense		(100,000)

In Corporate Records		
Dr. License A - Overhead Expense Control	120,000	
Dr. License A – Accounts Receivable JV partners	80,000	
Cr. Affiliate License A		(200,000)*

Operator's Overhead Allocation

Allocating overhead is necessary for oil and gas industry to determine the cost of contribution of fixed facilities assets for exploration, development and production activities. And contribution of headquarter and its affiliates to different licenses.

Petroleum exploration and production industry, Corporate allocate its overhead to its affiliates in the worldwide to determine the profitability of each license or affiliates or cost centre. Some oil Companies allocate the overhead to difference license accounts or affiliates through different level of timewriting, other companies prefer to use direct overhead allocation.

Management and Cost Accounting

For cost and management accounting, operating cost of headquarter and its regional offices needs to be allocated among cost centres/licences, the licenses are the end recipients of the services rendered by headquarters and other affiliates. Therefore, the allocation of such costs will take different levels but after identification of Cost pool by grouping the most similar costs and activities into one group, then Identifying the allocation base for each cost pool to departments or main cost centres.

Level 1:

Primarily distributes or charge cost to the relevant cost pool.

Level 2:

Allocate the cost pool to each department/main cost centre using the most appropriate

Level 3:

Allocate the department cost to the license based on labor hours of each department

Table 1: The most common cost pool and allocation base:

Cost Pool	**Allocation Basis**
a) Labor Cost	Labor Hours
b) Office supplies and consumption including water consumption other than utilities of phone and electricity	Number of employees for each main cost centre

c) Electricity cost	Area of each main cost centre
d) Phone costs	Number of employees for each main cost centre
e) Office Rent	Area for each main cost centre
f) Depreciation of owned building	Area for each main cost centre
g) Depreciation of owned fixed assets	Value of assets in the main cost centre
h) Fuel charges for transportation	Kilometres or miles travelled by boat, helicopter or vehicle

Cost Recovery Accounting

Cost Recovery accounting is governed by different agreements such as production sharing and joint operating contracts. Most of PSCs in the Middle East does not allow to directly charge the petroleum accounts by operator's overhead except for specific department such as technical departments and time spent by headquarter employee who visits license to perform specific tasks which are agreed with the host government or other JV partners. Therefore, Labor Cost needs to be allocated separately and directly to the license as direct recoverable costs but operating costs of headquarters and affiliated offices are not considered as direct costs to the license which needs to be allocated as via the above overhead allocation and methodology.

Direct costs should be separately recorded from overhead allocation to be easily tracked and verified by cost recovery auditor and to enable management to know how much they will recover from indirect costs. Also, the operator's overhead needs to be allocated based on budgeted rate which is required to be adjusted to the actual costs that shall not exceed the allowable limits of PSC or JOC. The excess needs to be closed to Corporate sole license accounts.

Conclusion

It is appropriate to record the administrative overhead of home office that is allowed by Joint Operating Agreement in the joint venture accounts as expenses and as revenue in Corporate accounts as it is required by IAS 18. Recognizing such overhead as revenue in Corporate account meets the criteria of revenue recognition.

Author recommends to not recognizing the administrative overhead of home office that is allowed by Production Sharing Agreement in joint venture accounts as expenses and as revenue in Corporate accounts because it does not meet the criteria of revenue recognition for probability of economic benefit that will flow to company during exploration phase. Even during production phase, recording revenue for overhead that is allowed by PSA makes duplication.

Sources:

Models and Samples of Production Sharing Contracts

- Model Production Sharing Contract For Exploration And Production In Kurdistan. Available at: http://www.eisourcebook.org/cms/Iraqi%20Kurdistan%20draft%20Model%20Production%20Sharing%20Contract.pdf
- Production Sharing Contract with Tunisian Government.
- Production Sharing Contract with Yemen Government.
- Model of Exploration And Production Sharing Agreement between National Oil Corporation established in Libya and other. Available at: http://www.eisourcebook.org/cms/files/attachments/other/Libya%20Model%20E&P%20Agreement,%20Oil%20&%20Gas.pdf
- Petroleum Production Sharing Agreement. The Government of Ethiopia. Ministry of Mines and Energy. Available at: http://www.eisourcebook.org/cms/Ethiopian%20Production%20Sharing%20Agreement.pdf
- Model Production Sharing Contract between the Republic of Liberia represented by the National Oil Company of Liberia and Contactor X. Offshore Block Y. Available at: http://www.eisourcebook.org/cms/Liberian%20Production%20Sharing%20Contract.pdf
- Agreement On the Joint Development and Production Sharing for the Azeri and Chirag Fields and The Deep Water Protion Of The Gunashli Field in The Azerbaijan Sector Of The Caspian Sea. Available at: http://www.bp.com/liveassets/bp_internet/bp_caspian/bp_caspian_en/STAGING/local_assets/downloads_pdfs/pq/ACG_PSA.pdf
- Model Petroleum Agreement Of Ghana. Available at: http://www.eisourcebook.org/cms//files/attachments/policy-legal-contractual-regulatory/Ghana%20-%20Model%20Petroleum%20Agreement.pdf
- Model Production Sharing Contract for Petroleum Exploration and Production in Turkmenistan (Part 1). Available at: http://www.google.com/url?sa=t&rct=j&q=turkmenistan+production+sharing+agreement&source=web&cd=2&cad=rja&ved=0CDEQFjAB&url=http%3A%2F%2Ffaolex.fao.org%2Fdocs%2Ftexts%2Ftuk81989E.doc&ei=RYLAUPa1LYfzsgaZl4HACQ&usg=AFQjCNEgd2QW1dw38u3qvnU6_qP8sHOL-Q

Models and Samples of Joint Operating Contracts

- Joint Operating Contract between two companies for license operated in Yemen
- Joint Operating Contract between four companies for license operated in Yemen
- Joint Operating Contract between two companies for license operating in Kurdistan, Iraq

Newspapers:

- Hillary Zaken. Jun 3, 2012. Potential for large natural gas find near Haifa: Estimates stand at 6.7 trillion cubic feet of gas, 1.4 billion barrels of oil. The Times Of Israel
- September 24, 2012. Resource Round-up: Kefi Minerals, San Leon, New World Oil & Gas. Hargreaves Lansdown.
- Reuters. Oct 17, 2012. Geologist: Leviathan's prospects encouraging for entire region. Texas-based Noble Energy provided a forecast with 25% probability of geological success for finding oil in the deep layers of Leviathan field. Haaretz.

Reports

- Society of Petroleum Engineers, Oil and Gas Reserve Committee (OGRC), Mapping subcommittee, Final Report-December 2005, Comparison of Selected Reserves and Resource Classifications and Associated Definition.
- PricewaterhouseCoopers, IFRS, US GAAP, and US tax accounting method, comparing IFRS & US GAAP and assessing the potential implication on US tax accounting methods, February 2009.

International Accounting Standard

- International Accounting Standards. 2009. Revenue Recognition. International Accounting Standard (IAS) No. 18.
- International Accounting Standards. 2009. Interest in Joint Venture. International Accounting Standard (IAS) No. 31.

Book

- Cecil H. ("C.H.") Moore, James D. Grier. 1985. Accounting Standards and Regulations for Oil and Gas Producers. Paramus, N.J. Prentice-Hall Information Service.