

Opinion on Basra Gas Company-BGC
(Joint venture between South Gas Company and Shell & Mitsubishi)

To:

- H.E. Adnan Al-Janabi, Chairman-OGNRC
- Excellencies, Members of Oil, Gas and Natural Resources Committee-OGNRC,
The Iraqi Federal Parliament,
Baghdad,
Iraq.

From:

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Dear Mr. Al-Janabi,

I am pleased to provide hereunder, as requested, my opinion on the joint venture Basra Gas Company-BGC as communicated to your esteemed Committee by the Ministry of Oil Summary Memo- MoOSM.

The MoOSM' five pages contain ten items pertaining to the basic economic components of the proposed BGC.

This opinion falls in three parts: the first part provides the executive summary of my opinion, part two addresses each of the ten items of MoOSM in their chronological order, while part three provides further assessment and remarks pertaining to this joint venture in a wider perspective.

Part One

Executive Summary

An it-depth examination and crosschecking of its contents and data, the MoOSM appears to suffer from very serious flaws, inaccuracies, ambiguities and shortcomings. The memo presents its contents in itemised numerical values with extremely limited clarification and explanation. This has contributed to make MoOSM both confused and confusing.

A sound project feasibility study upon which a joint venture BGC would be established should have five basic properties: assessment of relevant possible OPTIONS; examination of foreseen SCENARIOS; conduct of SENSITIVITY ANALYSIS on the changes in main factors and assumptions with the possible impacts of such changes; coherent, consistent and verifiable BALANCES (balance-sheet) of the calculations and numerical values of the project; and finally technical notes comprising clear and well explained TERMINOLOGY & METHODOLOGY.

Regretfully, as the following assessment thoroughly demonstrates MoOSM fails on all these five fundamental prerequisites. In fact MoOSM pays no attention to the very fundamental and frequently posed questions: WHAT IF? Thus all given values for the reported economic indicators (IRR, NPV, Cash flows, price subsidy, taxes, capex, opex, profits, and net revenues for BGC, SGC and Iraq) could vary dramatically.

Hence, MoOSM makes it extremely difficult, if not impossible, for the decision makers to give solid and well-informed opinion on prospect of BGC- the joint venture in question.

MoOSM focuses mainly on the “direct financial” aspects, and with the identified flaws and shortcomings the presentation by the Ministry appears incomplete improper and misleading (by intention or omission).

The price mechanism in the economic model of the deal is structurally biased in favour of S&M. As oil price increases so does S&M’s profits, but this means higher local market subsidies by SGC that, theoretically, could reduce SGC profits from BGC to zero or even incur losses. Hence, maintaining price subsidy could be financially unsustainable while removing such subsidy could have detrimental ramifications, as they could be economically impossible, socially unacceptable and politically undesirable. Therefore, something seriously wrong with the adopted price formula and thus has to be replaced.

The legal aspects of the deal are alarmingly missing, and whether the proposed joint venture is in conformity with the principle of the best interest for the Iraqi people as enshrined in the Constitution. Not even a single word was mentioned in MoOSM on these fundamental matters though many even from within the council of ministers raised significant questions of legal nature.

It is also opportune to mention that MoOSM did not address properly and comprehensively all concerns and views raised by many Iraqi experts, including myself, on this gas deal since the Head of Agreement-HoA was, in un-transparent way, signed and became effective on 22 September 2008!

Considering the above it is recommended that the Ministry of Oil:

- 1- Provide the full text of the Economic Model and all related data, information and calculations. This would allow conducting proper and deeper analysis of BGC and assess its feasibility.
- 2- Resubmit its MoOSM after seriously taken into consideration the contents of this opinion and others, as the case may be, with added emphasis on the legal aspects of the deal.

Finally, there is no credible evidence to confirm or deny that the same text of MoOSM has been submitted also to the Cabinet to solicit its approval for the BGC contract. If it is different, the question then is why, but if it is the same then the Cabinet has to be extremely careful and should not grant its approval of the deal until the ministry of oil reconsider and resubmit its MoOSM providing sufficient, accurate and convincing information and arguments to support the project. The same applies to OGNRC of the Iraqi Federal Parliament.

Part Two

This part deals with the ten items mentioned in MoOSM as reported therein.

First: Capital shares. The BGC capital is divided at 51% for South Gas Company-SGC and 49% for Shell and Mitsubishi (S&M).

For the sake of clarity and accuracy the relative shares of Shell (44%) and Mitsubishi (5%) should be given separately and not in aggregate.

Second: Production Capacity. MoOSM gives 2000 million standard cubic feet per day- scfd as the production capacity of BGC.

What exactly this figure means: A maximum, an initial or an average? Each of these has different implications. Moreover, information from the MoO gives a range of “2 to 2.5 million cubic meter daily” while others considers this as “target capacity” for BGC.

In addition to the expected increase in the associated gas from the three oilfields covered by this deal when and if they reach their contracted plateau targets, the provision for additional production from new oil reserves in the same oilfields would produce more associated gas. On the other hand IOCs developing the three concerned oilfields are entitled to use as much associated gas as they need for gas injection, power generation and any other purpose as outlined in the related service contracts. This implies that only “residual/ surplus” associated gas would be made available for BGC.

Obviously, there appears to be some ambiguity about what this production capacity really means and how realistic its suggested scale. MoOSM provides no information on how and why this specific scale of production capacity was arrived at, and whether this is an “optimal” size for the joint venture. Also no indication was given to the expected utilisation rate of this reported capacity.

Economically, production capacity is very important factor that has bearings on Capex, Opex, revenues and eventually on the profitability indicators of the project. Needless to say that such ambiguity surrounding the scale of the reported production capacity would logically leads to more uncertainty regarding the economic feasibility of the project.

Third: Costs. MoOSM suggests \$17.2 billion as total cost divided between \$12.8 billion for rehabilitation and construction of gas facilities and \$4.4 billion for the LNG unit.

There are many questions, which MoOSM does not address, are presented and discussed as follows:

1. The SGC facilities were estimated to worth \$1524 million.
But this **SGC assets evaluation** suffers from many problems: what was covered by the evaluation, and whether it covers the vast land and buildings or confined to equipment and machinery?
Was the evaluation verified by independent panel of (or including) Iraqi experts who had experience in the field?
Since BGC is a Joint Venture Company, it would be established pursuant to Iraqi Private Company Law No 21 of 1997. The Law stipulates, regarding assets evaluation to be made by a Committee, agreed upon by the Iraqi Company Registrar, composed of experts in Law, Accountancy and the related working field. No confirmation is provided that Iraqi Company Registrar was involved in the asset evaluation. Also nothing indicates that the said evaluation by a not named “specialized international company” was done in conformity with the requirements of the said Law.
Finally, MoOSM asserts that the S&M will “match this [\$1524 million] amount” to fund their share for the first three years of the project. But is this matching amount included in “funding” requirements, as shall be discussed later.
2. The earlier estimation of investment requirements was \$8 billion, which is increased now to \$17.2 billion. What were the factors behind the 115% escalation in investment requirements before even the work on this project has began? Incidentally, media sources reports an amount of \$12 billion based on statement by ministry officials!!
3. The annual distribution of capital investment over the lifespan of the project was not provided. What was provided covers, ambiguously, the first three years only. If S&M contributes by its 49% share, the investment requirements for the first three years would be \$2.888 billion composed of \$1524 million from SGC and \$1364 million

from S&M (but the figures do not add up). The ministry did not provide the annual spreading of the remaining of investment requirements, totalling \$14.312 billion, on the remaining years.

4. During the **construction phase** (not specified time-wise in MoOSM) SGC will fund \$3.712 billion from the general budget. With this amount fully paid SGC had actually paid a total of \$5.236 billion. No payment would be needed after this amount, as SGC funds its remaining investment requirements from the generated revenues of the BGC. If what the MoOSM asserts is correct regarding SGC funding then the same could also apply to S&M, and in this case the S&M investment commitment would amount to \$5.031 billion. This practically means the BGC would start generating revenues when its invested capital reaches \$10.267 billion, and the generated revenues would be sufficient to finance the balance of the remaining capital requirements of \$6.933 billion. This is very important matter that has significant implications for the computation of the IRR, as shall be discussed later on (but again the figures do not add up)!.
5. The investment requirements of \$4.4 billion are for the **LNG plant**. All available information indicates that LNG would be for export through special tankers. But there are assurances that BGC would serve the domestic market, and only the surplus if any would be exported as LNG.

However, there remain many relevant questions and remarks: why the option of exporting dry gas by pipeline was not considered, though available information indicates to possible gas pipeline network from the southern part of the country in the near future?

Is this LNG plant an integral part of the project or as an option? If it is essential part of the project then how feasible is it considering the high uncertainty of having surplus gas that could be earmarked for export? If it is an option, then how it impacts the economics of the project if that option is not taken? In either case, when is it the time to make decisions regarding having this LNG plan or not?

Finally, the cost of this LNG plant constitutes 25.6% of the total initial investment requirements of the joint venture. What happens if the residual gas for export becomes much less to insure economic utilization of the LNG plant capacity?

Fourth: Funding. The funding of the BGC according to MoOSM is structured as follows: SGC (\$3.712 billion), S&M (\$6.982 billion) and loan from S&M, optional, (\$1.0 billion).

Since no explanation was given on the above, we pose the following remarks:

- 1- It appears the term “funding” refers to future contributions. However, SGC has already contributed by \$1.524 billion for its exiting assets as discussed above. But it is not clear whether the S&M (\$6.982 billion) covers the cost of the “Quick Win Assets”, which might have been purchased pursuant to article 9 of HoA dated 22 September 2008. Also it is not clear whether the \$6.982 billion cover the “match this amount” referred to in item Third above.
- 2- The said funding assumes the full realisation of revenues (in magnitude and timing) as envisaged by MoOSM, as discussed above. This type of deterministic approach is hardly practical and realistic especially under the Iraqi conditions, thus increasing the uncertainty factor for the project and impacts its feasibility prospect. What are the contingency options if the envisaged revenues did not materials in time or in volume? MoOSM does not consider such an eventuality!
- 3- The loan is optional, but it is not clear optional for whom: the SGC or S&M? Nevertheless, no information was given on the terms and conditions of such

loan: interest rates, maturity, instalments, guarantees, loan-governing framework etc. In case it took place, would this mean SGC funding requirements be reduced from \$3.712 billion to \$2.712 billion. But again MoOSM does not provide any clue on the merits or demerits of having such a loan, and calculate its impact on the expected revenues of SGC.

Fifth: Prices. MoOSM provides sets of variables and values on the prices that are used to calculate the economics of the project. These are discussed below.

- 1- The Brent price of \$75/b was taken as the **reference price** to calculate the prices of the dry gas. The data on Brent price has been over \$75/b since November 2009, and so far moving upwards. The average during 2011 so far has been well over \$100/b. Though oil prices fluctuate and sometimes with marked volatility, most forecasts indicate an upward trend in the long run. Therefore we believe adopting one price of \$75/b and maintain it over the 25 years of the project is rather very questionable. Variations of oil prices over and under the adopted threshold have direct implications on all other economic variables such as revenues, profits, IRR and subsidy allocations. Hence, it is more appropriate to use different prices assumption and assess their impacts on the economics of the project.
- 2- The **price of the “raw gas”** was set at “10% of total revenues of the project, increasing with the increase in the said revenues.” This formulation is rather ambiguous:
First, does the 10% of total revenues pre or post corporate income tax?
Second, since the price is a percentage of total revenues, it would obviously increase in absolute term as total revenues increase though it remains constant at 10%.
Third, MoOSM does not say what happens to the price if total revenues decline. In other words there is no guarantee on a minimum price of the raw gas.
Fourth, also no reference was made to the cost that would be paid by SOC to the contractors pursuant to the service contracts of the related three oilfields: Rumaila, WQ1 and Zubair.
Finally, since the price of raw gas constitutes one of Iraq’s revenue sources from this project, the MoOSM formulation casts serious uncertainty about the cash flow generated from the price of raw gas.
- 3- The **formula** that links the prices of dry gas to Brent price through fuel oil price might very well change in the future due to the increasing volumes in international trade of natural gas. The change in the formula might involve the factors and or percentages that are included therein. Any changes in the used formula or replacing it by another formula could undoubtedly give different results than those perceived by MoOSM. But again MoOSM does not address such possibilities.
- 4- The level of **subsidies** is very high indeed. At Brent price of \$75/b the subsidy would be \$2.18/MMBTU, representing more than double the price of MMBTU in the local market. Needless to say, as the oil price goes over the threshold of \$75/b the percentage and the value of subsidy would increase proportionately. While price increases imply subsidy financial burdens for Iraq, it means more profit for S&M. Moreover, this pricing mechanism for dry gas would eradicate the comparative advantages, which the Iraqi economy should benefit from its associated gas. Finally, the level of such subsidies could impact the efforts of Iraq in joining the world trade organisation-WTO.
- 5- The high level of subsidy is in fact a result of the adopted pricing formula that is geared to the international fuel oil prices. The price mechanism in the economic model of the deal is structurally biased in favour of S&M. As oil price increases so does

S&M's profits, but this means higher local market subsidies by SGC that, theoretically, could reduce SGC profits from BGC to zero or even incur losses. Hence, maintaining price subsidy could be financially unsustainable while removing such subsidy could have detrimental ramifications, as they could be economically impossible, socially unacceptable and politically undesirable. Moreover, this price arrangement could produce two-tier price system for local dry gas market causing further negative consequences due to market imperfections. Therefore, something seriously wrong with the adopted price formula and thus has to be replaced.

To avoid such high subsidies the price of “dry gas” from BGC to SGC should be geared to the cost of “raw gas” delivered by the contractors to SOC under the concluded Service Contracts for the oilfields of Rumaila, WQ1 and Zubair.

Sixth: Project Economic Indicators

MoOSM provides a table comprising five indicators (IRR, Real NPV, Nominal Net Cash Flow, net income from Raw Gas, and net income from Taxes) with relative values for BGC, S&M, SGC and the Ministry of Finance-MoF. These are discussed below.

- 1- Internal Rate of Return-**IRR**. Though IRR is an important indicator that is widely used for feasibility studies especially for private investment, it is less valid for state owned companies such as SGC. In this particular project the proper indicator should be the “opportunity cost” measured in terms of “borrowing cost equivalent” of the S&M investment contribution in compares with S&M’ “net profit” during the project life. However, since this is a joint venture with very close shareholding arrangement, the IRR could be acceptable yardstick if SGC has other investment options that compete for the earmarked investment requirements for this joint venture. Nevertheless, the calculated IRR of 24% for SGC could be deceptive (by intention of omission) as this rate was based on the “funding requirement” from SGC only, estimated at \$3.712 billion, without taking into consideration the assets value of \$1.524 billion. If this latter amount is incorporated and we apply proportionality rule, the IRR for SGC would be reduced from 24% to roughly 17%. Moreover, it is not stated whether the “re-invested revenues” beyond the amount mentioned under funding requirement have been incorporated or not in the calculation of the IRR.

Therefore, there is substantive doubt regarding the reported 24% IRR for SGC. Unless the annual cashflow of cost and revenues are fully provided it is difficult or indeed impossible to verify let alone accept such reported IRR. The same applies to the IRR for S&M and BGC.

- 2- Net Present Value-**NPV**. MoOSM presents “Real” NPV and “Nominal” net cash flow for BGC, S&M and SGC. There are serious terminology and methodology problems related to such presentations. First, nothing was mentioned at what “discount rate” these NPVs were calculated. Second, the terms “Real” and “Nominal” were not explained but most likely they were used in a confused way. The word “real” meant to be the discounted net cash flow, while the word “nominal” meant undiscounted net cash flow. Finally, we assume the “salvage book value” at the end of the project should be zero due to the usual depreciation and amortisation practices in calculating the NPV. Therefore, **it is very questionable to include an amount of \$2689 million as compensation for S&M “at the end of the project”. It is rather surprising to see S&M recovering over 38.5% of its “funded” contribution at the end of the project in addition to all realised profits!**

- 3- MoOSM gives a total of \$17.704 billion as “net income from raw gas”. But the table does not provide any data on the quantities and prices of the raw gas.
- 4- Also MoOSM provides a total of \$21.234 billion as “net income from taxes”. The same remarks mentioned in previous item apply here. Moreover, the rate of corporate income tax is not mentioned, and whether S&M pays the 35% as taxes, pursuant to Law 19 of 2010, or lower than that and why.

Seventh: Price Subsidy

MoOSM calculates total subsidies at \$27.498 billion during the life of the project. But the used method has serious flaws: while the international “reference” prices increase, the sales in the domestic market assumed to remain fixed at “current prices”. It is unreasonable to assume local gas prices remain unchanged for more than 20 years.

As mentioned above if the international “reference” price increases beyond the threshold \$75/b, then the magnitude of price subsidy increases proportionately. Thus, since international oil prices tend to increase in the long term, this bounds to lead into much higher price subsidy for local consumption. Also there is a typing error of (+) while it should be (-). Finally, it is not stated whether the total subsidy are discounted or not, though it appears as undiscounted total.

Considering the above it is safe to suggest that MoOSM estimation of price subsidy is simplistic, inaccurate and could be misleading.

Eighth: SGC’ Net Position

MoOSM estimates net financial position for SGC at \$36.555 billion (comprising \$18.851 billion from its share in net cash flow of BGC and \$17.704 billion from the sale of raw gas to BGC). This amount would be reduced to only \$9.057 billion if SGC assumes the full price subsidy, as discussed in item Seventh above.

A major flaw in MoOSM estimation it assumes a **zero cost for raw gas**. This is surely not the case. As mentioned above South Oil Company-SOC is obliged, under the service contracts, to pay the contactors for the redundant raw gas produced (as associated gas) from the related three oilfields: Rumaila, WQ1 and Zubair. The cost paid by SOC should be the bottom-line for raw gas cost for SGC and thus should be taken into consideration in the cash flow calculation. The failure to do so means SOC and SGC would practically subsidise S&M revenues and profits, and surely this contravenes the best interests of the Iraqi people as enshrined in the constitution.

Therefore, the ministry of oil has to reconsider this matter and estimate the cost of raw gas to SGC, which has to be incorporated in the calculations of the cash flows of the joint venture-BGC.

Ninth: Net Position for Iraq

The net direct financial position for Iraq was estimated by MoOSM at \$31.138 billion, comprising of \$9.057 billion net from SGC, \$21.234 billion taxes and 847 million marketing fees for SOMO.

The same flaws identified and discussed above are valid and relevant here as well. Therefore, the net position for Iraq has to be revised and re-estimated properly by the MoO.

Tenth: Diagram presentations.

MoOSM provides two diagrams but unfortunately they make the issues even more confusing, since the percentages mentioned in them produce different numerical values for the same items. A simple crosschecking using the data in MoOSM would expose the inconsistency and the inaccuracy of the presented information.

For example, using the tax figure mentioned in item Sixth and tax share in the second diagram would give gross revenues of **\$141 billion** for the duration of the project. But if the figure of investment cost mentioned in item Third and the Capex share in the second diagram would give gross revenues of **\$50.6 billion**. Also using the cost of raw gas mentioned in item Sixth and its share in the second diagram would give gross revenues of **\$126.5 billion**. Which of the above three different estimation of gross revenues is the correct one.

Obviously, there is something seriously wrong and inconsistency with the information provided by MoOSM, and this casts formidable doubts on the accuracy and validity of the presentation by the ministry.

Part Three

In addition to what has been discussed in part two above few remarks on MoOSM are in order:

- The **Economic Model**. The MoOSM refers to the economic model, which all the provided data were based on the inputs and outputs of the model. To assess the economic feasibility of BGC joint venture at least the text of the economic model and all related data, information, calculations should be made available for proper and deeper analysis.

- The way this project was presented is very **deterministic with no options, no scenarios and no sensitivity analysis**, which usually catered for in sound feasibility studies of projects. Thus, this type of exactness is hardly practical or realistic for such a costly project that is controversial and surrounded with high degree of uncertainty, as highlighted above.
Changes in the variables or assumptions, which the economics of the project was based upon could produce drastic results on the cash flows, the NPVs, the IRR and any other indicators.
Also this way of project presentation limits the freedom of the decision makers to the minimum in assessing all aspects of the project.

- The MoOSM focuses mainly on the **direct financial aspects** of the project. Nothing was mentioned on the contribution or impacts of this project to the economy through any backwards or forwards linkages, and other indirect consequences.
Also nothing was mentioned regarding, for example, employment and job creation, the local contents and human resource. The impacts of this joint venture on SGC itself were not addressed as well, and it was not stated whether BGC would weaken or strengthen SGC as specialised gas company. In short, the wider developmental aspects of this joint venture were missing in this MoOSM.

- The project was **presented in a “vacuum”** on its own separated from other gas projects in the southern part of the country and the existing or future gas utilisation opportunities, especially those related to the second bid rounds contracts where the IOCs are contractually obliged to utilise the associated gas fully.

- MoOSM information does not provide or permits to produce coherent **balance-sheet** that would allow verification through cross-checking these data. More often than not the provided data do not add up correctly.

- The **legal aspects** of the deal are alarmingly missing. Not even a single word was mentioned in MoOSM though many significant questions of legal nature were raised, since September 2008, by many even from within the council of ministers itself.

- Between January and September 2008 the Ministry of Oil and Shell conducted negotiation behind closed doors that lead to the signing on 22 September 2008 of the **Heads of Agreements-HoA**, which became effective on that same day. Many Iraqi petroleum professional and experts, including myself, had written extensively on HoA, highlighting its pros and cons but mostly disapproving of the agreement and criticising the un-transparent and non-competitive way by which HoA was concluded.

Regretfully, it appears that MoOSM had failed to address sufficiently these concerns and did not submit concrete verifiable evidence to insure the best interests for the Iraqi people, as enshrined in the constitution.

- Finally, there is no credible evidence to confirm or deny that the same text of MoOSM has been submitted also to the Cabinet to solicit approval for the BGC contract.

If it is different, the question then is why, but if it is the same then the Cabinet has to be extremely careful and should not grant its approval of the deal until the Ministry of Oil reconsider and resubmit its MoOSM by providing sufficient, accurate and convincing information and arguments to support the project. The same applies to OGNRC of the Iraqi Federal Parliament.

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