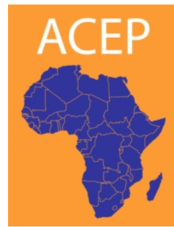

Africa Centre for Energy Policy

ANALYSIS OF THE PROPOSAL TO MAKE GHANA NATIONAL GAS COMPANY (GNGC) THE NATIONAL GAS AGGREGATOR

21st May 2020

ACEP has sighted a letter dated May 11, 2020 from the Presidency, endorsing and approving a proposal by the Ghana National Gas Company (GNGC) to assign the role of gas aggregator to the company, with further instructions for the expeditious implementation of the proposal by the Minister of Energy. The original proposal is contained in another letter dated May 5, 2020 to the Minister of Energy with the following in copy; Minister of Finance, the Executive Secretary to the President, Board Chair of GNGC, CEO of Ghana National Petroleum Corporation (GNPC), Director General of State Interest and Governance Authority (SIGA), the Deputy Ministers and Chief Director of the Ministry of Energy.

Under the current arrangement, GNPC occupies the strategic responsibility of gas aggregator with a function to pool gas resources from all upstream sources and sell to bulk consumers. GNGC is primarily responsible for processing of gas and the sale of natural gas liquids. There has also been the policy flexibility for the GNGC to sell gas to non-power and industrial consumers. Under the proposed arrangement, GNPC will cease to perform the responsibility of gas aggregator to allow GNGC to integrate the mid-stream gas operations (Aggregation, Processing and Transmission).

In 2015, government approved the takeover of GNGC by GNPC as a subsidiary for the latter. A key consideration for this consolidation was to make it possible to have a more integrated management and financing of projects in the oil and gas sector. This was particularly necessary to provide the needed financial securities for the development of the Offshore Cape Three Points (OCTP) project. ACEP's position on this arrangement was that GNPC had the capacity to manage gas projects and had the financial muscle through its share of petroleum revenues to undertake new gas projects, for the purpose of expanding gas processing and transmission facilities. It is still the position of ACEP that if this had been followed, it could have given GNPC a sharper focus on the oil and gas industry. It was evident at the time that GNGC could not raise financing to undertake the critical expansion of their processing facility, and also provide financial guarantee for the upstream development as the aggregator. These fundamentals are still true today.

Being a gas aggregator comes at a significant risk imposed by the industry dynamics such as being witnessed with Covid-19 and the usual volatilities. When GNPC securitized the investment of the OCTP project, it was done with the fact that GNPC was the most capable state entity within the value chain to provide securities for the project. GNPC was in such a better position with cash reserves, was lending to government and could negotiate a loan at an interest rate of 4.43 percent from Deutsche Bank. Because of the industry exposures

shortly after it negotiated the loan, GNPC's risk exposure increased and therefore could not access the loan. The result was that the projected counterpart investments from GNPC in the OCTP could not be done. Consequently, the OCTP partners invested on behalf of GNPC and recovered the debt by encumbering almost two years oil lifting of its participating interest in the OCTP project. If GNGC had been the company exposed to such risks, it would likely be nonexistent today as its assets would have been unable to offset the debts. This also means that OCTP gas which today is the fuel supply backbone of the power sector would not have materialized with GNGC as the aggregator.

Throughout the proposal, GNGC has ignored their lack of capacity to assume and manage the obligations that come with being a gas aggregator. GNGC has proposed a novation of relevant contractual arrangements with both upstream and downstream partners from GNPC to it. The proposed novation of contractual obligations within the sector comes with risks and this requires that the company that wants to assume the obligations show how they will manage the risks.

The designation of a national aggregator is a policy decision within the control of government which can be made for good or bad reasons. However, GNGC's proposal for relevant gas contracts to be novated from GNPC to GNGC will not be a unilateral decision. The OCTP partners agreed with government to make GNPC the gas aggregator as a condition for developing the project because of GNPC's financial position. Any decision to novate the existing gas agreement has to be agreed to by the upstream investors. In the light of the foregoing, it is not difficult to predict on the basis of GNGC's financial position that no Exploration and Production (E&P) company will novate their Gas Sales Agreement to GNGC.

Gas Sector Key Issues

The decision of the presidency was based on a document submitted by GNGC which makes a case for adjusting the institutional framework in the gas sector. In that document, GNGC highlights the key issues in the sector. In ACEP's assessment, none of the key issues raised is a function of GNGC being the aggregator. ACEP analyses the issues in the table below:

GNGC's Issues/Recommendations	ACEP's Comments
How we pay for the real cost of ENI gas; GNPC allows \$6.14/MMBtu, BUT real cost varies with flow from \$11.6-5.80/MMBtu for 100-200 MMscfd. Average is about \$40M/month. GNGC's Recommendations: • *Bring on more of Jubilee/TEN gas, starting at 130 MMscfd and up to 240 MMscfd with a second processing plant.* • *Ensure that payments match invoiced amount.*	This is an issue that ought to be resolved by GNPC and efforts have been made since 2017 to address the issue with the gas price. Part of the arrangement to make gas cheaper has been the commitment of GNPC to waive its participating interest. If there are any inconsistencies with the pricing, it is for GNPC and PURC to resolve and has nothing to do with GNGC. If GNGC assumes the role of the aggregator, GNPC will have no incentive to waive their interest to keep the OCTP gas price low. This keeps the gas price high with implication for power consumers and industry and defeats GNGC's proposal for a lower gas price for non-power consumers. Within the current context, the urgency for government is to offtake more gas which has already been paid for under the OCTP contract which the country risks losing

• *Ensure payment guarantees are in place for all supply agreements.* • *Seek to renegotiate ENI gas price and terms. (Use Condensates, Take-or-Pay Reciprocity)*	after 5 years. Additionally, more gas from OCTP beyond the Take or Pay volume also dilute the high gas price which is an immediate low-cost option for reducing the gas price. For GNGC to achieve their aim of processing more gas from Jubilee/TEN fields, there must be deliberate efforts towards growing the gas market, which entail the expansion of their processing capacity. In their proposal, GNGC has not shown any approach to raising financing to build a second processing plant. This is what GNGC must focus on.
How we pay for the capacity reserved on WAPCo's pipeline (between Takoradi and Tema) for reverse flow. Average is about $4M/month. GNGC's Recommendations: • *Limit WAGP East Flow (from Nigeria) to 30 MMscfd* • *Limit WAGP West Flow (Domestic) to 20 MMscfd for 10 years; in support of proposed GNGC onshore pipeline*	The reserve price for West Africa Gas Pipeline (WAGP) was negotiated and agreed to allow the reverse flow of gas from the West through WAGP pipeline. Therefore, it is the responsibility of GNPC to recover the cost through the gas price as a transmission cost. The capacity reserve cost will be paid regardless of who is the aggregator. GNGC seem to have forgotten that GNPC made significant investment in the WAGP reverse flow project which includes the expansion of GNGC's own Regulating and Metering Station near Takoradi. The WAGP simply cannot be abandoned. Further, limiting the flows in the WAGP is likely to push the transportation tariff on WAGP upwards, since the operators require certain amount of flows to sustain their operations. Again, the proposal to limit the throughput to 30Mmscfd and 20Mmscfd is dangerously risky for gas demand for power generation in Tema. This commits the responsibility on N-Gas and WAGP to 50Mmscfd volume which is far below the gas demand for the East. In addition, the N-Gas contract for WAGP flows is a Take-or-Pay contract, which is not being enforced due to force majeure which may be lifted soon. Any amendment to the WAGP contract will need the consent of the regulator, West Africa Gas Pipeline Authority (WAGPA), and the other three countries involved.
How we provide security for loans/financing for New processing and pipeline facilities GNGC's Recommendations: • *Secure "credible" upstream Gas Purchase Agreements (GPAs).* • *Secure "credible" downstream Gas Sales Agreements (GSAs).*	One of the key reasons why GNPC was made to take over GNGC as a subsidiary in 2015 was to provide the needed financial muscle for the expansion of infrastructure. Since that process was sabotaged by politics and power play, GNGC on its own has struggled to raise financing for expansion work which is critical for the uptake of the available volumes from Jubilee and TEN. It is not clear what GNGC mean by "secure credible upstream Gas Purchase Agreements (GPAs)". The existing GPAs are between the credible parties. The problem is that the liquidity challenges in the power

	sector has affected the performance of the GPAs. Further, government has securitized the supply of fuel to most of the IPPs and has to pay for the gas either by itself or by improving the efficiency of the power sector. Integrating the midstream does not provide a fix to this problem.
How we get cash flow for Maintenance of Existing GNGC facilities. GNGC's Recommendations: • *Ensure that payments match invoiced amount.* • *Ensure payment guarantees are in place for all supply agreements.* • *Expand non-power uses of gas*	Cash flow for the maintenance of GNGC's existing facilities is a direct function of management efficiency, the right tariffs and the frequency of payment. The tariffs and the frequency of payments can be addressed by fixing the power sector liquidity challenges, which is independent of proposed integration of the midstream. Again, expanding non power use of gas is an economic function that starts from the well-head price of gas or subsidy intervention from government which is not a prerogative of an aggregator.
How we make up for special low tariffs (about 50% reduction) for Fertilizer, Bauxite Processing (GIADEC/VALCO), Ceramics, etc ($3.15 instead of $6.08] GNGC's Recommendations: • *Bring on more of Jubilee/TEN gas starting at 130 MMscfd and up to 240 MMscfd. This will mean installing a second gas processing plant (Train 2).* • *Enforce Market segmentation and price discrimination, using Jubilee/TEN gas*	This must be informed by the economics of the project and how much subsidies government can provide to increase demand for gas. ACEP further estimates that a 50 percent reduction of gas for fertilizer production will still not be enough incentive for fertilizer plants to be competitive (economies of scale and price) with imports particularly from Nigeria. It must be clear to GNGC that Jubilee gas will not be free post-foundation. Again, the expansion of the Gas Processing Plant (GPP) is six years behind schedule, largely due to liquidity challenges. GNGC does not show pathways on how they are fixing the financing problem from their operational analysis. Price discrimination is also already in force. To deepen that, there are a blend of options; including taking more gas from OCTP which is readily available, and investment by GNGC to take more gas from the Jubilee and TEN fields which is a medium-term option.

"Consistency with World Industry Models"

GNGC in their document has provided examples of some integrated companies as best practice models to assume that their proposed integration model is a world industry model. They however concede that in big markets like the OECD, the functional model is a full disintegration of the value chain; where functions of processing, transmission and distribution are performed by independent companies. Analysis of various contexts show significant distinctiveness that makes it difficult for anybody to conclude that there is an industry model that ought to be imported into Ghana. In the analysis below, ACEP shows how different the following companies in the comparator countries selected by GNGC are from their proposal.

a. **National Gas Company (NGC) – Trinidad and Tobago**

NGC's core activities are the aggregation, purchase, sale, transmission and distribution of natural gas. The company does not operate as a gas processor even though it owns shares in a gas processing company (Phoenix Park Gas Processors Ltd (PPGPL)). PPGPL has a processing capacity of about 1.95 billion standard cubic feet per day, a profitable company which has about 13 times the processing capacity of GNGC. GNGC is comparing itself to a company whose core mandate is different from it as a processor of gas. Again, the integrated model proposed by GNGC is different from what happens in Trinidad and Tobago.

b. **SONAGAS – Equatorial Guinea**

SONAGAS forms joint ventures with several other companies to undertake LNG development and gas processing in the country. The company participates in the entire gas value chain as minority shareholders. The context defines how SONAGAS operates; it is a relatively small market (with a national population of about 1.3 million) which allows for the integration of the power and gas value chain. Marathon Oil and Noble E.G are key companies which lead projects that SONAGAS participates in as a minority shareholder. These consortia process gas and use much of the processed gas for Methane and electricity production. The situation in Ghana is different; the ownership of the consuming market is not the same as that of Equatorial Guinea. This informed the original plan of separating aggregation, processing and transmission of natural gas in Ghana to ensure fair access to the market.

c. Nigeria Gas Company (NGC, Nigeria) and Petronas Gas Berhad (PGB, Malaysia)

The National Gas Company of Nigeria is a fully integrated midstream company operating as a model equivalent to the proposal by GNGC. However, the company is a subsidiary of the Nigerian National Petroleum Corporation (NNPC). This model harnesses the upstream commitment of NNPC as a national oil company. This is a similar model that was proposed and implemented briefly in 2016 which would have allowed synergy between upstream and midstream sectors of a relatively small industry in Ghana with 12 consumers. The same model is operated by PETRONAS Global, through its subsidiary Petronas Gas Berhad in Malaysia.

d. TGN and TGS (Argentina)

These are independent private companies operating two segments of the Argentine market. TGS is a privately-owned natural gas processing and transportation in the south while TGN is responsible for transportation of natural gas in the north and central parts of Argentina. The TGS model is what GNGC operates currently with no restriction on their proposed projects of constructing pipelines to Kumasi and Ivory Coast. The operations of TGS and TGN show that it is possible to have two companies operating within a segment of the value chain as may be defined by the context.

e. Petroleum Authority of Thailand (PTT) – Thailand

PTT is a completely different model which was set up by the government of Thailand to import petroleum for domestic use. The company has over the years evolved into an integrated oil and gas company by using its financial muscle to propel its subsidiaries into petrochemical

business, refinery, and exploration and production business. This is the bottom up integration model; the opposite of which Ghana was experimenting with GNPC.

f. Gazprom

Gazprom operates the top-down integration model, is a global conglomerate and a fully integrated E&P company. The Russian situation cannot be compared to that of Ghana. The country has enough oil and gas resources that allows many independent national oil companies to integrate along the value chain and remain financially sound. This model is an outlier and should not have appeared in GNGC's proposal.

Summary of Ghana's Context

The function of an aggregator in Ghana today is not a luxurious one. There are many commitments that GNPC has made which have been discussed above as having dented the corporation's financial position. GNGC does not have the capacity to assume the liabilities of the commitments that come with the role of an aggregator as shaped by the Ghanaian context. Again, the gas sector issues used by GNGC to make a case for integrating the gas midstream are issues that could be addressed by the stakeholders in the sector without GNGC becoming a gas aggregator.

It must be noted, that Ghana has paid too much price for political experimentation with the gas commercialization efforts. The original plan after oil discovery was for GNPC to lead the gas commercialization efforts to ensure that the processing of Jubilee gas coincided with first oil. After the change of government in 2009, that role was taken away from GNPC to allow the establishment of an independent national gas company. This led to significant delays in the setup of the company, sourcing of financing and the construction of the plant. As a result, processing of jubilee gas could not be possible until November 2014. This delay was harshly paid for by the Ghanaian people when gas supply from Nigeria was disrupted in 2012. If GNPC had progressed as planned to bring on the processing plant in 2011, domestic gas would have been available to substitute the shortfall from Nigeria. This could have provided relief for the hydro sources of power which was overstretched as a measure to reduce the impact of load shedding until they could no longer operate at their optimal capacity. The consequence of load shedding is documented by ISSER and ACEP to have cost small businesses about $686.4 million annually and about $1 billion losses in revenue to the power sector agencies in 2014-2015 period.

The Gas Master Plan recommended that GNGC becomes a subsidiary of GNPC, with GNPC performing the role of a gas aggregator. According to the master plan "*The decision to appoint GNPC as the aggregator of gas and making GNGC a **fully owned subsidiary** of GNPC will improve coordination in the sector and facilitate infrastructure investment and financing.*" This in addition to the security requirement by the OCTP partners informed government's decision in 2015 to make GNGC a subsidiary of GNPC which was subsequently implemented in July 2016. Unfortunately, the merger only lasted for five months and abandoned after a change of government. The proposal to make GNGC the gas aggregator is therefore not in line with the country's Gas Master Plan which is a product of institutional and stakeholder consultation with support from USAID. This should not be altered at the wish of one party in

the value chain. Abandoning the Gas Master Plan deflates the confidence of Development Partners in financing future policy development.

Transferring the role of an aggregator to GNGC also introduces significant risks for upstream investment and the power sector. The weak balance sheet of GNGC makes it unattractive to the investor community which has implication for exploration and production. The coincidence of the policy change with the challenging global oil industry on the back of COVID-19 further exposes the country to high investment risks.

Recommendation

Make GNGC a subsidiary of GNPC as a response to the implementation of the Gas Master Plan: The optimal option for achieving results in the oil and gas sector for Ghana is to pursue the top-down integration model with GNPC at the top as an anchor. This allows GNPC to support subsidiaries along the value chain with their balance sheet. This also requires that GNPC is refocused to invest its money in the core oil and gas business as has been done by other integrated national oil companies.