ACEP's COMMENTS ON THE

POWER PURCHASE AGREEMENT BETWEEN EARLY POWER LIMITED AND THE ELECTRICITY COMPANY OF GHANA

Introduction

The project was originally designed as an emergency project but has since been changed to a regular long-term IPP. Also, the original project consisted of a 20 year Power Purchase Agreement (PPA) with the Electricity Company of Ghana (ECG) covering 344MW plant with 142.5MW being a simple cycle plant. The new project consist of a 400MW plant, involving a conversion of the 142.5MW simple cycle to combined cycle that will add 50MW steam turbine. After 25 years of the operation of the facility, ownership will be transferred to the Government of Ghana or its nominated agency at a price of US$1.

Parliament is considering the request by Government to approve a Put-Call Option Agreement (PCOA), intended to provide a risk guarantee against default termination of the contract.

Ghana needs to find critical solution to perennial power challenges, the longest of which was suffered between 2012 and 2015. The problem with generation shortage is multifaceted but plants addition is also a crucial part of the puzzle. Therefore, government and the utility agencies have been making the effort to augment generation. While it is important to add on generation, planning and value for money is equally important. This analysis is therefore intended to contribute to public and parliamentary debate on the project.

Positive Impact of the Project

The project will have a positive impact for Ghana in both the short and long term. Some of the positive aspects of the project are explained as follows:

i. Short-term Supply

The project aims to rapidly deploy an initial power of 144MW in six months from contract signing. This will help meet near term shortages. Also it offers ECG certain flexibility - its first stage includes 5 gas turbine units of 28.5 MW each that can operate independently and which can be started, stopped and then restarted all within one hour. This will allow ECG to more efficiently dispatch to match actual power demand.

ii. No Financial Burden

The Project provides a flexible arrangement such that ECG does not have to escrow funds to raise a Letter of Credit for default bill payments as required under most recent PPAs. The project is further sponsoring the financial guarantee against debt repayment.

The PCOA, which is being used for this project, reduces government guarantee against ECG's default payments. It replaces the Government Consent and Support Agreement (GCSA) which was provided by government to guarantee against payment default and exchange market disruptions. In the PCOA, the default factors – payment and exchange market disruption are provided as default termination events among others. This implies that in the event of these occurring, government is not obligated to make payments on behalf of ECG. Rather, either party can exercise their right to buy the facility or the shares through a Call Option (Government) or a Put Option (Investors).

Also, under the PCOA, the government's maximum liabilities are capped at the debt outstanding, which is projected at 70% of the overall project cost – a maximum, of $667m.

iii. Fuel Supply Infrastructure and Security

The project investors are responsible for fuel supply. The project therefore provides for the construction of an LPG import and storage infrastructure, which increases Ghana's fuel diversity and security. A 12-inch discharge pipeline at Tema Oil Refinery (TOR) will be built as part of the project and ownership of the discharge line is expected to be transferred at no charge to TOR after completion of construction. This upgrade from the existing 6-inch discharge line will allow Ghana to import three times more tons of LPG per year.

Fuel insecurity has become one of the challenges facing the energy sector in Ghana. Therefore, providing diversity is an important development. This means the project will not be affected by disruptions to Jubilee or WAGP. In addition, the Project is structured so that it can switch to natural gas when available and this could have positive implication for the energy charge and would result in a reduction in tariff. This is however not the case in reality. Clause 3.1.f (i) of the PPA, provides that:

"The Seller intends to use LPG as the primary fuel for the facility but may use any other compatible fuel on the basis that the Buyer is only obliged to pay the Total Electricity Charge based on the use of LPG"

Thus, where the investors use cheaper natural gas, ECG would be required to pay LPG based charges. This must be reviewed to bring the advantages of fuel diversity to power consumers.

iv. Capacity Charges

Unlike many PPAs, capacity charge under this project is not tied to the contracted capacity. It will be based on the capacity ratio computed from available capacity relative to contracted capacity. The PPA further provides in clause 3.3b that:

"The seller shall not declare capacity for the facility if the facility does not have fuel but could have delivered energy at the delivery point if it had fuel"

This means that since the investors have responsibility for fuel supply, ECG will not be required to pay capacity charge if there is no fuel attributed to the failure of the investors. On the other hand, where the investor fails to make capacity available, it amounts to a default termination event, and the government can exercise its right to a Call Option under the PCOA. This is significant provision as it departs from all other PPAs signed by ECG under which capacity charge has to be paid whether the plants produce power or not.

Some Concerns

The advantages the project brings may be tempered by some concerns, which may affect the level of benefits Ghana could gain from the project.

i. Cost of the Project

Government has reported that the cost of the project is $953.4 million increasing from $647.7 million as a result of the upgrading of the simple cycle plant to a combined cycle plant and the addition of LPG infrastructure. We are unable to estimate the additional EPC cost of the revised project design as government has not provided a break down of the original project cost of $647.7 million. However, estimating non-EPC cost at 30% (industry standards) of the original project cost, the EPC cost could have been put at $453 million. Therefore, with a revised EPC cost of $636.8 million, the additional EPC cost of the steam installation could be put in a range of $150 - $190 million, which is on the high side for an additional 50MW. The cost of TICO expansion, estimated at $330 million for 110MW steam installation including offshore work for Sea Water cooling system, could be an important guide considering that the two designs by GE and Siemens are the leading designs in the world, although they cannot be a one-to-one comparison due to design differences.

It is our understanding that the $953.4 million is the maximum negotiable cost of the project and the actual EPC and financing costs will be what is agreed at financial close.

We expect that government and ECG will take advantage of this to review some of the costs. The financing cost of $178.7 million is particularly interesting but predictable considering the negotiated project debt-equity ratio of 70:30, the longer construction period as a result of moving from an emergency solution to a regular long-term IPP solution, and the provision that allows ECG to waive its requirement to post a letter of credit equal to 2 months of total revenue under the PPA. Also, ECG's liquidity challenges and poor macroeconomic conditions in Ghana could be responsible for this. However, given that the government's maximum liabilities are capped under the PCOA to be the debt outstanding, a 70% debt financing exposes the government to higher costs if it exercises its right to buy the facility in the event of the investors' default leading to termination of the PPA.

ii. Electricity Tariffs

The tariffs approved for the project consist of capacity charge and energy charge and any adjustments arising from increased or decreased costs. The total capacity charge consists of capital recovery charge of 4.07 cents/kwh and a power fixed O&M charge of 0.509 cents/kwh. This becomes 4.579 cents/kwh for total capacity charge. We think that the capital recovery charge could be lower, however marginal. The entire original cost for the project at $647.7 million with a capital recovery charge of 4.23 cents/kwh had a recovery period of 20 years. The revised project cost of $953.4 million due to the upgrading, made up of EPC costs of $636.8 million, and non-EPC costs of $317m, gives the impression that the bulk of the costs are not related to the EPC component but to the financing cost, development and other auxiliary costs. As there has not been a significant change in the EPC costs and the recovery period has increased to 25 years, we expect the capital recovery charge to be lower than the revised charge of 4.07 cents/kwh. This should have a declining effect on the tariffs, which is currently estimated at 12.5 cents/kwh.

However, we also recognize that the tariffs as estimated at 12.5 cents/kwh is much lower than was approved by PURC in the original phase of the project (an average 16.3 cents/kwh) in spite of the increase in the cost of the project. This might be due to the fact that the output of the project increased as a result of the upgrading works, the efficiency of the plant will increase as a result of the steam component; and making it possible for more power generated using the same amount of fuel, and the extension in the capital recovery period accounting for marginal reduction in the capacity charge.

iii. Generation Plan

Generation planning comes to our attention. ECG has signed many PPAs most of which are not translating to energy delivery. The World Bank has advised the government to review some of the PPAs to prioritize them as a way to reducing ECG's liability and over-exposure. Signing another PPA, which does not bring energy on-stream, will be worrying.

Therefore, whether this project is necessary or not should be matched against ECG's capacity to off-take the produced power in the medium term if Akosombo and other existing plants increasingly become available as hydrologic conditions improve. At the moment, there are shortfalls in power production caused by low water levels, gas supply interruption from Nigeria, and more recent issues with gas supply from Jubilee. However, the project remains an important one if government and VRA are unable to fix the aged and failing power infrastructure and the water levels in the hydro power dams do no improve.

Conclusions

Generally, the project holds many advantages for Ghana and for the energy sector in particular if only it is implemented within the time frame negotiated in the PPA. The challenges identified remain important and must be addressed by government even after Parliamentary approval of the PCOA.

We understand that this project will not be the most expensive project ever constructed in Ghana. The Cenpower plant is being constructed at the cost of $900million for 350MW, the Ameri plant is costing us about $600m in five years and Karpower is also costing about $1billion in ten years. Whilst it is not possible to have a standardized cost for building power plants due to contextual cost elements and design differences, it becomes worrying when the variation is as high as 20-30%. We advise the government that it can breakaway from this high cost regime if it limits direct negotiation and start auctioning generation opportunities.

Also, the increasing need for investors to demand Power Purchase Agreements (PPAs) with demanding financial and payment security is not only an indication of a discredited off-taker, but also an insurance against unplanned addition of generation which exposes power investment to too much risk. This has informed why most PPAs are take or pay contracts and must be backed by GCSA. The departure in risk allocation between the government and investors under the new PCOA may provide an enduring security regime for procuring generation capacity firmly to address the medium to long-term need for power in Ghana.