

IN THE FOURTH SESSION OF THE FIFTH PARLIAMENT OF THE FOURTH REPUBLIC OF GHANA

**REPORT OF THE JOINT COMMITTEE ON FINANCE & MINES AND ENERGY ON THE  
TAKORADI 2 ABOADZE PLANT EXPANSION (FROM A SIMPLE CYCLE TO A COMBINED  
CYCLE) PROJECT**

**1.0 INTRODUCTION**

The Takoradi 2 Aboadze Plant Expansion (from a simple cycle to a combined cycle) Project was presented to the House on Tuesday 12<sup>th</sup> June, 2012 and referred to a Joint Committee on Finance and Mines and Energy for consideration and report in accordance with Orders 171 and 188 of the Standing Orders of the House.

Pursuant to the referral, the Committee met with the Hon. Deputy Ministers for Finance & Economic Planning and Energy, Mr. Seth Terkper and Alhaji Inusah A. B. Fuseini respectively and considered the referral. Present at the meeting were officials from Volta River Authority (VRA), Takoradi International Company (TICO), Ministry of Finance and Economic Planning (MOFEP) and Ministry of Energy. The Committee is grateful to the Deputy Ministers and the officials for their input at the Committee.

**2.0 REFERENCES**

In considering the Agreement, the Committee made reference to and was guided by the following documents:

1. The 1992 Constitution of the Republic of Ghana; and
2. The Standing Orders of Parliament.

### **3.0 BACKGROUND**

The Takoradi Thermal Power Plant was conceived as a 660MW power plant consisting of two identical 330 MW blocks – the T1 and T2 plants. The T1 Plant was completed in 1999. However, due to funding constraints, it was agreed that the second 330 MW block (T2 Plant) be executed as a private /public joint venture between the VRA and a private power operator.

In 1998, VRA and CMS Generation Company formed a joint venture vehicle called Takoradi International Company (TICO) to develop and construct the T2 Plant. CMS Generation Company was at the time a wholly owned affiliate of CMS Energy Corporation (a US power developer). The parties agreed to develop the plant in three stages; stages 1 and 2 comprising the installation of two 110 MW units, and stage 3 being the expansion of the T2 Plant to a 330 MW combined cycle plant.

Stages 1 and 2, comprising a two- 110 MW simple cycle GE Frame 9E combustion turbines were commissioned in 2000, with a total capacity of 220 MW. However, all attempts to expand the T2 Plant to the proposed 330 MW capacity failed.

The Abu Dhabi National Energy Company PJSC (TAQA) acquired its existing interest in TICO when it completed the acquisition of CMS International's power portfolio in May 2007. In May 2010, TAQA entered into a memorandum of understanding with the Government of Ghana regarding the expansion of the T2 Plant to the proposed 330 MW. The four parties (TAQA, VRA, TICO AND GoG) had since been working towards the completion of the project.

Accordingly, the following project Agreements in respect of the T2 expansion were presented to the House for consideration and approval:

- i. The Restated and Amended Power Purchase Agreement;

- ii. The Restated and Amended Government Consent and Support Agreement (GCSA); and
- iii. The GCSA Direct (step-in) Agreement

#### **4.0 THE AGREEMENTS**

#### **4.1 THE RESTATED AND AMENDED POWER PURCHASE AGREEMENT**

##### **4.1.1. Obligations**

According to the Power Purchase Agreement, TICO is responsible for;

- a. the design, engineering, supply construction and Commissioning of the T2 plant;
- b. ~~arranging the funding of the T2 plant including construction funding for T2 Stage two (b);~~
- c. operation and maintain the T2 Plant in accordance with prudent industry practice and applicable Ghanaian legal requirements; and;
- d. Dully and properly throughout the Terms
  - i. apply on timely basis for the companies consent;
  - ii. Once Companies consent is issued, comply with its and all applicable Ghanaian legal requirements; and
  - iii. Once Companies consent is issued, apply for each renewal on timely basis.

##### **Off taker's Responsibilities**

The Offtaker (VRA) is also responsible for:

- a. assisting the Company to obtain, maintain and renew (as appropriate) for the duration of the Term (as appropriate) all Company Consents; and
- b. duly and properly throughout the term:
  - (i) apply on a timely basis for the Offtaker Consents;

- (ii) once an Offtaker Consent is issued, comply with its provisions and all applicable Ghanaian Legal Requirements to preserve and maintain such consent;
- (iii) once an Offtaker Consent is issued, apply on a timely basis for each and every renewal as required by such Offtaker Consent and Ghanaian Legal Requirements.

#### **Supply of Fuel**

The Power Purchase Agreement further imposes the responsibility for the supply of fuel to run the T2 plant on the Offtaker as follows:

**“(a)** Subject to compliance by the Company with its obligations under the Fuel Supply Procedures, the Offtaker shall make available at the relevant Fuel Receiving Point all Specification LCO, Raw DFO, and Specification Gas necessary for the delivery of Fuel to the Company in the amounts nominated by the Company to operate the T2 Plant in accordance with this agreement.

**(b)** Subject to compliance by the Company with its obligations with respect to treatment and storage of LCO for the T2 Plant under the Services Agreement, the Offtaker shall make available to the Company at the relevant Fuel Measuring Point all Delivery LCO and all Delivery DFO required by the Company to operate the T2 Plant in accordance with this Agreement. Such obligation of the Offtaker shall not be limited or affected by any Service Provider Deemed Availability Event or the performance or failure to perform by the Service Provider of any of its obligations under any provisions of the Services Agreement.

**(c)** As between the parties the payment of all costs in connection with the purchase, insurance and delilivry of fuel by the Offtaker to the Applicable Fuel Receiving Points shall be the sole responsibility of the Offtaker and, except as provided in Clause 7.14,

the company shall not be obligated to pay the Offtaker for fuel delivered to or used by the T2 Plant”

#### **4.1.2 Tariff Structure**

The Power Purchase Agreement provides for the following tariff payment scheme:

- i. Capacity payment for the purchase of available capacity;
- ii. Operations and Maintenance (O & M) payment for Actual Operating Hours;
- iii. Supplemental Charges such as liquidated damages, bonuses, property taxes, actual variable cost of any fuel treatment or handling, etc for payment of certain other amounts due; and
- iv. Supplemental Tariff Payments for payment of certain amounts due.

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#### **4.2 THE RESTATED AND AMENDED GOVERNMENT CONSENT AND SUPPORT AGREEMENT (GCSA)**

The Restated and Amended Government Consent and Government Agreement (GCSA) seeks to encourage investments by private international sponsors in the T2 Plant and to facilitate the limited recourse financing of T2 Stage two (b). Further, the parties to the Second Restated Power Purchase Agreement, (Government of the Republic of Ghana and Takoradi International Company) desire to define further their respective obligations with respect to T2 Stage One, T2 Stage Two (a) and T2 Stage Two (b).

The amended and restated GCSA is also requesting for Government support in obtaining exemptions in relation to the expansion project.

#### **4.2.1 CURRENCY TRANSFERABILITY AND CONVERTIBILITY**

The GCSA also seeks to give investors and lenders an assurance of flexibility to repatriate profit from their investment without any hindrance. To this end, GoG under GCSA Agreement agrees and consents among others that:

- i. Dollars and other foreign currencies provided by the shareholders or lenders to the Company;
  - ii. Liquidated damages and any other amounts paid by VRA, GoG, or the contractors to or on behalf of the Company;
  - iii. Proceeds of insurance or reinsurance paid by insurers to or on behalf of the company
  - iv. Dollars or other foreign currencies provided from any other lawful source;
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in connection with the T2 expansion Phase may be deposited directly, retained in, and paid out of bank accounts outside Ghana.

GoG also consents and authorizes the Company, the lenders and Contractors to establish, maintain and retain earnings in Dollar and other foreign currency accounts outside Ghana into which funds can be received and withdrawals made. The Company is also permitted to convert all earnings in Cedis into Dollars for the purposes of implementing the T2 expansion Phase.

#### **4.2.2. GUARANTEE OF PAYMENTS OBLIGATION**

GoG by the Restated and Amended Government Consent and Government Agreement (GCSA), guarantees to pay to TICO all sum of monies which the Offtaker (VRA) and Service Providers shall at any time be liable to pay TICO and which shall not have been paid in accordance with the terms of the Restated Power Purchase Agreement.

### **4.3 GCSA DIRECT (STEP-IN) AGREEMENT**

To partly finance the construction and operation of T2 Stage Two (b), TICO and the Lenders entered into the Common Terms Agreement and various facility Agreement. To this end, the Lenders have jointly appointed Ecobank Ghana Limited as their Onshore Security Agent in respect of enforcement of their rights under the Agreement.

GoG does not assume any direct liability for the project, the GCSA Direct (Step-in) Agreement only allows Government to step-in and assume the obligations of VRA, Ghana Grid Company and Service Providers should they fail to deliver on their obligations.

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### **5.0. ~~OBSERVATIONS ON TAKORADI 2 ABOADZE PLANT EXPANSION PROJECT FROM A SIMPLE CYCLE TO A COMBINED CYCLE.~~**

The Committee having carefully deliberated on the documents made the following observations:

#### **a. PROJECT FINANCING AND VALUE OF THE PROJECT**

The Committee was informed that the expansion project on the T2 Plant was being financed through a mix of equity and shareholder loan of \$109.9m representing 25% of project cost and commercial debt of \$ 329.6m representing 75% of project cost to be provided by a number of Development Finance Institutions led by Financierings-Maatschappij Voor Ontwikkelingslanden N.V. (FMO) and the International Finance Corporation (IFC) at competitive market terms. The actual value of the entire project is US\$ 439.50, which includes the value of the existing T2 Plant which is estimated at US\$ 80m.

**b. OBLIGATIONS OF GOVERNMENT TOWARDS THE EXPANSION PROJECT**

The Committee was also informed that the Government of the Republic of Ghana had no financial obligations towards the expansion of the Takoradi T2 Plant. Government's obligation towards the expansion project is to provide Takoradi International Company (TICO) with political risk guarantees, guarantees in respect of performance and payment obligations of VRA and GRIDCo as expressed in the amended and restated Government Consent and Support Agreement. Further the amended and restated Government Consent and Support Agreement is to give TICO's foreign investor (TAQA) and lenders sufficient comfort that their investments are protected.

**c. FUEL SAVINGS AS A RESULT OF THE EXPANSION PROJECT**

The Committee was further informed that, by converting the T2 Plant from a simple cycle to combine cycle additional electricity would be generated with no additional fuel required. As result of this conversion the efficiency of the plant would also be increased from 31% to about 48 % as well as reduce the generating cost from US\$0.096 to US\$ 0.081 per kWh at a fuel price of US\$ 6.5/MMBtu. The Committee learnt that the estimated fuel savings as a result of this expansion is about US\$150m per annum.

**d. SHARE HOLDING OF VRA IN TICO**

The Committee again was informed that VRA and CMS Generation Company of the USA in 1998 formed a joint venture vehicle called Takoradi International Company to develop and construct the T2 Plant. CMS Generation Company of the USA had a shareholding of 90% and VRA had 10%, with the right to acquire up to 49% shares. However VRA never exercised this right to acquire more shares in TICO. In 2007 the Abu Dhabi National Energy Company PJSC (TAQA) acquired the 90% shares of CMS Generation Company of the USA and became the major



shareholder. Officials of VRA informed the Committee that under the current dispensation VRA still has the right to acquire the 49% shares in TICO.

However the officials of VRA informed the Committee that under the proposed expansion of the T2 Plant, VRA has negotiated its shareholding in TICO from the current 10% to 15% at no cost if the Agreement is ratified by Parliament.

**e. SALE OF CARBON CREDITS FROM THE EXPANSION PROJECT**

The Committee noted that with the conversion of the T2 Plant from a simple cycle to the proposed combine cycle the plant is expected to save up to 350,000 tons of Carbon dioxide each year and an additional 110,000 tons of Carbon dioxide also expected to be saved through the installation of the Once-Through-Sea-Water-Cooling system which would enhance the plant's efficiency and generating capacity. Consequently, the country would be entitled to 75% of the net proceeds from the sale of carbon credits which is estimated between US\$ 3.5m- US\$ 5.0m at current prevailing prices.

**f. ONCE-THROUGH-SEA-WATER-COOLING SYSTEM**

The Committee was informed that the existing cooling towers for the T2 plant over the years had significantly added to the overhead cost of TICO through frequent maintenance of the plant as sea water drawn into the system is lost through evaporation and deposited on the plant leading to massive corrosion of the T1 and T2 Plants.

To forestall this problem, the T2 expansion project will introduce a new technology for cooling known as Once-Through-Sea-Water-Cooling system to benefit the T1 and T2 Plants which will increase the plants' output by 20MW as well as prevent corrosion which will ultimately reduce maintenance cost of the Plant.

**g. VALUATION OF THE EXISTING T 2 POWER PLANT**

The Committee was informed that the value of the existing T2 Plant was US\$80M. According to officials of TICO the equity valuation was based on a historic net book value, which included the value of construction work in progress (i.e. Cost of spare rotor and payments made to General Electric in relation to the gas conversion contract), spare parts inventory as well as a Minimum cash balance. This valuation has been a conservative cash position assumed by TICO since its inception. The breakdown is as follows:

i.	Net book value of fixed assets as at 31 <sup>st</sup> December 2010 – US \$ 60.8m	
ii.	New Rotor Work –in-progress	- US \$ 3.6m
iii.	O&M Building and warehouse	- US \$ 0.9m
iv.	Spare parts inventory	- US\$ 6.9m
v.	Gas conversion contract	- US\$ 6.5m
vi.	Minimum working cash balance	- US\$ 1.3m
	<b>Total</b>	<b>- US\$ 80.0m</b>

**h. ONSHORE SECURITY AGENT**

The Committee again was informed that FMO and the other Finance parties to the project had appointed ECOBANK GHANA LIMITED as onshore Security Agent to enforce their rights under the Government Consent Support Agreement Acknowledgement and Consent Agreement. Under the Agreement the Government of Ghana undertakes to Lenders that it shall make senior debt amount payable under the GCSA directly to them without set-off or counterclaim into the offshore dollar account.

**i. TAXES AND CUSTOMM DUTY EXEMPTIONS AND INCENTIVES**

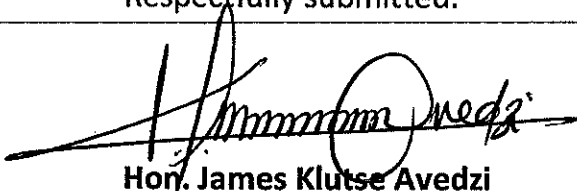
In accordance with Article 6.7 of the Amended and Restated Government Consent Support Agreement, the project is required to be waived of any duties,

taxes of any kind, present or future. The Committee recommends to the Minister for Finance and Economic Planning to endeavour to bring a formal request for the waiver of relevant taxes to House for consideration and approval.

## 6.0 CONCLUSION

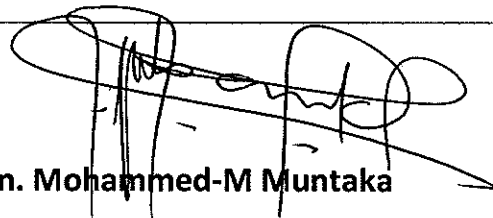
The Committee has carefully scrutinised the Agreements and recommends to the House to approve by resolution, the Restated and Amended Power Purchase Agreement, Restated and Amended Government Consent and Support Agreement (GCSA) and GCSA Direct (step-in) Agreement as well as the necessary consent and exemptions in relation to the T2 expansion project in accordance with Article 181 (5) of the 1992 Constitution.

Respectfully submitted.



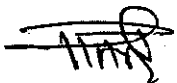
**Hon. James Klutse Avedzi**

**Chairman, Finance Committee**



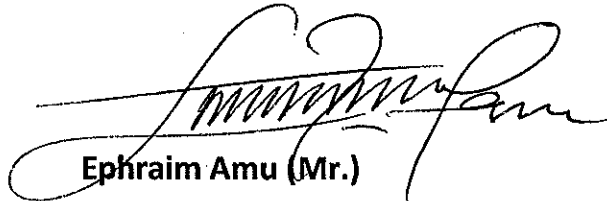
**Hon. Mohammed-M Muntaka**

**for Chairman, Committee on Mines & Energy**



**Ms Peace A. Fiawoyife**

**Clerk, Finance Committee**



**Ephraim Amu (Mr.)**

**Asst. Clerk, Committee on Mines and Energy**