

No. 6462

**INTERNATIONAL BANK FOR
RECONSTRUCTION AND DEVELOPMENT
and
GHANA**

Guarantee Agreement—*Volta Project* (with related letter, annexed Loan Regulations No. 4 and Loan Agreement between the Bank and Volta River Authority). Signed at Washington, on 8 February 1962

Official text: English.

Registered by the International Bank for Reconstruction and Development on 27 December 1962.

**BANQUE INTERNATIONALE POUR
LA RECONSTRUCTION ET LE DÉVELOPPEMENT
et
GHANA**

Contrat de garantie—*Projet de la Volta* (avec lettre connexe et, en annexe, le Règlement n° 4 sur les emprunts et le Contrat d'emprunt entre la Banque et la Volta River Authority). Signé à Washington, le 8 février 1962

Texte officiel anglais.

Enregistré par la Banque internationale pour la reconstruction et le développement le 27 décembre 1962.

No. 6462. GUARANTEE AGREEMENT¹ (*VOLTA PROJECT*)
BETWEEN THE REPUBLIC OF GHANA AND THE
INTERNATIONAL BANK FOR RECONSTRUCTION
AND DEVELOPMENT. SIGNED AT WASHINGTON, ON
8 FEBRUARY 1962

AGREEMENT, dated February 8, 1962 between REPUBLIC OF GHANA (hereinafter called the Guarantor) and INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT (hereinafter called the Bank).

WHEREAS by an agreement of even date herewith between the Bank and Volta River Authority (hereinafter called the Borrower), which agreement and the schedules therein referred to are hereinafter called the Loan Agreement,² the Bank has agreed to make to the Borrower a loan in various currencies equivalent to forty-seven million dollars (\$47,000,000) on the terms and conditions set forth in the Loan Agreement, but only on condition that the Guarantor agree to guarantee the obligations of the Borrower in respect of such loan as hereinafter provided ; and

WHEREAS the Guarantor, in consideration of the Bank's entering into the Loan Agreement with the Borrower, has agreed so to guarantee such obligations of the Borrower ;

NOW THEREFORE the parties hereto hereby agree as follows :

Article I

Section 1.01. The parties to this Guarantee Agreement accept all the provisions of Loan Regulations No. 4 of the Bank dated February 15, 1961,³ subject, however, to the modifications thereof set forth in Schedule 3⁴ to the Loan Agreement (said Loan Regulations No. 4 as so modified being hereinafter called the Loan Regulations), with the same force and effect as if they were fully set forth herein. The terms defined in Section 1.02 of the Loan Agreement shall have the same meaning herein as if such Section were fully set forth herein.

¹ Came into force on 8 February 1962, upon notification by the Bank to the Government of Ghana.

² See p. 220 of this volume.

³ See p. 218 of this volume.

See p. 242 of this volume.

Article II

Section 2.01. Without limitation or restriction upon any of the other covenants on its part in this Agreement contained, the Guarantor hereby unconditionally guarantees, as primary obligor and not as surety merely, the due and punctual payment of the principal of, and the interest and other charges on, the Loan, the principal of and interest on the Bonds, the premium, if any, on the prepayment of the Loan or the redemption of the Bonds, and the punctual performance of all the covenants and agreements of the Borrower, all as set forth in the Loan Agreement and in the Bonds.

Section 2.02. Without limitation or restriction upon the provisions of Section 2.01 of this Agreement, the Guarantor specifically undertakes, whenever there is reasonable cause to believe that the funds available to the Borrower (including the funds specified in Section 23 (1) and (2) of the Volta River Development Act, 1961) will be inadequate to meet the estimated expenditures required for carrying out the Project, promptly to make arrangements, satisfactory to the Bank, to provide the Borrower or cause the Borrower to be provided with such funds as and when needed to meet such expenditures.

Article III

Section 3.01. It is the mutual intention of the Guarantor and the Bank that no other external debt shall enjoy any priority over the Loan by way of a lien on governmental assets. To that end, the Guarantor undertakes that, except as the Bank shall otherwise agree, if any lien shall be created on any assets of the Guarantor as security for any external debt, such lien will *ipso facto* equally and ratably secure the payment of the principal of, and interest and other charges on, the Loan and the Bonds, and that in the creation of any such lien express provision will be made to that effect; provided, however, that the foregoing provisions of this Section shall not apply to: (i) any lien created on property, at the time of purchase thereof, solely as security for the payment of the purchase price of such property; (ii) any lien on commercial goods to secure a debt maturing not more than one year after the date on which it is originally incurred and to be paid out of the proceeds of sale of such commercial goods; or (iii) any lien arising in the ordinary course of banking transactions and securing a debt maturing not more than one year after its date.

The term "assets of the Guarantor" as used in this Section includes assets of the Guarantor or of any of its political subdivisions or of any agency of the Guarantor or of any such political subdivision, including, without limitation, the Bank of Ghana and the Ghana Commercial Bank.

Section 3.02 (a) The Guarantor and the Bank shall cooperate fully to assure that the purposes of the Loan will be accomplished. To that end, each of them shall

furnish to the other all such information as it shall reasonably request with regard to the general status of the Loan. On the part of the Guarantor, such information shall include information with respect to financial and economic conditions in the territories of the Guarantor and the international balance of payments position of the Guarantor.

(b) The Guarantor and the Bank shall from time to time exchange views through their representatives with regard to matters relating to the purposes of the Loan and the maintenance of the service thereof. The Guarantor shall promptly inform the Bank of any condition which interferes with, or threatens to interfere with, the accomplishment of the purposes of the Loan or the maintenance of the service thereof.

(c) The Guarantor shall afford all reasonable opportunity for accredited representatives of the Bank to visit any part of the territories of the Guarantor for purposes related to the Loan.

Section 3.03. The principal of, and interest and other charges on, the Loan and the Bonds shall be paid without deduction for, and free from, any taxes imposed under the laws of the Guarantor or laws in effect in its territories; provided, however, that the provisions of this Section shall not apply to taxation of payments under any Bond to a holder thereof other than the Bank when such Bond is beneficially owned by an individual or corporate resident of the Guarantor.

Section 3.04. This Guarantee Agreement, the Loan Agreement and the Bonds shall be free from any taxes that shall be imposed under the laws of the Guarantor or laws in effect in its territories on or in connection with the execution, issue, delivery or registration thereof.

Section 3.05. The principal of, and interest and other charges on, the Loan and the Bonds shall be paid free from all restrictions imposed under the laws of the Guarantor or laws in effect in its territories.

Section 3.06. (a) Except as the Bank shall otherwise agree, the Guarantor shall, to the extent that it has an interest therein and is obligated or entitled to do so, take all action necessary to maintain in full force and effect, and secure the prompt and diligent performance by the parties thereto of, the Scheduled Documents.

(b) The Guarantor and the Bank shall exchange views as to any arbitration or any proceeding before the Referee or Engineer Referee contemplated or undertaken pursuant to any of the Scheduled Documents in which the Guarantor has an interest. The Guarantor shall promptly advise the Bank of any such arbitration or other proceeding contemplated or undertaken and shall give the Bank such information as the Bank shall reasonably request to enable the Bank if it so desires to make its views thereon known to the Guarantor and in any such arbitration or other proceeding.

Section 3.07. The Guarantor shall take or cause to be taken all such action as shall be required to reorganize, and shall reorganize, the Electricity Division of the Ministry of Works and Housing as a statutory corporation operating efficiently as a public utility on a sound commercial basis. Such action shall be taken, after consultation with the Bank, as promptly as practicable, and, in any event, no later than the date when the Authority shall have started to sell power.

Section 3.08. The Guarantor, except as the Bank shall otherwise agree : (a) shall not undertake or assist in the financing of an additional major power project in its territories unless (i) such project would not prevent or materially interfere with the successful construction and operation of the Project and (ii) there is adequate economic justification for such project, taking into account not only the said project standing by itself but also the effect of such project on the obligations assumed by the Guarantor and the Borrower in connection with the Project ; and (b) shall consult with the Bank before it undertakes or assists in the financing of a major power project in its territories.

Section 3.09. The Guarantor shall not, without the prior approval of the Bank, (a) agree to any amendment of the agreement between the Guarantor and the Export-Import Bank of Washington relating to the guarantee under certain circumstances of the loan to be made pursuant to the Exim-Valco Loan Agreement, or (b) take or permit any action to be taken which shall lead to the occurrence of an Event of Guarantee under such agreement between the Guarantor and the Export-Import Bank of Washington.

Article IV

Section 4.01. The Guarantor shall endorse, in accordance with the provisions of the Loan Regulations, its guarantee on the Bonds to be executed and delivered by the Borrower. The Minister of Finance of the Guarantor and such person or persons as he shall designate in writing are designated as the authorized representatives of the Guarantor for the purposes of Section 6.12 (b) of the Loan Regulations.

Article V

Section 5.01. The following addresses are specified for the purposes of Section 8.01 of the Loan Regulations :

For the Guarantor :

Secretary to the Cabinet
Office of the President
Accra, Ghana

Alternative address for cablegrams and radiograms :

Presidential
Accra

For the Bank :

International Bank for Reconstruction and Development
1818 H Street, N.W.
Washington 25, D. C.
United States of America

Alternative address for cablegrams and radiograms :

Intbafrad
Washington, D. C.

Section 5.02. The Minister of Finance of the Guarantor is designated for the purposes of Section 8.03 of the Loan Regulations.

IN WITNESS WHEREOF, the parties hereto, acting through their representatives thereunto duly authorized, have caused this Guarantee Agreement to be signed in their respective names and delivered in the District of Columbia, United States of America, as of the day and year first above written.

Republic of Ghana :
By W. M. Q. HALM
Authorized Representative

International Bank for Reconstruction and Development :

By J. Burke KNAPP
Vice President

RELATED LETTER

PRESIDENT

February 8, 1962

International Bank for Reconstruction
and Development
1818 H Street, N.W.
Washington 25, D. C.

Dear Sirs,

I refer to the Guarantee Agreement¹ (*Volta Project*) between us and the Loan Agreement² between the Bank and the Volta River Authority, both of even date herewith.

¹ See p. 208 of this volume.

² See p. 220 of this volume.

In connection with the furnishing of funds by the Republic of Ghana to the Authority for the Project, this is to confirm to you the following :

1. The Republic of Ghana gives a firm undertaking that Ghana's share of expenditures to be incurred in connection with the Project will be met out of taxation and other internal revenue sources.
2. Under the Volta River Development Act, as amended, payment of Ghana's contribution, not exceeding £G 35 million, is a charge on the Consolidated Fund. Such legislation makes it unnecessary to seek annual parliamentary appropriation for expenditure in connection with the project.
3. The foreign currency component of Ghana's contribution to the Project will be financed out of her current external earnings. To the extent that such earnings are inadequate in any year, Ghana would draw on her overseas reserves.
4. It is the intention of the Government to set aside in a special account in the Bank of Ghana external securities in the present aggregate market value of the equivalent of at least £G 10 million and not exceeding £G 15 million to be drawn upon only as provided for in subparagraph 3 above. Such securities will be released when and to the extent that the estimated foreign currency requirements fall below the market value of such securities.

Please confirm your understanding of the foregoing by signing the form of confirmation on the enclosed copy of this letter.

Very truly yours,

Kwame NKRUMAH
President

Confirmed :

International Bank for
Reconstruction and Development :

Eugene R. BLACK

INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT

LOAN REGULATIONS No. 4, DATED 15 FEBRUARY 1961

REGULATIONS APPLICABLE TO LOANS MADE BY THE BANK TO BORROWERS OTHER THAN
MEMBER GOVERNMENTS

[Not published herein. See *United Nations, Treaty Series, Vol. 400, p. 212.*]

LOAN AGREEMENT (*VOLTA PROJECT*)

AGREEMENT dated February 8, 1962, between INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT (hereinafter called the Bank) and VOLTA RIVER AUTHORITY (hereinafter called the Borrower), a corporation established under the Volta River Development Act, 1961, of the Republic of Ghana, (hereinafter called the Guarantor).

WHEREAS

(A) the Guarantor and the Borrower are engaged in the carrying out of a project for the construction and operation of a dam and hydroelectric generating station in the vicinity of Akosombo on the River Volta in Ghana and of certain power transmission lines and related facilities, all as hereinafter more fully described, and have requested the Bank to assist in the financing of said project ;

(B) arrangements are being made to finance part of the cost of said project by loans being obtained from certain lenders in addition to the Bank ;

(C) Volta Aluminium Company Limited (hereinafter called Valco), a company incorporated under the Companies Ordinance of the Guarantor, proposes to build an aluminium smelter (hereinafter called the Smelter) adjacent to the port of Tema in Ghana, which will use a substantial part of the power to be generated by said project and arrangements regarding the construction of the Smelter, the purchase and sale of such power and certain related matters are being made among the Guarantor, the Borrower, Valco and other parties ;

(D) the Bank, having taken into consideration, among other things, the arrangements in recitals (B) and (C) referred to, has agreed to make a loan to the Borrower on the terms and conditions hereinafter referred to ;

NOW THEREFORE, it is hereby agreed as follows :

Article I

LOAN REGULATIONS ; SPECIAL DEFINITIONS

Section 1.01. The parties to this Loan Agreement accept all the provisions of Loan Regulations No. 4 of the Bank dated February 15, 1961,¹ subject, however, to the modifications thereof set forth in Schedule 3² to this Agreement (said Loan Regulations No. 4 as so modified being hereinafter called the Loan Regulations), with the same force and effect as if they were fully set forth herein.

Section 1.02. Wherever used in this Loan Agreement the following terms have the following meanings :

(a) the term "AID Loan Agreement" means the agreement of even date herewith between the Agency for International Development, an agency of the United States of America, and the Borrower, providing for a loan to the Borrower in an aggregate principal amount not to exceed twenty-seven million dollars ;

¹ See p. 218 of this volume.

² See p. 242 of this volume.

(b) the term "Exim-Authority Loan Agreement" means the agreement of even date herewith between the Export-Import Bank of Washington, an agency of the United States of America, and the Borrower, providing for a loan to the Borrower in an amount of ten million dollars ;

(c) the term "U.K. Loan Agreement" means the agreement of even date herewith between the Board of Trade acting by the Export Credits Guarantee Department of Her Majesty's Government of Great Britain and Northern Ireland and the Borrower, providing for a loan to the Borrower in an amount of five million pounds sterling ;

(d) the term "Master Agreement" means the agreement of even date herewith between the Government of Ghana and Valco, providing, among other things, for the construction of the Smelter, for certain obligations of the Government of Ghana and of Valco in connection therewith and for other related matters ;

(e) the term "Power Contract" means the agreement of even date herewith between the Borrower and Valco, providing for the construction, operation and maintenance of the Volta Development (as therein described or referred to) and the sale of power therefrom to Valco, for certain obligations of the Borrower and Valco in connection therewith and for other related matters ;

(f) the term "Subscription Agreement" means the agreement of even date herewith between Valco and the Owners (namely, Kaiser Aluminium & Chemical Corporation and Reynolds Metals Company), providing for subscriptions to and payment for shares of the capital of Valco by the Owners and for other matters related thereto ;

(g) the term "Long Term Tolling Contracts" means the agreements of even date herewith between Valco and other parties regarding, among other things, the making of prepayments to Valco by such other parties for the construction of the Smelter, the furnishing of alumina to be processed by Valco and the payment of certain tolling, minimum and other charges ;

(h) the term "Exim-Valco Loan Agreement" means the agreement of even date herewith between Valco and the Export-Import Bank of Washington providing for a loan to Valco for the construction of the Smelter ;

(i) the term "Voting Trust Arrangements" means the agreement of even date herewith between Valco, the Owners, the Borrower and the voting trustee thereunder, providing for the establishment of a voting trust, for the deposit by the Owners of their shares of Valco in such trust and for the voting trustee thereunder to take appropriate action to ensure the obligations of Valco under the Scheduled Contracts (as that expression is defined in Article 1 of the Master Agreement) and any agreement or agreements supplementary thereto or contemplated thereby ;

(j) the term "The Valco Current Accounts Trust" means the agreement of even date herewith between Valco, the Borrower and the trustee thereunder, regarding, among other things, the receipt by the trustee thereunder of funds to be paid pursuant to the Subscription Agreement, the Long Term Tolling Contracts and the Exim-Valco Loan Agreement and the disbursements of such funds ;

(k) the term "Scheduled Documents" has the meaning assigned thereto in Article 1 of the Master Agreement ; and

(l) the term "Cut-off Date" means the Cut-off Date as provided for in Article 7 of the Power Contract, as such Cut-off Date may be postponed as provided in said Article 7.

Article II

THE LOAN

Section 2.01. The Bank agrees to lend to the Borrower, on the terms and conditions in this Loan Agreement set forth or referred to, an amount in various currencies equivalent to forty-seven million dollars (\$47,000,000).

Section 2.02. The Bank shall open a Loan Account on its books in the name of the Borrower and shall credit to such Account the amount of the Loan. The amount of the Loan may be withdrawn from the Loan Account as provided in the Loan Agreement, and subject to such other conditions as may be agreed between the Bank and the Borrower ; provided, however, that, except as the Bank may otherwise agree, no amount shall be withdrawn from the Loan Account at any time if the total of (i) the amount of such withdrawal and of prior withdrawals from the Loan Account and (ii) amounts theretofore withdrawn, advanced or specially committed under the AID Loan Agreement, the Exim-Authority Loan Agreement and the U. K. Loan Agreement, shall be greater than the equivalent of 50 % of the aggregate amount which shall theretofore have been expended on the Project.

Section 2.03. The Borrower shall pay to the Bank a commitment charge at the rate of three-fourths of one per cent ($\frac{3}{4}$ of 1 %) per annum on the principal amount of the Loan not so withdrawn from time to time.

Section 2.04. The Borrower shall pay interest at the rate of five and three-fourths per cent ($5\frac{3}{4}$ %) per annum on the principal amount of the Loan so withdrawn and outstanding from time to time.

Section 2.05. Except as the Bank and the Borrower shall otherwise agree, the charge payable for special commitments entered into by the Bank at the request of the Borrower pursuant to Section 4.02 of the Loan Regulations shall be at the rate of one-half of one per cent ($\frac{1}{2}$ of 1 %) per annum on the principal amount of any such special commitments outstanding from time to time.

Section 2.06. Interest and other charges shall be payable semi-annually on February 15 and August 15 in each year.

Section 2.07. The Borrower shall repay the principal of the Loan in accordance with the amortization schedule set forth in Schedule 1¹ to this Agreement.

Article III

USE OF PROCEEDS OF THE LOAN

Section 3.01. The Borrower shall apply the proceeds of the Loan exclusively to financing the cost of goods required to carry out the Project described in Sche-

¹ See p. 238 of this volume.

dule 2¹ to this Agreement. The specific goods to be financed out of the proceeds of the Loan and the methods and procedures for procurement of such goods shall be determined by agreement between the Bank and the Borrower, subject to modification by further agreement between them.

Section 3.02. The Borrower shall cause all goods financed out of the proceeds of the Loan to be imported into the territories of the Guarantor and there to be used exclusively in the carrying out of the Project.

Article IV

BONDS

Section 4.01. The Borrower shall execute and deliver Bonds representing the principal amount of the Loan in the manner and to the extent provided in the Loan Regulations.

Section 4.02. The Chief Executive of the Borrower and such person or persons as he shall appoint in writing are designated as authorized representatives of the Borrower for the purposes of Section 6.12 (a) of the Loan Regulations.

Article V

PARTICULAR COVENANTS

Section 5.01. (a) The Borrower shall carry out the Project with due diligence and efficiency and in conformity with sound engineering, financial and public utility practices and with qualified and experienced management and staff.

(b) Except as the Bank shall otherwise agree, the Borrower shall employ engineering consultants and contractors in the carrying out of the Project. The engineering consultants and the major contractors and suppliers, and the terms and conditions of their contracts, shall be mutually satisfactory to the Bank and the Borrower.

Section 5.02. (a) The Borrower shall furnish to the Bank, promptly upon their preparation, the plans and specifications and the construction and installation schedules for the Project, and any material modifications subsequently made therein, in such detail as the Bank shall from time to time request.

(b) The Borrower shall maintain records adequate to identify the goods financed out of the proceeds of the Loan, to disclose the use thereof in the Project, to record the progress of the Project (including the cost thereof) and to reflect in accordance with consistently maintained sound accounting practices the financial condition and operations of the Borrower.

(c) The Borrower shall enable the Bank's representatives to inspect the goods financed out of the proceeds of the Loan, the sites, works and construction included in the Project

¹ See p. 240 of this volume.

and all other plants, works, properties and equipment of the Borrower and to examine any relevant records and documents.

(d) The Borrower shall furnish to the Bank all such information as the Bank shall reasonably request concerning the expenditure of the proceeds of the Loan, the use of the goods purchased therewith, the progress of the Project, the operations and financial condition of the Borrower, its relations with Valco and the carrying out of the Borrower's rights and obligations under the documents specified in Section 5.09 of this Agreement and any other agreements related thereto.

Section 5.03. (a) The Bank and the Borrower shall co-operate fully to assure that the purposes of the Loan will be accomplished. To that end, each of them shall furnish to the other all such information as it shall reasonably request with regard to the general status of the Loan.

(b) The Bank and the Borrower shall from time to time exchange views through their representatives with regard to matters relating to the purposes of the Loan and the maintenance of the service thereof. The Borrower shall promptly inform the Bank of any condition which interferes with, or threatens to interfere with, the accomplishment of the purposes of the Loan or the maintenance of the service thereof.

(c) The Bank and the Borrower shall from time to time exchange views as to any notices to be given pursuant to Article 7 (A) or 7 (D) of the Power Contract, and the Borrower shall not give any such notice without first consulting the Bank with respect thereto ; provided, however, that it shall not give any notice pursuant to Article 7 (A) (iii) (a) of the Power Contract unless the Bank shall so agree.

(d) The Borrower shall consult with the Bank regarding the naming of a Manager pursuant to the Voting Trust Arrangements, of an Engineer Referee pursuant to the Power Contract and of a Referee pursuant to the Long Term Tolling Contracts.

Section 5.04. The Borrower undertakes that, except as the Bank shall otherwise agree, if any lien shall be created on any assets of the Borrower as security for any debt, such lien will *ipso facto* equally and ratably secure the payment of the principal of, and interest and other charges on, the Loan and the Bonds, and that in the creation of any such lien express provision will be made to that effect ; provided, however, that the foregoing provisions of this Section shall not apply to : (i) any lien created on property, at the time of purchase thereof, solely as security for the payment of the purchase price of such property ; or (ii) any lien arising in the ordinary course of banking transactions and securing a debt maturing not more than one year after its date.

Section 5.05. The Borrower shall pay or cause to be paid all taxes, if any, imposed under the laws of the Guarantor or laws in effect in the territories of the Guarantor on or in connection with the execution, issue, delivery or registration of this Loan Agreement, the Guarantee Agreement¹ or the Bonds, or the payment of principal, interest or other

¹ See p. 208 of this volume.

charges thereunder; provided, however, that the provisions of this Section shall not apply to taxation of payments under any Bond to a holder thereof other than the Bank when such Bond is beneficially owned by an individual or corporate resident of the Guarantor.

Section 5.06. The Borrower shall pay or cause to be paid all taxes, if any, imposed under the laws of the country or countries in whose currency the Loan and the Bonds are payable or laws in effect in the territories of such country or countries on or in connection with the execution, issue, delivery or registration of this Loan Agreement, the Guarantee Agreement or the Bonds.

Section 5.07. Except as the Bank and the Borrower shall otherwise agree :

(a) The Borrower shall insure or cause to be insured with responsible insurers all goods financed with the proceeds of the Loan. Such insurance shall cover such marine, transit and other hazards incident to purchase and importation of the goods into the territories of the Guarantor and to delivery thereof to the site of the Project, and shall be for such amounts and shall be payable in such currencies as shall be consistent with sound commercial practice.

(b) The Borrower shall, in addition to the insurance provided for in subparagraph (a) of this Section, take out or cause to be taken out and maintain or cause to be maintained, with responsible insurers, insurance against such risks and in such amounts as shall be consistent with sound public utility and business practices.

Section 5.08. The Borrower (i) shall operate and maintain its plants, equipment and property, and from time to time make all necessary renewals and repairs thereof, all in accordance with sound engineering standards; (ii) shall, except as the Bank shall otherwise agree, take all steps necessary to maintain and renew all rights, powers, privileges and franchises which are necessary or useful in the conduct of its business; and (iii) shall at all times carry on its operations and maintain its financial position in accordance with sound business and public utility practices, and in that connection shall act in accordance with the requirements of the Volta River Development Act, 1961, including, among other things, such requirements in regard to the fixing of power rates and the maintenance of proper reserves.

Section 5.09. (a) Except as the Bank and the Borrower shall otherwise agree, the Borrower shall, to the extent that it has an interest therein and is obligated or entitled to do so, take all such reasonable action as may be necessary to maintain in full force and effect, and to secure the prompt and diligent performance by the parties thereto of, the Scheduled Documents, the Subscription Agreement, the Long Term Tolling Contracts, The Valco Current Accounts Trust, the Voting Trust Arrangements and the managing agreement relating thereto, the AID Loan Agreement, the Exim-Authority Loan Agreement and the U.K. Loan Agreement.

(b) The Bank and the Borrower shall exchange views as to any arbitration or any proceeding before the Referee or Engineer Referee contemplated or undertaken pursuant

to any of the documents specified in paragraph (a) of this Section. The Borrower shall promptly advise the Bank of any such arbitration or other proceeding contemplated or undertaken and shall give the Bank such information as the Bank shall reasonably request to enable the Bank if it so desires to make its views thereon known to the Borrower and in any such arbitration or other proceeding.

Section 5.10. Except as the Bank and the Borrower shall otherwise agree : (a) the Borrower shall not rescind or terminate the Power Contract and (b) the Borrower shall not enter into an agreement to sell power or energy from the Project so as to effect a reduction of the Contract Rate (as that term is defined in the Power Contract) under Article 25 of the Power Contract.

Section 5.11. Except as the Bank and the Borrower shall otherwise agree, if the Borrower shall repay in advance of maturity any part of its indebtedness under the AID Loan Agreement, the Exim-Authority Loan Agreement or the U. K. Loan Agreement, the Borrower shall simultaneously repay a proportionate amount of the Loan then outstanding. All the provisions of the Loan Regulations relating to repayment in advance of maturity shall be applicable to any repayment by the Borrower in accordance with this Section.

Section 5.12. Except as the Bank and the Borrower shall otherwise agree, the Borrower shall not incur debt unless its net revenues for the fiscal year next preceding such incurrence or for a later twelve-month period ended prior to such incurrence, whichever is the greater, shall be not less than 1.5 times the maximum debt service requirement for any succeeding fiscal year on all debt, including the debt to be incurred. For the purposes of this Section :

(a) the term "debt" shall include the assumption and guarantee of debt and shall mean all indebtedness of the Borrower maturing by its terms more than one year after the date on which it is originally incurred ;

(b) debt shall be deemed to be incurred on the date of execution and delivery of a contract or loan agreement providing for such debt ;

(c) the term "net revenues" shall mean gross revenues from all sources, adjusted to take account of power rates in effect at the time of the incurrence of debt even though they were not in effect during the fiscal year or twelve-month period to which such revenues relate, less all operating and administrative expenses, including provision for taxes, if any, but before provision covering depreciation, interest and other charges on debt ;

(d) the term "debt service requirement" shall mean the aggregate amount of amortization (including sinking fund payments, if any) interest and other charges on debt ; and

(e) debt service payable in a currency other than currency of the Guarantor shall be valued at the rate of exchange at which such other currency is obtainable, on the

date the additional debt is incurred, for the purpose of servicing such debt, or, if such currency is not so obtainable, at the rate of exchange as reasonably determined by the Bank.

Article VI

REMEDIES OF THE BANK

Section 6.01. If any event as specified below shall occur and shall continue for the period, if any, specified below, then at any subsequent time during the continuance thereof, the Bank, at its option, may declare the principal of the Loan and of all the Bonds then outstanding to be due and payable immediately, and upon any such declaration such principal shall become due and payable immediately, anything in this Agreement or in the Bonds to the contrary notwithstanding :

- (i) any event specified in paragraph (a), (b), (e) or (f) of Section 5.02 of the Loan Regulations, for a period of thirty days ; or
- (ii) any event specified in paragraph (j), (k) or (l) of Section 5.02 of the Loan Regulations ; or
- (iii) any event specified in paragraph (c), (m), (n), (o) or (r) of Section 5.02 of the Loan Regulations, for a period of sixty days after notice thereof shall have been given by the Bank to the Borrower.

Article VII

EFFECTIVE DATE ; TERMINATION

Section 7.01. The following events are specified as additional conditions to effectiveness within the meaning of Section 9.01 (c) of the Loan Regulations :

- (a) that all such action, governmental or other, shall have been taken and all such governmental and other consents shall have been obtained as may be required to enable the Borrower to acquire such land, interest in land and properties and such franchises or other rights as are needed for construction of the Project ;
- (b) that the Master Agreement, the Power Contract, the Subscription Agreement, the Long Term Tolling Contracts, the Voting Trust Arrangements and The Valco Current Accounts Trust shall have become effective on terms satisfactory to the Bank ;
- (c) that the terms and conditions of the AID Loan Agreement, the Exim-Authority Loan Agreement and the U. K. Loan Agreement shall be satisfactory to the Bank and that the conditions precedent, if any, to initial disbursement under such Agreements shall have been fulfilled ;
- (d) that the Exim-Valco Loan Agreement has been duly executed and delivered and that its terms and conditions are satisfactory to the Bank.

Section 7.02. The following are specified as additional matters, within the meaning of Section 9.02 (c) of the Loan Regulations, to be included in the opinion or opinions to be furnished to the Bank :

(a) that the Borrower has full power and authority to construct and operate the Project and has all necessary rights and powers in connection therewith, including the matters covered by Section 7.01 (a) of this Agreement ;

(b) that the Master Agreement, the Power Contract, the Subscription Agreement, the Long Term Tolling Contracts, the Voting Trust Arrangements, The Valco Current Accounts Trust and the Exim-Valco Loan Agreement have been duly authorized, ratified or constituted (as the case may be) by, and executed and delivered on behalf of, the several parties thereto and are valid and enforceable in accordance with their respective terms.

Section 7.03. A date 60 days after the date of this Agreement is hereby specified for the purposes of Section 9.04 of the Loan Regulations.

Article VIII

MISCELLANEOUS

Section 8.01. The Bank Loan Closing Date, referred to in Section 5.03 of the Loan Regulations, shall be the Cut-off Date ; provided, however, that with respect to expenditures in connection with the installation of the fifth generating unit and equipment auxiliary thereto the Bank Loan Closing Date shall be the fourth anniversary of the Permanent Delivery Date, as that term is defined in Article 7 of the Power Contract.

Section 8.02. The following addresses are specified for the purposes of Section 8.01 of the Loan Regulations :

For the Borrower :

Volta River Authority
P.O. Box M 77
Accra, Ghana

Alternative address for cablegrams and radiograms :

Volta
Accra

For the Bank :

International Bank for Reconstruction and Development
1818 H Street N.W.
Washington 25, D. C.
United States of America

Alternative address for cablegrams and radiograms :

Intbafrad
Washington, D. C.

IN WITNESS WHEREOF, the parties hereto, acting through their representatives thereunto duly authorized, have caused this Loan Agreement to be signed in their respective names and delivered in the District of Columbia, United States of America, as of the day and year first above written.

International Bank for Reconstruction and Development :

By J. Burke KNAPP
Vice President

Volta River Authority :

By F. J. DOBSON
Authorized Representative

The Common Seal of the Volta River Authority was hereunto affixed pursuant to a resolution of the Authority passed and dated the twentieth day of January one thousand nine hundred sixty-two in the presence of:

(Signed) F. J. DOBSON
Chief Executive

(Signed) H. F. WINFUL
Secretary
[SEAL]

OF VOLTA RIVER AUTHORITY

SCHEDULE 1
AMORTIZATION SCHEDULE

<i>Date Payment Due</i>	<i>Payment of Principal (expressed in dollars)*</i>	<i>Date Payment Due</i>	<i>Payment of Principal (expressed in dollars)*</i>
February 15, 1968 . . .	669,000	February 15, 1978 . . .	1,179,000
August 15, 1968 . . .	688,000	August 15, 1978 . . .	1,213,000
February 15, 1969 . . .	708,000	February 15, 1979 . . .	1,248,000
August 15, 1969 . . .	728,000	August 15, 1979 . . .	1,283,000
February 15, 1970 . . .	749,000	February 15, 1980 . . .	1,320,000
August 15, 1970 . . .	770,000	August 15, 1980 . . .	1,358,000
February 15, 1971 . . .	793,000	February 15, 1981 . . .	1,397,000
August 15, 1971 . . .	816,000	August 15, 1981 . . .	1,438,000
February 15, 1972 . . .	839,000	February 15, 1982 . . .	1,479,000
August 15, 1972 . . .	863,000	August 15, 1982 . . .	1,521,000
February 15, 1973 . . .	888,000	February 15, 1983 . . .	1,565,000
August 15, 1973 . . .	913,000	August 15, 1983 . . .	1,610,000
February 15, 1974 . . .	940,000	February 15, 1984 . . .	1,656,000
August 15, 1974 . . .	967,000	August 15, 1984 . . .	1,704,000
February 15, 1975 . . .	995,000	February 15, 1985 . . .	1,753,000
August 15, 1975 . . .	1,023,000	August 15, 1985 . . .	1,803,000
February 15, 1976 . . .	1,053,000	February 15, 1986 . . .	1,855,000
August 15, 1976 . . .	1,083,000	August 15, 1986 . . .	1,909,000
February 15, 1977 . . .	1,114,000	February 15, 1987 . . .	1,964,000
August 15, 1977 . . .	1,146,000		

* To the extent that any part of the Loan is repayable in a currency other than dollars (see Loan Regulations, Section 3.03), the figures in this column represent dollar equivalents determined as for purposes of withdrawal.

PREMIUMS ON PREPAYMENT AND REDEMPTION

The following percentages are specified as the premiums payable on repayment in advance of maturity of any part of the principal amount of the Loan pursuant to Section 2.05 (b) of the Loan Regulations or on the redemption of any Bond prior to its maturity pursuant to Section 6.16 of the Loan Regulations :

<i>Time of Prepayment or Redemption</i>	<i>Premium</i>
Not more than three years before maturity	$\frac{1}{2}$ of 1 %
More than three years but not more than six years before maturity	1 %
More than six years but not more than eleven years before maturity	1 $\frac{3}{4}$ %
More than eleven years but not more than sixteen years before maturity	2 $\frac{1}{2}$ %
More than sixteen years but not more than twenty-one years before maturity	3 $\frac{1}{2}$ %
More than twenty-one years but not more than twenty-three years before maturity	4 $\frac{3}{4}$ %
More than twenty-three years before maturity	5 $\frac{3}{4}$ %

SCHEDULE 2

DESCRIPTION OF PROJECT

The Project consists of a dam and hydroelectric plant to be constructed at Akosombo, approximately 50 miles upstream from the mouth of the Volta River, and a high voltage transmission system to supply the Smelter and the main towns and villages and mines of southern Ghana.

The main features of the Project are :

- (a) Access roads, construction buildings and housing and related facilities required at Akosombo.
- (b) An earth and rockfill dam rising about 370 feet above foundation level and about 2,100 feet long at its crest impounding a reservoir about 3,275 square miles in area with a length of about 300 miles and a volume of about 120 million acre feet.
- (c) A separate reinforced concrete spillway structure equipped with sector type control gates.
- (d) An earth and rockfill saddle dam, about 1,100 feet long and 120 feet high, to close off a small valley adjacent to the spillway.
- (e) A reinforced concrete intake structure, equipped with trashracks and main and emergency intake gates, to conduct water into steel penstocks supplying turbines in the powerhouse.
- (f) A power station of the semi-outdoor type with administration office facilities and space for an ultimate installation of six generating units.
- (g) The installation of up to five generating units, each with a nominal rating of 128 MW and a maximum continuous rating of 147.2 MW, together with all auxiliary equipment.

- (h) A main substation, adjacent to the power station, to distribute the power station output to a 165 KV transmission system.
- (i) A 165 KV transmission system, about 500 miles in length, comprising two double circuit lines to Tema, spurs to the aluminium smelter substation adjacent to Tema and a transmission ring to supply Accra, Takoradi, Kumasi and other towns and villages and the mines of southern Ghana.
- (j) Substations at various points on the transmission system to step down the main transmission voltage. The substations will be equipped with all necessary transformers, high and low voltage switchgear, control and protection equipment and auxiliary equipment.

It is planned that four generating units will be in operation in 1966 and that the fifth unit will be installed when necessary to meet additional power requirements.

SCHEDULE 3

MODIFICATIONS OF LOAN REGULATIONS No. 4

For the purposes of this Agreement the provisions of Loan Regulations No. 4 of the Bank dated February 15, 1961 shall be deemed to be modified as follows :

(a) By the deletion of paragraph (j) of Section 5.02 thereof and by the addition to said Section 5.02 of the following new paragraphs :

“(j) Any creditor shall, in accordance with the terms of the credit concerned, demand payment from the Borrower of moneys lent to the Borrower prior to the agreed maturity thereof.

“(k) Valco shall have rescinded the Power Contract pursuant to Article 7, paragraph (B) thereof.

“(l) Any Event of Release as determined pursuant to the Subscription Agreement or the Long Term Tolling Contracts shall have occurred, or any other event shall have occurred which, due to the fault of the Borrower or the Guarantor, shall have operated to release any of the parties thereto from the said agreements or from the Voting Trust Arrangements or The Valco Current Accounts Trust or to modify substantially the obligations of the parties thereunder.

“(m) The Volta River Development Act, 1961, of the Guarantor or any provision thereof shall have been amended, suspended, terminated or repealed without the prior approval of the Bank.

“(n) The AID Loan Agreement, the Exim-Authority Loan Agreement, the U. K. Loan Agreement, the Master Agreement, the Power Contract, the Subscription Agreement, the Long Term Tolling Contracts, the Voting Trust Arrangements or the managing agreement relating thereto or The Valco Current Accounts Trust shall have been, in any material respect, amended, terminated, assigned or waived without the agreement of the Bank.

“(o) The Guarantor shall have taken any action which would prevent, or materially interfere with, the performance by the Borrower of its obligations or the assertion of its rights under the AID Loan Agreement, the Exim-Authority Loan Agreement, the U. K. Loan Agreement, the Subscription Agreement, the Long Term Tolling Contracts, the Voting Trust Arrangements or the managing agreement relating thereto or The Valco Current Accounts Trust.

“(p) Any Event of Suspension as defined in the Subscription Agreement or the Long Term Tolling Contracts shall have occurred, or any other event shall have occurred which, due to the fault of the Borrower or of the Guarantor, shall have operated to suspend the rights or obligations of any of the parties thereto under any of the said agreements or under the Voting Trust Arrangements or under The Valco Current Accounts Trust.

“(q) Any event shall have occurred which shall have operated to suspend the right of the Borrower to withdraw amounts under the AID Loan Agreement, the Exim-Authority Loan Agreement or the U. K. Loan Agreement or the right of Valco to withdraw amounts under the Exim-Valco Loan Agreement.

“(r) The Exim-Valco Loan Agreement shall have been amended, terminated, assigned or waived or the loan provided for thereunder shall have been cancelled or prematured, in whole or in part, so as materially and adversely to affect the ability of the Borrower to carry out the Project or to pay amounts due under the Loan or the Bonds.”

(b) By the deletion of Section 5.03 thereof and the substitution therefor of the following new Section :

“SECTION 5.03. *Cancellation by the Bank.* If (a) the right of the Borrower to make withdrawals from the Loan Account shall have been suspended with respect to any amount of the Loan for a continuous period of one year if the suspension is due to an event specified in paragraph (p) or (q) of Section 5.02 of the Loan Regulations, or otherwise for a continuous period of thirty days, or (b) by the date specified in the Loan Agreement as the Bank Loan Closing Date an amount of the Loan shall remain unwithdrawn from the Loan Account, the Bank may by notice to the Borrower terminate the right of the Borrower to make withdrawals with respect to such amount. Upon the giving of such notice such amount of the Loan shall be cancelled.”

LETTER RELATING TO THE LOAN AGREEMENT

VOLTA RIVER AUTHORITY
ACCRA

February 8, 1962

International Bank for Reconstruction
and Development
1818 H Street, N.W.
Washington 25, D.C.

Dear Sirs,

We refer to Section 5.08 of the Loan Agreement (*Volta Project*) of even date¹ between us.

We understand that this Section requires the Authority, among other things, to establish and maintain its rates for the supply of electricity at levels adequate to provide revenues to carry on its operations and maintain its financial position in accordance with sound business and public utility practices. This requirement is consistent with the requirements set forth in the Volta River Development Act, 1961, and this letter is intended to state our understanding as to the implementation of these requirements.

We have reviewed with you the financial forecasts² of the Authority which are attachments to this letter. These forecasts indicate that the Authority will operate at a deficit or at best earn only a modest return on the Republic of Ghana's investment in the Authority in the initial years of operations. However, earnings are forecast to improve steadily so that by 1974 we plan to earn a return of 8 % on the Republic's investment, and we confirm that it is the intention of the Authority to achieve an 8 % return by no later than 1974 and to maintain at least such return thereafter. In computing such rate of return, annual income after all proper charges including maintenance, depreciation or renewals, and interest is to be taken as a percentage of the Republic's investment in the Authority, including capitalized interest charged to construction, as properly recorded in the accounts of the Authority.

We agree that until we achieve the 8 % rate of return revenues must at minimum, taking one year with another, be adequate (1) to cover all operating costs including proper provision for maintenance, depreciation or renewals, taxes and interest and amortization payments to the extent that such payments exceed depreciation and (2) to provide for all expenditures required to satisfy future growth in demand to the extent such expenditures cannot be financed from other sources.

¹ See p. 220 of this volume.

² See p. 250 to 260 of this volume.

We further agree to consult with the Bank from time to time on the levels of rates necessary to achieve the requirements set forth in this letter.

Please confirm your agreement with the foregoing by signing the form of confirmation on the enclosed copy of this letter.

Very truly yours,

Volta River Authority :

(Signed) F. J. DOBSON
Authorized Representative

Confirmed :

International Bank for
Reconstruction and Development :

By J. Burke KNAPP

VOLTA RIVER PROJECT

FORECAST SUMMARY INCOME STATEMENTS AND CASH FLOWS 1966-1976

Based on the Assumption that the Firm Power Requirements of the Smelter Increase to 315 MW beginning April 1972

<i>Years Ending December 31</i>	<u>1966</u>	<u>1967</u>	<u>1968</u>	<u>1969</u>	<u>1970</u>	<u>1971</u>	<u>1972</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>
Sales (Millions of Kwh)											
Smelter	—	433.6	1,241.7	1,679.7	1,752.0	1,752.0	2,192.2	2,555.7	2,628.0	2,628.0	2,628.0
Non-Smelter	331.8	387.2	437.6	493.5	555.3	623.6	698.9	781.8	872.9	972.9	1,082.5
Mines	52.6	63.1	73.6	84.1	94.6	105.1	118.3	131.4	144.5	157.7	157.7
Total	<u>384.4</u>	<u>883.9</u>	<u>1,752.9</u>	<u>2,257.3</u>	<u>2,401.9</u>	<u>2,480.7</u>	<u>3,009.4</u>	<u>3,468.9</u>	<u>3,645.4</u>	<u>3,758.6</u>	<u>3,868.2</u>
Average Revenue per Kwh Sold in Mills	14.3	8.6	6.0	5.6	5.8	6.0	5.8	5.7	5.9	6.1	6.4

In Thousands of Ghana Pounds

Operating Revenues											
Smelter (2.625 Mills/Kwh)		407	1,164	1,575	1,643	1,643	2,055	2,396	2,464	2,464	2,464
Non-Smelter (15 Mills/Kwh)	1,777	2,074	2,344	2,644	2,975	3,341	3,744	4,188	4,676	5,212	5,799
Mines (10 Mills/Kwh)	188	225	263	300	338	375	422	469	516	563	563
Total	<u>1,965</u>	<u>2,706</u>	<u>3,771</u>	<u>4,519</u>	<u>4,956</u>	<u>5,359</u>	<u>6,221</u>	<u>7,053</u>	<u>7,656</u>	<u>8,239</u>	<u>8,826</u>
Operating Expenses											
Cost of Operations	820	820	820	820	820	820	900	900	900	900	960
Depreciation	—	1,613	1,613	1,613	1,613	1,613	1,720	1,744	1,753	1,760	1,845
Total	<u>820</u>	<u>2,433</u>	<u>2,433</u>	<u>2,433</u>	<u>2,433</u>	<u>2,433</u>	<u>2,620</u>	<u>2,644</u>	<u>2,653</u>	<u>2,660</u>	<u>2,805</u>
Gross Income	1,145	273	1,338	2,086	2,523	2,926	3,601	4,409	5,003	5,579	6,021
Income Deductions											
Interest Paid	1,739	1,805	1,752	1,697	1,638	1,577	1,511	1,442	1,370	1,292	1,211
Interest Charged to Construction (Credit)	<u>(1,739)</u>	—	—	—	(33)	(121)	(19)	(8)	(33)	(98)	(13)
Total	—	<u>1,805</u>	<u>1,752</u>	<u>1,697</u>	<u>1,605</u>	<u>1,456</u>	<u>1,492</u>	<u>1,434</u>	<u>1,337</u>	<u>1,194</u>	<u>1,198</u>

ATTACHMENT A (continued)

No. 6482	Net Earnings or (Deficit) . . .	1,145	(1,532)	(414)	389	918	1,470	2,109	2,975	3,666	4,385	4,823
	Cumulative Net Earnings or (Deficit)	1,145	(387)	(801)	(412)	506	1,976	4,085	7,060	10,726	15,111	19,934
	Cash Generation											
	Gross Income	1,145	273	1,338	2,086	2,523	2,926	3,601	4,409	5,003	5,579	6,021
	Depreciation	—	1,613	1,613	1,613	1,613	1,613	1,720	1,744	1,753	1,760	1,845
	Total	1,145	1,886	2,951	3,699	4,136	4,539	5,321	6,153	6,756	7,339	7,866
	Less : Debt Service	—	2,789	2,790	2,789	2,790	2,789	2,790	2,789	2,790	2,789	2,790
	Additions to Plant	—	—	—	—	1,309	2,120	757	313	1,325	1,604	533
	Total	—	2,789	2,790	2,789	4,099	4,909	3,547	3,102	4,115	4,393	3,323
	Cash Surplus or (Deficit) . . .	1,145 ¹	(903)	161	910	37	(370)	1,774	3,051	2,641	2,946	4,543

NOTE: ¹ This amount does not include the £G 0.5 million provision for working capital included in the estimated capital requirements.

Principal Assumptions:

Initial Power Plant: 589 MW (Four 147.2 MW Units)

Power Plant in Operation: January 1, 1966

Start Up of Smelter April 1, 1967

(Permanent Delivery Date):

Capital Requirements

through 1966: £G 67.8 Million

Financing: £G 33.9 Million Equity from Ghana

£G 33.9 Million borrowings as follows:

£G 16.2 Million—IBRD

25-Year Loan. 6-Year Grace Period. 5 ¾ %
Interest. Maturing 1967-1985

£G 7.1 Million—DLF

30-Year Loan. 6-Year Grace Period. 3 ½ %
Interest. Maturing 1967-1990

£G 3.6 Million—Export-Import Bank

25-Year Loan. 6-Year Grace Period. 5 ¾ %
Interest. Maturing 1967-1985

£G 5.0 Million—U.K.

25-Year Loan. 6-Year Grace Period. 6 % In-
terest. Maturing 1967-1985

£G 2.0 Million—Source to be Determined

25-Year Loan. 6-Year Grace Period. 5 ¾ %
Interest. Maturing 1967-1985

Debt Service:

Level Annual payments on all borrowings with first semi-
annual payment due June 30, 1967.

Additional Power Units:

Required in 1972 and 1976 to be financed with future
additions to transmission facilities out of internal cash
generation.

Non-Smelter Power Price:

15 Mills (1.29d) per Kwh

Mines Power Price:

10 Mills (0.86d) per Kwh

Smelter Power Price:

2.625 Mills (0.25d) per Kwh with commitment to pay for a
minimum output of power per 12 months beginning
April 1, 1967 as follows:

First year 66 MW—£G 542,000

Second year 167 MW—£G 1,371,000

Third through fifth year 200 MW—£G 1,643,000

Sixth year 267 MW—£G 2,193,000

Seventh year and thereafter 300 MW—£G 2,464,000

Depreciation:

Dam and Power Plant: 2 % per Annum

Transmission facilities: 3 % per Annum

ATTACHMENT A (continued)

No. 6462	Cumulative Cash Surplus or (Deficit)	1,145	242	403	1,313	1,350	980	2,754	5,805	8,446	11,392	15,935
	Gross Income as % of Net Fixed Assets in Operation		0.37 %	1.86 %	2.97 %	3.68 %	4.37 %	5.22 %	6.48 %	7.51 %	8.57 %	9.10 %
	Net Earnings as % of Ghana's Investment		—	—	0.97 %	2.29 %	3.67 %	5.26 %	7.42 %	9.14 %	10.94 %	12.03 %
	Times Debt Service Covered by Internal Cash Generation. . .		—	1.06	1.33	1.48	1.63	1.91	2.21	2.42	2.63	2.82

VOLTA RIVER PROJECT

FORECAST SUMMARY INCOME STATEMENTS AND CASH FLOWS 1966-1976

Based on the Assumption that the Firm Power Requirements of the Smelter Increase to 315 MW beginning April 1969

<i>Years Ending December 31</i>	<u>1966</u>	<u>1967</u>	<u>1968</u>	<u>1969</u>	<u>1970</u>	<u>1971</u>	<u>1972</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>
Sales (Millions of Kwh)											
Smelter	—	433.6	1,241.7	2,336.7	2,628.0	2,628.0	2,628.0	2,628.0	2,628.0	2,628.0	2,628.0
Non-Smelter	331.8	387.2	437.6	493.5	553.3	623.6	698.9	781.8	872.9	972.9	1,082.5
Mines	52.6	63.1	73.6	84.1	94.6	105.1	118.3	131.4	144.5	157.7	157.7
Total	<u>384.4</u>	<u>883.9</u>	<u>1,752.9</u>	<u>2,914.3</u>	<u>3,275.9</u>	<u>3,356.7</u>	<u>3,445.2</u>	<u>3,541.2</u>	<u>3,645.4</u>	<u>3,758.6</u>	<u>3,868.2</u>
Average Revenue per Kwh Sold in Mills	14.3	8.6	6.0	4.9	4.9	5.2	5.4	5.6	5.9	6.1	6.4
<i>In Thousand of Ghana Pounds</i>											
Operating Revenues											
Smelter (2.625 Mills/Kwh)	—	407	1,164	2,191	2,464	2,464	2,464	2,464	2,464	2,464	2,464
Non-Smelter (15 Mills/Kwh)	1,777	2,074	2,344	2,644	2,975	3,341	3,744	4,188	4,676	5,212	5,799
Mines (10 Mills/Kwh)	188	225	263	300	338	375	422	469	516	563	563
Total	<u>1,965</u>	<u>2,706</u>	<u>3,771</u>	<u>5,135</u>	<u>5,777</u>	<u>6,180</u>	<u>6,630</u>	<u>7,121</u>	<u>7,656</u>	<u>8,239</u>	<u>8,826</u>
Operating Expenses											
Cost of Operations	820	820	820	880	900	900	900	900	900	900	960
Depreciation	—	1,613	1,613	1,691	1,717	1,717	1,720	1,744	1,753	1,760	1,845
Total	<u>820</u>	<u>2,433</u>	<u>2,433</u>	<u>2,571</u>	<u>2,617</u>	<u>2,617</u>	<u>2,620</u>	<u>2,644</u>	<u>2,653</u>	<u>2,660</u>	<u>2,805</u>
Gross Income	1,145	273	1,338	2,564	3,160	3,563	4,010	4,477	5,003	5,579	6,021
Income Deductions											
Interest Paid	1,739	1,864	1,809	1,752	1,691	1,628	1,560	1,489	1,414	1,334	1,250
Interest Charged to Construc- tion (Credit)	<u>(1,739)</u>	<u>(18)</u>	<u>(95)</u>	<u>(27)</u>	<u>—</u>	<u>(3)</u>	<u>(19)</u>	<u>(8)</u>	<u>(33)</u>	<u>(98)</u>	<u>(13)</u>
Total	<u>—</u>	<u>1,846</u>	<u>1,714</u>	<u>1,725</u>	<u>1,691</u>	<u>1,625</u>	<u>1,541</u>	<u>1,481</u>	<u>1,381</u>	<u>1,236</u>	<u>1,237</u>

ATTACHMENT B (continued)

No. 6462	Net Earnings or (Deficit) . . .	1,145	(1,573)	(376)	839	1,469	1,938	2,469	2,996	3,622	4,343	4,784
	Cumulative Net Earnings or (Deficit)	1,145	(428)	(804)	35	1,504	3,442	5,911	8,907	12,529	16,872	21,656
	Cash Generation											
	Gross Income	1,145	273	1,338	2,564	3,160	3,563	4,010	4,477	5,003	5,579	6,021
	Depreciation	—	1,613	1,613	1,691	1,717	1,717	1,720	1,744	1,753	1,760	1,845
	Total	1,145	1,886	2,951	4,255	4,877	5,280	5,730	6,221	6,756	7,339	7,866
	Less : Debt Service	—	2,880	2,880	2,880	2,880	2,880	2,880	2,880	2,880	2,880	2,880
	Additions to Plant	—	982	1,840	504	—	103	757	313	1,325	1,604	533
	Total	—	3,862	4,720	3,384	2,880	2,983	3,637	3,193	4,205	4,484	3,413
	Cash Surplus or (Deficit) . . .	3,345 ¹	(1,976)	(1,769)	871	1,997	2,297	2,093	3,028	2,551	2,855	4,453

NOTE : ¹ This amount includes £G 2.2 million (£G 1.1 million of borrowings and £G1.1million of equity) which represents the balance of the financing available to the Authority as of December 31, 1966 after the completion of the initial four-unit power plant. It does not include the £G 0.5 million provision for working capital included in the estimated capital requirements.

Principal Assumptions :

Initial Power Plant : 589 MW (Four 147.2 MW Units)
with fifth unit installed by April 1969

Power Plant in Operation : January 1, 1966

Start Up of Smelter

(*Permanent Delivery Date*) : April 1, 1967

Capital Requirements

t hrough 1969 :

Financing :

£G 71.1 Million
£G 35 Million Equity from Ghana
£G 35 Million borrowings as follows :

£G 16.8 Million—IBRD
25-Year Loan. 6-Year Grace Period. 5 ¾ %
Interest. Maturing 1967-1985

£G 7.1 Million—DLF
30-Year Loan. 6-Year Grace Period. 3 ½ %
Interest. Maturing 1967-1990

£G 3.6 Million—Export-Import Bank
25-Year Loan. 6-Year Grace Period. 5 ¾ %
Interest. Maturing 1967-1985

£G 5.0 Million—U.K.
25-Year Loan. 6-Year Grace Period. 6 %
Interest. Maturing 1967-1985

£G 2.5 Million—Source to be Determined
25-Year Loan. 6-Year Grace Period. 5 ¾ %
Interest. Maturing 1967-1985

£G 1.1 Million interest cash generation

Debt Services :

Level annual payments on all borrowings with first semi-annual payment due June 30, 1967.

Additional Power Unit :

Required in 1976, to be financed with future additions to transmission facilities out of internal cash generation.

Non-Smelter Power Price :

15 Mills (1.29d) per Kwh

Mines Power Price :

10 Mills (0.86d) per Kwh

Smelter Power Price :

2,825 Mills (0.25d) per Kwh with commitment to pay for a minimum output of power per 12 months beginning April 1, 1967 as follows :

First year 66 MW—£G 542,000
Second year 167 MW—£G 1,371,000
Third year and thereafter . . . 300 MW—£G 2,464,000

Depreciation :

Dam and Power Plant : 2 % per Annum
Transmission facilities : 3 % per Annum

ATTACHMENT B (continued)

No. 6462

Cumulative Cash Surplus or (Deficit)	3,345	1,369	(400)	471	2,468	4,765	6,858	9,886	12,437	15,292	19,745
Gross Income as % of Net Fixed Assets in Operation	0.37 %	1.86 %	3.65 %	4.39 %	5.07 %	5.84 %	6.61 %	7.54 %	8.61 %	9.14 %	
Net Earnings as % of Ghana's Investment	—	—	2.04 %	3.57 %	4.70 %	5.99 %	7.27 %	8.79 %	10.54 %	11.61 %	
Times Debt Service Covered by Internal Cash Generation . . .	—	1.02	1.48	1.69	1.83	1.99	2.16	2.35	2.55	2.73	