

SCHEDULE (Section 2)

AGREEMENT BETWEEN THE REPUBLIC OF ZIMBABWE AND THE
REPUBLIC OF ZAMBIA CONCERNING THE UTILIZATION OF THE
ZAMBEZI RIVER

The Republic of Zimbabwe and the Republic of Zambia, desiring to obtain for the economic, industrial and social development of the two countries, the greatest possible benefit from the natural advantages offered by the waters of the Zambezi River and to improve and intensify the utilization of the waters for the production of energy and for any other purpose beneficial to the two countries, have decided, pursuant to the resolution of the Higher Authority for Power relative to the future operations of the Central African Power Corporation and the provisions of the Inter-Governmental Agreement of 14th February, 1986, to conclude the present Agreement.

ARTICLE 1

For the purposes of this Agreement and unless the context otherwise requires, it shall be understood that:—

“Authority” means the Zambezi River Authority referred to in Article 7;

“Board” means the Board of Directors referred to in Article 8;

“Contracting State” means the Republic of Zambia or the Republic of Zimbabwe and “State” shall be construed accordingly;

“Council” means the Council of Ministers referred to in Article 4;

“functions” includes powers and duties;

“installations”, in relation to the Zambezi River, means those installations or civil engineering structures owned by the Authority;

“Kariba Complex” means—

- (i) the Kariba Dam and reservoir;
- (ii) all telemetering stations relating to the Kariba Dam;
- (iii) any other installations owned by the Authority at Kariba;

“National Electricity Undertakings” means the Zambia Electricity Supply Corporation Limited and the Zimbabwe Electricity Supply Authority or any successor national undertakings thereto;

“resident”, in relation to either Contracting State, means any person who is permanently or ordinarily resident in that State;

“Zambezi Scheme” means the Kariba Complex and any additional dams, reservoirs and installations that may be constructed or installed on the Zambezi River;

“Zambezi River” means that part of the Zambezi River common to the borders of the two States;

“ZESA” means the Zimbabwe Electricity Supply Authority;

“ZESCO” means the Zambia Electricity Supply Corporation Limited.

ARTICLE 2

1. The Contracting States agree that—

- (a) the Inter-Governmental Agreement dated the 25th of November, 1963, relating to the Central African Power Corporation;
- (b) the Inter-Governmental Agreement dated 14th February, 1986, relating to the re-establishment and reconstitution of the Central African Power Corporation;
- (c) the Memoranda of Understandings dated 30th November, 1977, and 18th July, 1985, respectively;

shall, by virtue of this Article, terminate as from the date of the coming into operation of this Agreement.

2. Each Contracting State agrees to—

- (a) repeal Part III of the Federation of Rhodesia and Nyasaland (Dissolution) Order in Council, 1963, in respect of its own territory; and
- (b) repeal the legislation specifically relating to the Central African Power Corporation and replace it with new legislation which is more suitable to the new arrangements specified in this Agreement; and
- (c) where necessary, amend any of its other existing laws to give full effect to the provisions of this Agreement.

3. The provisions of the new legislation referred to in sub-article 2 (b) shall be similar in effect and be in such terms as shall be agreed between the Contracting States.

4. Each Contracting State undertakes not to amend the legislation referred to in sub-article 2 (b) or any regulations made thereunder without the prior approval of the proposed amendments by the other Contracting State.

ARTICLE 3

The Contracting States, recognizing that the operation and maintenance of the Zambezi Scheme is an economical and effective means of providing water for the generation of electric power and for other purposes which the Contracting States may decide upon, have accordingly agreed to utilize, operate and maintain the said Scheme.

ARTICLE 4

1. The Contracting States undertake to ensure, through their respective laws referred to in paragraph (b) of sub-article 2 of Article 2, the continued existence of the Higher Authority for Power as the Council of Ministers.
2. The Council shall consist of four members, two of whom shall be Ministers of the Government of the Republic of Zambia

and two Ministers of the Government of the Republic of Zimbabwe designated by their respective Governments to be the members of the Council.

3. The Council shall in each calendar year elect a Chairman to preside over its meetings. The chairmanship shall be held alternately by a Minister of the Government of the Republic of Zambia and a Minister of the Government of the Republic of Zimbabwe.
4. The Council shall regulate its own procedure and shall meet for the transaction of its business at least once every twelve months at such places and at such times as it may decide.
5. No decision of the Council shall have effect unless it is unanimous. In the absence of such unanimity the matter shall be referred to the Governments of the Contracting States for resolution.
6. The four members of the Council shall form a quorum.
7. The Council shall appoint a person employed in the public service of either Contracting State as its Secretary.

ARTICLE 5

The Council shall—

- (a) be responsible to the Contracting States for all matters of policy relating to the use of the Zambezi River and any installations thereon;
- (b) give such directions to the Authority as will ensure the most efficient use of the Zambezi River and its installations;
- (c) generally supervise the operations of the Authority, and may order any enquiries into the activities of the Authority;
- (d) consider and approve—
 - (i) development plans of the Authority and the schedule of dates for payments relating thereto;
 - (ii) the annual budget of the Authority;
 - (iii) the appropriation of surplus funds of the Authority, if any;
 - (iv) the raising and investment of funds by the Authority;
- (e) advise the Contracting States on any matter relating to the use of the Zambezi River and its installations;
- (f) carry out such other functions as are provided for in this Agreement or are incidental or conducive to the better performance of its functions under this Agreement.

ARTICLE 6

1. The Council may make rules prescribing anything which, in the opinion of the Council, is necessary or convenient to be so prescribed for the better exercise of the functions of the Authority under this Agreement.
2. Rules made by the Council under this Article may provide for—

- (a) the manner in which the Authority shall perform any particular function conferred or imposed on it by this Agreement;
- (b) the manner in which the Authority shall manage its finances and in which its accounts shall be audited;
- (c) the terms and conditions of service of Board members;
- (d) the manner in which the Authority shall prepare reports for submission to the Council.

ARTICLE 7

1. The Contracting States undertake to ensure, through their respective laws referred to in paragraph (b) of sub-article 2 of Article 2, the continued existence of the Central African Power Corporation as the Zambezi River Authority.
2. The Authority shall have juridical personality with capacity to contract, acquire and dispose of immovable and movable property, institute legal proceedings, and, subject to this Agreement, do or perform such other acts or things as a body corporate may by law do or perform.

ARTICLE 8

1. There shall be a Board of Directors which, subject to the overall direction of the Council, shall be responsible for the policy, control and management of the Authority.
2. The Board shall consist of—
 - (a) three members appointed by the Government of the Republic of Zambia; and
 - (b) three members appointed by the Government of the Republic of Zimbabwe; and
 - (c) until such time as the loan dated 12th July, 1956, from the Commonwealth Development Corporation is fully repaid, one member who shall be appointed by the Council and be acceptable to the Commonwealth Development Corporation.
3. In appointing the Board members referred to in sub-article 2 the appointing authority shall—
 - (a) appoint an alternate in respect of each member;
 - (b) have regard to the desirability of appointing persons with recognized competence in industry, engineering, the energy sector, finance or management or with such other technical experience or qualifications as are directly relevant to the running of the affairs of the Authority;
 - (c) not appoint as a Board member a member of its national Parliament.
4. A Board member shall hold office for a period of four years or for such other period as the Council may determine, and shall be eligible for re-appointment.
5. The Board shall in each calendar year elect a Chairman to preside over its meetings. The chairmanship shall be held alternately by a Board member appointed by the Government

of the Republic of Zambia and the Government of the Republic of Zimbabwe.

6. The Board shall regulate its own procedure and shall meet for the transaction of its business at least once every three months at such places and at such times as it may decide.
7. Decisions of the Board shall be by a majority of the Board members present and voting at the meeting and in the event of an equality of votes, the matter shall be referred to the Council for its determination.
8. Four Board members, two from each Contracting State, shall form a quorum provided, however, that the validity of any proceedings, act or decision of the Board shall not be affected by any vacancy in the membership of the Board or any defect in the appointment of any member or the fact that any person not entitled so to do took part in the proceedings.
9. If a Board member is present at a meeting of the Board at which any matter is the subject of consideration and in which matter the Board member or his spouse is directly or indirectly interested in a private capacity, he shall, as soon as practicable after the commencement of the meeting, disclose such interest and shall not, unless the Board otherwise directs, take part in the consideration or discussion of, or vote on, any question touching on such matter.
10. Each Board member shall be paid out of the funds of the Authority such remuneration and allowances, if any, as the Council may determine.

ARTICLE 9

The functions of the Authority shall be to—

- (a) operate, monitor and maintain the Kariba Complex;
- (b) in consultation with the National Electricity Undertakings, investigate the desirability of constructing new dams on the Zambezi River and make recommendations thereon to the Council;
- (c) subject to the approval of the Council, construct, operate, monitor and maintain any other dams on the Zambezi River;
- (d) collect, accumulate and process hydrological and environmental data of the Zambezi River for the better performance of its functions and for any other purpose *beneficial to the Contracting States*;
- (e) in consultation with the National Electricity Undertakings, regulate the water level in the Kariba reservoir and in any other reservoirs owned by the Authority;
- (f) make such recommendations to the Council as will ensure the effective use of the waters and other resources of the Zambezi River;
- (g) liaise with the National Electricity Undertakings in the performance of its functions that may affect the generation and transmission of electricity to the Contracting States;

- (h) subject to the provisions of Article 13, recruit, employ and provide for the training of such staff as may be necessary for the performance of its functions under this Agreement;
- (i) from time to time and subject to the approval of the Council, make such revisions of salaries, wages and other remuneration to its employees as it considers appropriate;
- (j) submit development plans and programmes to the Council for approval;
- (k) give effect to such directions as may, from time to time, be given to it by the Council;
- (l) carry out such other functions as are provided for in this Agreement or are incidental or conducive to the better performance for its functions.

ARTICLE 10

1. The Authority may make by-laws prescribing anything which, in the opinion of the Board, is for the better exercise of the functions of the Authority and such by-laws may provide for—
 - (a) the manner in which the staff of the Authority may be recruited;
 - (b) the terms and conditions of service of employees of the Authority;
 - (c) the fees chargeable by the Authority for any service performed or any facilities provided by the Authority;
 - (d) the construction, operation, protection, control and inspection of works, plant, machinery, apparatus, appliances and equipment relating to the Zambezi River.
2. By-laws made by the Authority shall only have legal force if they have been approved by the Council and published in the *Government Gazette* of each Contracting State in which shall be specified the commencement date of such by-laws.

ARTICLE 11

1. There shall be a Chief Executive to the Authority who shall, subject to the approval of the Council, be appointed by the Board and shall be a national or resident of the Contracting State other than that in which the Authority's Head Office is situated. The provisions of paragraph (b) of Article 13 shall apply, as appropriate, in relation to the appointment of the Chief Executive.
2. Subject to the approval of the Council, the terms and conditions of Service of the Chief Executive shall be determined by the Board.
3. With the approval of the Council, the Board may dismiss, suspend or reprimand the Chief Executive for any reason which it considers sufficient.
4. Subject to the control of the Board, the Chief Executive shall be responsible for the day-to-day management of the operations and property of the Authority.
5. Subject to the approval of the Council, the Board may delegate to the Chief Executive such of its functions as it considers fit.

ARTICLE 12

There shall be a Secretary to the Authority who shall be appointed by the Board on such terms and conditions the Board may determine.

ARTICLE 13

In appointing the Secretary and any other of its employees, the Authority shall—

- (a) *except with approval of the Council, not appoint any person who is not a national or resident of either of the Contracting States;*
- (b) in order to ensure the highest standard of performance in the operations of the Authority, only appoint persons of high integrity, sufficient qualifications and experience, having regard to the desirability of maintaining an equitable distribution of appointments from among the nationals of the two States.

ARTICLE 14

1. The funds of the Authority shall consist of—
 - (a) moneys paid to the Authority pursuant to sub-articles 2 and 3;
 - (b) tariffs, fees or other charges which it may, with the approval of the Council, charge for services rendered or facilities provided by the Authority;
 - (c) grants, donations, loans or other similar disbursements from any source whatsoever approved by the Council; and
 - (d) interest from investments and loans to its employees.
2. The annual budget of the Authority shall be financed by payments made by the Contracting States in equal shares after taking into account funds available to the Authority under paragraphs (b), (c) and (d) of sub-article 1.
3. Payments by the Contracting States to the Authority shall be made upon the approval by the Council of each annual budget in accordance with the schedule of payments approved in relation thereto.
4. Payments by the Contracting States shall be made in their own currencies and the Authority shall maintain an equalization account in that regard.

ARTICLE 15

1. The Authority shall, subject to the general directions of the Council, conduct its business affairs on a sound financial basis.
2. The financial year of the Authority shall commence on the first day of July of each calendar year and end on the thirtieth day of June of the next following calendar year.
3. The Board shall, prior to the commencement of each financial year, cause to be prepared and submitted for the approval of the Council, a budget of the Authority for such financial year.

4. The Board shall ensure that accounts and other records in relation thereto are kept by the Authority and shall prepare in respect of each financial year of the Authority a statement of accounts.
5. The accounts of the Authority in respect of each financial year shall, in accordance with auditing principles consistently applied, be audited by such independent Auditors as the Board may, subject to the approval of the Council, appoint for the purpose.
6. As soon as the accounts of the Authority have been prepared and audited, which should not be later than six months after the end of each financial year, the Board shall submit to the Council and to the Minister responsible for energy in each Contracting State an annual report which shall consist of—
 - (a) an income and expenditure account, a balance sheet, the report of the Auditors to the Authority and details of any directions which may have been given to the Authority by the Council in terms of this Agreement;
 - (b) a statement of capital expenditure certified as correct by the Auditors to the Authority and showing the general heads of such expenditure compared with the figures therefore in any budget approved for that financial year in terms of sub-article 3, together with variations therefrom:

Provided that, if the Authority cannot submit the accounts within six months after the end of any financial year, the Board shall inform the Council of the reasons therefore.
7. The Authority may, subject to the approval of the Council and subject to such terms and conditions as the Council may impose in respect thereof, establish and administer specific reserves of funds for the purposes of carrying out its functions or for the benefit of its employees.
8. The Authority shall, except as provided in this Agreement, be exempt from the provisions of any legislation of the Contracting States regarding the audit and control of public accounts, and in particular, exempt from provisions in such legislation regarding—
 - (a) the payment of surplus moneys to the Consolidated Revenue Funds or the equivalent funds of the Contracting States;
 - (b) the submission of capital budgets;
 - (c) the submission of revenue and expenditure budgets;
 - (d) the submission of annual reports and accounts;
 - (e) the powers of the Comptroller and Auditor-General or the official carrying out similar duties in each Contracting State.

ARTICLE 16

The Contracting States shall expedite the granting of work and residence permits and duty passes to employees of the Authority who require them for the purpose of the performance of their duties, and may not unreasonably withhold such permits or passes. The Authority may, where appropriate, seek the assistance of the Council in obtaining the grant of the said permits and passes.

ARTICLE 17

1. Each Contracting State undertakes, subject to the provisions of this Article, to exempt the Authority from payment of taxes on capital, income or profits.
2. The exemption from the payment of income tax under this Article shall not extend to the salaries, wages, allowances, other remuneration or pensions paid to the Board members, agents or employees of the Authority.
3. Customs and excise duties paid by the Authority or by importers on goods imported and subsequently purchased by the Authority will, so far as is practicable, be recorded and shared equally between the Contracting States.
4. When goods owned by the Authority are removed from one State to the other—
 - (a) if the rate of duty applicable to such goods is the same in both Contracting States, no duty shall be collected or refunded in the importing and exporting States;
 - (b) in other cases, whether the goods are new or used, a refund shall be made of any duty paid in the exporting State and any duty payable shall be collected in the importing State. For the purpose of both refund and collection of duty, the value for duty purposes shall be—
 - (i) in the case of imported goods, the original import value;
 - (ii) in the case of goods grown, manufactured or produced in either of the States, the original value less an appropriate allowance in the case of used goods.
5. The detailed application of special customs arrangements in respect of the goods owned by the Authority shall be the subject of agreement between the two States, in consultation with the Authority.

ARTICLE 18

1. So as to ensure the efficient and equitable use of the waters of the Zambezi River, the Contracting States undertake to—
 - (a) keep each other informed of any proposals approved by them for the abstraction of water from the Kariba Dam or any other dam that may be constructed on the Zambezi River or for the impounding or abstraction

- of water from the sources of the said Dam or other future dams for irrigation or other purposes;
- (b) consult the Authority on any proposals for the impounding or abstraction of substantial quantities of water from the Kariba Dam or any other dams that may be constructed on the Zambezi River, and seek the approval of each other before approving such impounding or abstraction;
 - (c) consult with each other and the Authority, if so requested by the Authority through the Council, in regard to any problems arising from the abstraction of water from the Kariba Dam or any other future dams that may be constructed on the Zambezi River, or the impounding or abstraction of water from the sources of the said Dam or other future dams.
2. They further undertake to ensure that the Ministers responsible for energy in their respective territories liaise and co-ordinate with each other on all matters affecting the public interest of their two territories in relation to the ownership, management, control and operation of the Authority.

ARTICLE 19

The two States undertake to protect the Authority, its Board members, employees or agents from civil or criminal liability in respect of anything done in good faith and without negligence pursuant to the provisions of this Agreement, save that such protection from liability shall not have the effect of preventing any person from obtaining redress in a court of competent jurisdiction for any breach of contract.

ARTICLE 20

1. The Contracting States undertake to declare for public utility the areas necessary for hydroelectric development, its ancillary works and their operation, and to execute, within the areas of their respective jurisdictions, all administrative and judicial acts required to expropriate property and its improvements or to establish servitudes or easements thereon.
2. Subject to sub-article 3, each Contracting State undertakes to acquire by purchase, expropriation or other means in accordance with its own laws, any properties and rights connected therewith within its territory that may be necessary for the operations of the Authority.
3. The Contracting States undertake to meet the costs of compensation in respect of any expropriation, purchase or any other means of acquisition under this Article in equal shares, with the expropriation of water rights being charged to the cost of operation and maintenance as appropriate.

ARTICLE 21

The Contracting States shall, by means of additional protocols or unilateral acts limited to their respective jurisdictions, take

all measures necessary for the implementation of this Agreement.

ARTICLE 22

1. The Contracting States undertake to ensure co-operation between the National Electricity Undertakings in securing working arrangements for the operation and maintenance of the interconnected systems for the generation and transmission of energy within the two States.
2. Until such time as other working arrangement relating to the above-mentioned co-operation are devised and agreed to by the National Electricity Undertakings, the working arrangements specified in Annexure I shall form the basis of that co-operation.
3. In addition to the working arrangements referred to in sub-articles 1 and 2, the National Electricity Undertakings may also devise and agree on specific working arrangements for the operation and maintenance of the interconnectors at Kariba Dam and at any other future dams constructed on the Zambezi River.

ARTICLE 23

1. The Contracting States undertake to share all the available energy from the Kariba Dam equally in accordance with the procedures set out in Annexure II.
2. The Contracting States undertake to share all the available energy from any future dams that may be constructed on the Zambezi River in proportions to be determined by the Contracting States, having regard to their respective shares in the construction costs relative thereto, provided that, where one Contracting State has borne more than half of the construction costs of any future dam, the other Contracting State shall have the right to make a contribution or further contributions to such costs, thereby acquiring a right to an appropriate proportion, not exceeding half, of the available energy from that dam.
3. Each Contracting State shall be entitled to sell to the other Contracting State, at prices to be fixed by agreement, any part of its share of the available energy referred to in sub-articles 1 and 2. In the event of one Contracting State wishing to sell any of its surplus energy, the other Contracting State shall have the right of first refusal in respect of such sale.

ARTICLE 24

To the extent that those rights will not be inconsistent with the constitutional rights of private individuals in each State, the rights of the Contracting States in the use of the Zambezi River shall take precedence over all private rights and each Contracting State shall, within its territory, take such steps as are necessary to ensure the observance of such rights.

ARTICLE 25

1. The Contracting States shall, jointly and individually, provide the Authority, at its request, guarantees in respect of all local and foreign loans in the proportion of fifty per cent. to fifty per cent. respectively, and in like manner, they shall ensure the foreign exchange convertibility necessary for payment of the obligations assumed by the Authority.
2. In the event of the Council agreeing that the Authority be provided with additional capital from the Contracting States or that guarantees should be given by the States in respect of loans or credits to be obtained by the Authority from other sources, such additional capital or guarantees shall be jointly provided or given by the Contracting States in equal proportions.

ARTICLE 26

1. The Contracting States shall make whatever grants are necessary for the carrying out of any investigations and studies relating to any future development of the Zambezi River, such expenditure being deemed to be part of the cost of installations.
2. The cost of the operation and maintenance of future dams and associated installations shall be divided between the Contracting States in proportions to be determined by the Authority having regard to their respective shares in the construction costs relative thereto.

ARTICLE 27

The competent courts of law for the Authority with respect to natural or juridical persons domiciled in Zambia or Zimbabwe shall be those of Zambia and Zimbabwe respectively. Accordingly, each Contracting State shall apply its own laws, taking into account the provisions of this Agreement.

ARTICLE 28

1. The Contracting States shall further the activities of the Authority in every possible way.
2. Where this Agreement provides for rights and obligations which the Authority cannot directly exercise or fulfil, the Contracting States shall take steps to ensure that the rights are exercised and the obligations fulfilled.

ARTICLE 29

1. The Authority shall, immediately after entry into force of this Agreement, transfer or take such steps as are necessary to effect the transfer of certain of its employees to the National Electricity Undertakings in accordance with such directions as the Council may give for the purpose.

2. The Contracting States undertake to enforce the following minimum conditions in respect of the transfer of any employees of the Authority to their respective National Electricity Undertakings—
- (a) where any employee of the Authority is transferred to a National Electricity Undertaking in terms of this Article, his or her service with the Authority shall be treated as continuous service with the National Electricity Undertaking to which he or she is transferred for the purposes of determining any issue relating to his or her conditions of employment and where the employee was immediately before his or her transfer, serving a period of notice of discharge, resignation or retirement, which period of notice expires after his or her transfer, that notice shall be treated as if it had been given by or to the National Electricity Undertaking concerned;
 - (b) the conditions of employment applicable to any employee of the Authority immediately after his or her transfer to the employment of a National Electricity Undertaking shall, when taken as a whole, be no less favourable than the conditions of employment, taken as a whole, that were applicable to him or her before his or her transfer.

ARTICLE 30

The Contracting States undertake to—

- (a) distribute the assets of Central African Power Corporation on the basis of the general principle that immovable assets in the territory of each State will be allocated to the National Electricity Undertaking of such State and other assets will be allocated having regard to the responsibilities of the Authority and the respective National Electricity Undertakings;
- (b) carry out the valuation of such assets on the basis of principles and methodologies mutually agreed between the Contracting States; and
- (c) assign or allocate liabilities of the Central African Power Corporation to each State, the Authority and the respective National Electricity Undertakings, as the case may be, after obtaining consents required in regard thereto.

ARTICLE 31

If, for compelling reasons, and in particular as a result of legislative action by either Contracting State, it should become necessary to modify or supplement the arrangements provided in this Agreement in order to protect the interests of the two Contracting States as established in those arrangements, such modifications or additions shall be agreed on in a spirit of mutual trust and co-operation.

ARTICLE 32

1. In the event of disagreement between the Contracting States with respect to the interpretation of the provisions of this Agreement, the provisions of any legislation enacted under Article 2 or any matter referred to them in terms of sub-article 5 of Article 4, such disagreement shall be referred to an Arbitrator or Board of Arbitrators appointed by the Contracting States. The decision of such Arbitrator or Board of Arbitrators shall be binding on the Contracting States.
2. In the event of a disagreement arising between the Contracting States over any other question or matter arising from this Agreement, such disagreement may, if the two States agree, be referred to an Arbitrator or Board of Arbitrators appointed by the Contracting States. The decision of such Arbitrator or Board of Arbitrators shall be binding on the Contracting States.
3. The costs of any arbitration under this Article shall be borne equally by the two States.

ARTICLE 33

Notwithstanding the date of signature and the dates of exchange of instruments of ratification, this Agreement shall enter into force on the date of commencement of the new legislation referred to in sub-article 2 (b) of Article 2, which legislation shall come into operation simultaneously within the respective jurisdictions of the two States.

IN WITNESS WHEREOF, THE undersigned, duly authorized thereto by their respective Governments, have signed this Agreement.

DONE at Harare this 28th day of July, 1987, in two originals, in the English language, both texts being equally authentic.

<p>HON. K. M. KANGAI, M.P. Minister of Energy and Water Resources and Development</p>	<p>HON. GENERAL G. K. CHINKULI, DFS, M.P., Minister of Power, Transport and Communi- cations</p>
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*For the Government of the
Republic of Zimbabwe*

*For the Government of the
Republic of Zambia*

ANNEXURE I (Article 22)

WORKING ARRANGEMENTS FOR THE OPERATION AND MAINTENANCE OF THE INTERCONNECTED SYSTEMS

1. Joint ZESA/ZESCO control will be established so as to ensure the efficient operation and maintenance of the interconnected systems and to maintain supply within the statutory limits of voltage and frequency in the two States.
2. To give effect to the joint ZESA/ZESCO control, a Joint Technical Committee with equal representation from ZESA and ZESCO shall be established. The Joint Technical Committee shall supervise the implementation of these working arrangements and in that connection, may, in the interest of the efficient operation of interconnected systems, issue general guidelines to be complied with by the National Control Centres (hereinafter called "the NCC's") of the two Undertakings.
3. The Joint Technical Committee shall meet regularly to review the implementation process and initiate or co-ordinate any joint studies, tests, etc, undertaken in the interest of the efficient operation of the interconnected systems.
4. Subject to paragraph 5, the following guidelines shall apply in giving effect to the working arrangements:—

- (i) *Frequency Control*

ZESA and ZESCO NCCs will consult each other and agree on the expected load and station loading patterns each week for the week following. ZESA NCC will issue operating instructions on a day to day basis to stations in Zimbabwe as will ZESCO NCC in Zambia. Minute by minute frequency control will be done by Kafue Gorge or Kariba South depending on which station is agreed to be on the best position to do so.

The time error should not exceed plus or minus 10 seconds.

- (ii) *Voltage Control*

Voltage Control is the joint responsibility of the two NCC's and shall be carried out in close mutual liaison.

- (iii) *Spinning Reserve*

Spinning reserve shall be agreed to annually but will not be less than the capacity of the largest unit on the interconnected systems. The spinning reserve will be shared in the ratio of the largest generator units in each country. The speed droop governor characteristics will be adjusted to ensure the required response.

- (iv) *Reserve Capacity*

Each Undertaking will be responsible for providing its own reserve operating capacity.

- (v) *Load Shedding And Restoration of Supply*

During emergencies which require load shedding, the request to shed load shall be initiated by the NCC in whose country the disturbance has originated in accor-

dance with agreed procedures. The load will be shed in the approximate proportion of the respective system maximum demand in each country.

(vi) *Generation Plant And Line Outages*

ZESA and ZESCO will agree on an annual plant and line outages programme for the interconnected systems. The two NCC's will maintain close co-operation on outages. In particular, generation plant and line outage will not be implemented without prior agreement.

(vii) *Tests*

ZESA and ZESCO agree not to introduce changes on present system characteristics, e.g. governor droop settings or protection relay settings, in the generating stations and on the 330kV system, until agreement to any changes is reached.

(viii) *Safety Rules and Procedures*

ZESA and ZESCO will continue the present practice on Safety Rules and Procedures (covering the 330kV and 11kV interconnectors between the two systems). These procedures will be a subject of Systems Operations Memoranda.

(ix) *ZESA/ZESCO System Operation Memoranda*

ZESA/ZESCO will each produce their own System Operations Memoranda. Where it is agreed that Joint System Operations Memoranda are necessary, these will be jointly produced.

(x) *Load Flow Diagrams*

ZESA and ZESCO will separately, but simultaneously by arrangement, carry out load flow surveys for the Zimbabwe and Zambia 330kV systems respectively. The surveys will normally be carried out on a routine monthly basis over a peak period, the date to be decided mutually. Each NCC will also be responsible for producing its own load flow survey to cover and record abnormal operating conditions affecting the load flow distribution of the system. Copies of load flow diagrams will be exchanged between ZESA and ZESCO as soon as possible after their completion.

(xi) *Exchange of Information*

ZESA/ZESCO shall exchange information of common interest related to the interconnected systems, as agreed by the Joint Technical Committee.

5. ZESA and ZESCO shall, from time to time, review the appropriateness of these arrangements and may, where they consider it desirable in the interests of the efficient operation of the interconnected systems to do so, amend or repeal and replace the working arrangements.
6. In the event of any dispute over the interpretation or implementation of these working arrangements, the dispute shall be referred to the Council for resolution.

ANNEXURE I (Article 23)

WORKING ARRANGEMENTS FOR THE SHARING OF ENERGY FROM
KARIBA DAM

1. The available energy shall be shared in the form of the water that is forecast to be available for the production of energy within each period of twelve months, commencing on the 1st August of each year.
2. The Authority shall, at the commencement of each period of twelve months referred to above, submit a written statement to ZESA and ZESCO advising them of the amount of water it forecasts will be available for the production of energy during that period. The written statement shall show in summary how the Authority arrived at its forecast, and that forecast shall be reviewed every three months in the light of current hydrological predictions.
3. The existing maximum and minimum operating levels of 408.5m. and 475.5m. (Kariba datum) for the reservoir are set as the limiting operating levels for the purposes of these working arrangements.
4. In determining the amount of water that the Authority forecasts to be available for the production of energy in a given period, the Authority shall take into account the next but one rainy season (i.e. the period of eighteen months as from the 1st August of the period concerned).
5. For the purposes of determining the equal apportionments of water to be shared, the generated energy from the Dam will be converted to water in accordance with the average daily generation related to an agreed typical load/efficiency curve for each of the generating stations, taking into account their turbine conversion efficiency.
6. If either country foresees that it is unlikely to use a portion of its full annual water allocation, it may offer such portion to the other country for the latter's utilization at rates to be agreed from time to time in import/export tariff agreements. If the annually allocated water is not utilized it will be forfeited.
7. In the spirit of acquiring maximum benefit for the two States, the Kariba generating schemes shall, as much as is reasonably practicable, be operated in conjunction with the other generating schemes (e.g. Hwange, Kafue Gorge and any other future schemes). The resulting transfer of energy from one scheme to the other will be chargeable at rates to be agreed from time to time through electricity import/export tariff agreements.
8. In the event of any dispute over the interpretation or implementation of these working arrangements, the dispute shall be referred to the Council for resolution.