

1924

KENYA

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8 MAR 24

Rep. Geo
C. Graham

Coop. y 16 Feb. 1924
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DATE

REGULATION

Withycombe

423

It is recommended
that the
Kilimanjaro

U.S. of S.

U.S. of S.

Secretary of State

stands in favor of the
proposed changes in the
Kilimanjaro

Previous Paper

MINUTES

82
46352
23

The subject of this is that Kenya
Mr. Withycombe to either Messrs. Cook, Fryman
or Messrs. Bruce, Andrews & Lister. They have
some grounds for this because he recommended
certain reductions in proposed charges, which
the East African Service and Lighting Company
has partially agreed to (only of previous
draft), whereas the two firms of transmitting
Messrs. Withycombe and Fryman had recommended
that the proposed charges be accepted (only
of 1st enclosure 43784-23)

110

Subsequent Paper

4634959

All are agreed that the railway
should not build its own power station

and apparently Mr. Felling
proposes now to negotiate the
contract with the company
subject to the advice of Mr.
Withycombe. I do not think
we need object although the two
firms of Consulting Engineers will
not like it, and I do not
think we need approve as no
approval is asked for.

? Copy despatch and enclosure
to C.A. for info L.F.

JH
11.3.24

WCS 11.3.24

at once

KENYA.

NO. 33.

CONFIDENTIAL.



2/c
GOVERNMENT HOUSE,

NAIROBI,

KENYA 1973

11149

February, 1924.

Sir,

As referred in the 2nd paragraph of
the 7th
Memorandum by the
Zanzibar, in
electric power to

being upon this may be given by Mr. Withycombe
Manager of the Uganda Railway has succeeded
in obtaining from the Company a reduction in the rate
charged for lighting of the pier and sheds from
50 cents to 40 cents per unit and of the rate to be
charged for lighting of the piers from 1/-
to 75 Cents per unit.

3. An expression of appreciation for the assist-
ance rendered to this Government by Mr. Withycombe has
been conveyed to the Resident at Zanzibar.

4. I may add that before any Contract was entered
into with the East African Power and Light Company
the draft agreement as finally revised was submitted
to the Director of Railways and Electricity, Zanzibar,
for review.

I have the honour to be,
Sir,
Your most obedient, humble servant,

W. Kenham

GOVERNOR'S DEPUTY.

THE RIGHT HONOURABLE

J. H. THOMAS, P.C., M.P.,

SECRETARY OF STATE FOR THE COLONIES,

DOWNING STREET,

LONDON, S. W.

SUPPLY OF ELECTRICAL POWER FOR ILLUMINATING SHOPS.

The proposed system of charging for Electrical Energy, via:- the Maximum Kilo-volt-ampere Demand, plus a Flat rate per Unit for the total Units consumed for Power, is a scientific and very fair system of charging for Electrical Energy, and has been adopted in Great Britain and other countries to a large extent, some of the more important examples being:-

Supply Authority	Power		Lighting per Unit.
	Per K.W. or K.V.A.	Per Period	
Manchester	£.3 (Plus HP-)	Quarter	1d
Liverpool	£.1.10	"	0.4d
Leeds	£.4.5	"	0.4d
Londonderry	£.1.10	"	1d
Belfast	£.3.10	½ Year	2d
Cardiff	£.6.5	Year	1d
Battersea	£.4.0	"	1d x 50%
Gravesend	£.10.10	"	2d
Maidstone	£.8.0	"	1d
Metro: Elec: Supply	£.8.0	"	2d
Newcastle-u-Lyme.	£.6.0	"	1d
Didham	£.2.10	"	0.5 x 50%
Salisbury	£.3.0	"	1d
Silverhampton	£.6.0	"	1d

These charges are chiefly based on the supply of Electrical Energy to Loads of a fairly steady nature, of long duration, and confined to a certain period of the 24 hrs. that is between

The crane was fitted with:-

Hoisting Gear:- Single reduction driven by a Slow speed Series Motor 50 H.P. 240 Volts.

Blowing Motor:- Driven by 10 H.P. Motor 240 Volts.

The Cycle of operations consisted into-

1. Lifting the Load 20 ft.
2. Blowing The Load abeam through 100 deg.
3. Lowering the Load 10 ft.
4. Raising empty bucket 10 ft.
5. Blowing Empty bucket abeam through 100 deg.
6. Lowering bucket 20 ft.

Approximate weight of bucket 200 lbs.

The efficiency of this crane is considerably high, averaging 76%, further, the trials only lasted 9 hrs, could the trials have been extended over a period of twelve months it is very certain that the figure would be much lower.

In actual practice an overall efficiency of 60% is a fair figure.

Therefore at 76% efficiency the average consumption per 1000 tons handled is 79.5 B.O.T. Units, so that at 60% efficiency it would be $\frac{79.5 \times 76}{60} = 99.5$, and after making allowance for various types of drivers, and the unloading of long steel rails etc, it would be quite sound to place the consumption per 1000 tons handled at 100 B.O.T. Units. The consumption of the two Cranes in the Zanzibar Customs last year was 5,700 Units and the Cargo handled 77,000 tons or .125 per ton or 125 Units per 1000 tons. These Cranes are worn in parts and were working under somewhat inefficient conditions.

200,000 tons @ 100 B.O.T. Units per 1000 ton = $\frac{200,000 \times 100}{1000} = 20,000$ Units
Estimating that the 1-ton Cranes in the Sheds will handle 3.5% of the total = 100,000 tons.

$$\frac{100,000 \times 100}{1000} = 10,000 \text{ Units}$$

$$20,000 + 10,000 = 30,000 \text{ Units. Total.}$$

The lighting load will be different as on account of the non inductive nature of this load the Power Factor should approach unity or say 0.90 and a proportion of the lights will be burning over a considerable number of hours giving the supply station a steady demand. In all cases of the Max K.V.A. system of supply the charge per Unit is relatively nominal. I therefore think that the proposed charge of seven pence too high. I suggest that the Uganda Railway should endeavour to get this figure reduced to five pence, this could bring the cost per Unit, including the Max K.V.A. of 24, to 6.52 pence per Unit, and this I consider would be fair.

The information concerning the supply of current to the Uganda Railway Officers' Bungalows is insufficient for me to criticise the proposed charge of 12 Annas, as the price to the General Public is not stated, but if this charge is compared to the cost of Domestic Supply in Zanzibar, which will be -/8d per Unit as from January 1st next it would seem to be very high, if it is meant to be a preferential rate.

There can be no doubt that the installation of a Power Station by the Uganda Railway for the supply of electricity to the Kilindini Pier would be uneconomical when a supply from a private source is available; always assuming that the supply undertaking is thoroughly sound both technically and financially, and that the continuity of the supply is guaranteed by powers vested in the Government or Local Authority.

To conclude this portion of my report I will summarise my advice.

1. That current be purchased from the Company and that the question of separate Power Station shall not be considered.
2. That the system and proposed charges for current for the Cranes and other lifting apparatus be accepted.

I attach my report on the Supply of Power to the Kilindini Wharf. I should like an opportunity of going more fully into the work of installation at a later date.

I have read the reports of the two Consulting Engineers. It will be seen that my estimates for current consumption vary from theirs to a considerable degree, but the three reports all agree upon the main point, i.e., that power should be purchased from the Company and that the construction of a separate Power Station for the supply shall not be considered.

I trust that my Report is not too laboursome but I have been at some pains to explain the necessity of the Max. K. V. A. system of charging, seeing that the report is for laymen, as opposed to Electrical Engineers.

Sd. R. JITHOONKE.

Director of Railway and Electricity
Department.

Zanzibar, 1st December, 1923.