

## SCHEDULE 1: Project Description

This Schedule confirms the agreed Project Description which comprises of two parts: (a) The new transmission elements that the Project Company shall be establishing for augmentation of the National Transmission grid of Kenya (the “Primary Description”), and (b) the modification/alterations, as proposed by KETRACO, of the existing transmission system of KETRACO/KPLC for overall improvement of the Kenyan grid (the “Additional Description”).

### 1. Description of the Project

- **Primary Description: Augmentation of the National Transmission Grid of Kenya**

The works covered under this header: (a) are part of the Total Project Costs for the Project; (b) shall be considered as the basis of the Project Availability assessments; and (c) for which the Project Company shall take up O&M responsibilities.

- **Project Line: Lessos–Loosuk Transmission Project:**

#### i. Transmission Lines

- Lessos–Loosuk 400kV Double Circuit (D/C) Line with Twin Moose conductor configuration;
- Loop-in-Loop-out (LILO) of both circuits of the Loiyangalani-Suswa 400kV double circuit line with Triple Condor conductor configuration at Loosuk 400kV switching station.

#### ii. Substations

For the Lessos substation, the Project Description includes the following:

- Establishment of a New 400/220kV Substation at Lessos.
- Fully furnished 400kV switchyard with bays to accommodate termination of the Lessos–Loosuk 400kV D/C line.
- Fully furnished 220kV diameter as an extension to the existing 220kV switchyard with bays to fully accommodate the new 400/220kV Lessos substation.

For the Loosuk substation, the Project Description includes the following:

- Establishment of New 400kV Switching station at Loosuk.
- Fully furnished 400kV switchyard with bays to accommodate termination of i) the Lessos Loosuk 400kV D/C line; ii) the Loosuk–Loiyangalani 400kV D/C line; and iii) the Loosuk–Suswa 400kV D/C line.

- Space provision for future expansion.

### iii. **Connection Points**

#### **The 400kV Double Circuit (D/C) Loosuk-Lessos Transmission Line, associated LILOs, new substations and substations extensions (Project 1):**

- Remote substations for Loosuk substation are 33/400kV Loiyangalani, Gilgil (or Suswa) 400/220kV and Lessos 400/220kV substations. The interconnection points for Loosuk substation will be LILO of existing 400kV Loiyangalani-Gilgil /Suswa double circuit transmission line.
- Remote stations for Lessos substation are Gilgil/Rongai/Olkaria II substations, Loosuk 400kV switch station. The interconnection point for Lessos Substation will be the proposed 400kV Loosuk-Lessos double circuit transmission line.
- The interconnection points for the transmission lines in Project 1 will therefore be the LILO point on existing Loiyangalani-Suswa transmission line, proposed 400kV bays (busbars) at Loosuk and Lessos substations.

## **2. SCADA and Telecommunications Description**

Integration of new substations or extensions in existing substations to the National Control Centre through the central SCADA/ Energy Management System (EMS). The SCADA system shall consist of the Central SCADA System at the National Control Centre, and Substation Automation Systems based at the Substations. Further qualities and functionalities of the proposed system are outlined in Schedule 2 - Specifications and Standards - section 2- Detailed Technical Specifications. *Subsequent to LILO of Loiyangalani-Suswa 400kV D/C Line at Loosuk Sub-station, existing PLCC of one of the 400kV D/C Lines shall be dismantled and shifted and re-erected at Loosuk S/S to establish PLCC communication in the line section.)*

## **3. Additional Description: Modification / Alteration of Existing KETRACO/ KPLC Transmission System**

The transmission works covered under the Additional Scope Description shall be part of the Capital Expenditures Total Project Cost for the Project to be made by the Project Company; however, these shall not be part of “Availability” assessments, nor will the Project Company have responsibility for any O&M activities or O&M obligations in Clause 16 of the Project Agreement for the outlined elements in the Additional Scope during the Operation Period.

## **4. Additional Scope (already agreed) - Cost Considered:**

Fully furnished 220kV diameter as an extension to existing 220kV switchyard with bays equipped with but not limited to circuit breaker, isolators, CT, CVT, wave trap, surge arrester for complete integration to the existing national power grid to accommodate:

- 2 Nos. new 220 kV transformer bays (for 400/220kV transformers in 2.1.1 above).
- 2 Nos. 220 kV bays (for double circuit lines to Kibos and future 220/132kV transformer bays).

220kV line termination works, modifications on the existing 220kV and system integration to the existing grid to include:

- relocation of the 220kV Lessos – Turkwel (now via Solar Farms) circuit from its location in the existing 220kV switchyard to a suitable location on the newly constructed 220kV diameter.
- Termination of one (1) of the 220kV Lessos-Kibos lines at the Lessos substation and modification of the current 220kV bus bar topology (ring topology) to a breaker and a third bus bar topology.

***(Language is changed but scope is aligned with that agreed including additional scope)***

The above scope for this Loosuk - Lessos (Lessos Substation) to include modification/diversion/alteration of existing Transmission and Distribution network segments that are currently located at the project sites and line routes, this will include, but not limited to the following:

- Rerouting/undergrounding Turkwel-Lessos 220kV OHL away from 400kV switchyard
- Rerouting/undergrounding Eldoret-Lessos 132kV OHL away from 220kV and 400kV switchyard.

*Various materials of substation and transmission line components related to a previous project are lying in the land/premises of the Lessos Substation and will need to be relocated ahead of any works being undertaken. The site clearance activities required for the Lessos substation works (including the removal of the existing materials on site originally intended for the 220kV substation works) will be the responsibility of KETRACO.*