Section-4
Support Services & Documentation

TABLE OF CONTENTS

4.1 Support Services 2

4.1.1 Technical Support 2

4.2 Spare Parts 2

4.2.1 Mandatory Spare Parts 2

4.2.2 Recommended Spare Parts List 2

4.3 Miscellaneous Supplies 4

Section – 4

Support Services & Documentation

This section describes the requirements for Contractor-supplied support services and list of documents of the fibre optic cable system. The intent of the support program is to ensure for operation, maintenance and expansion of the system.

4.1 Support Services

Throughout design, implementation, factory testing, and site testing, the Contractor shall supply consulting assistance, as required by the Employer.

4.1.1 Technical Support

Consultation with Contractor's technical support personnel shall be readily available on a short-term/long-term basis to assist the Employer personnel in maintaining OPGW cable & associated items upon expiration of the warranty period. The Contractor shall include in their offer(s), a proposal for ensuring continued technical support as stated above.

4.2 Spare Parts and Test Equipment

The spare parts and test equipment shall be provided for each subsystem as described below.

4.2.1 Mandatory Spare

The mandatory spare BoQ represents the minimum spares the Contractor shall be required to supply.

4.2.2 Recommended Spare Parts List

The bidder shall propose a comprehensive spare parts strategy. The intent of the spare parts strategy is to ensure a readiness against unforeseen cabling system breakdowns, and to carry out replacement maintenance of susceptible or failed components. Consistent with the proposed spare parts strategy, the bidder shall provide a list of “Recommended Spare Parts”, which may be required over and above the spares listed in Mandatory Spare parts list to support the fibre optic cabling system during a one-year period. This list of spares shall be called the "Recommended Spare Parts List".

The Recommended spare parts list shall not be considered for evaluation and shall be included in the final scope of supply. The Bid shall include the following minimum information for the recommended spare parts:

Original manufacturer and part number
Name and Description
Number of units in each set
Total number of sets to be provided

The unit as well as set prices shall be provided in the appropriate Bid Price Schedule.

4.3.1 **Test Equipment** (as required if specified in BoQ)

Mandatory test equipment requirements has been specified in the BoQ. The parameters / features of the mandatory equipments are enumerated in Table 4.1 below:

Table 4.1

S.No.	Test equipment	Parameter
A.	**Test Equipments for OPGW cable**	
1	OTDR (Optical Time Domain Reflectometer) for 1310/1550 nm with laser source.	Equivalent to Anritsu MW9076B1 or better.
2	Optical Attenuators (variable 1310/1550nm).	Equivalent to JDSU OLA55 or better.
3	Optical Power meter (1310/1550nm)	Equivalent to JDSU OLP55 or better
4	Laser Light Source (1310/1550nm)	Equivalent to EXFO FLS300-23BL or better.
5	Optical Talk set.	Equivalent to JDSU OTS55 or better.
6	Optical Fibre Fusion Splicer incl. Fibre cleaver	Equivalent to Sumitomo T-39-SE or better.
7	Calibrated Fibre	
8	Connectorization kit	FIS–FI-0053-FC-INST or equivalent
8	Splice kit	FIS – FI-0053-FF or equivalent
9	Optical test accessory kit including all necessary connectors, adaptors, cables, terminations and other items required for testing	FIS – FI-0053-TS-ST or equivalent

In case the offered make/model of test equipment has multiple options for the parameters, the option of higher range shall be acceptable. The supplied test equipment shall be suitable for use in the high EMI/EMC environment. The Contractor shall submit performance certificate for offered test equipment from at least one customer. The Contractor shall offer only reputed make test equipment such as Acterna (JDSU)/Anritsu/Sumitomo/Agilent/EXFO etc.

4.3 Miscellaneous Supplies

The Contractor shall provide all required consumable and non-consumable supplies necessary to support all installation and test activities through final operational acceptance. However, if there are any problems in the SAT and additional consumables are required, the same shall also be supplied by the Contractor free of cost.

---------- **End of Section-4** ----------