

Policy Guidelines on Creating Facilities of Electric Distribution Lines

1.0 Purpose :

The Purpose of this Policy Guideline is to specify the provision for administration and enforcement of requirements with regard to creating facilities of electric distribution lines in NESCO.

2.0 Scope :

The guidelines set forth under this policy relates to the works to be undertaken for construction of new facilities and augmentation/rehabilitation/conversion of existing facilities. It also outlines the procedures related to cost estimation of works, categorizing works under development scheme and deposit scheme, cost realization against deposit scheme and steps in taking up works.

Irrespective of the category of scheme of works, the ownership of the created facilities shall remain with NESCO and no applicant/consumer shall have any right to obstruct NESCO in providing service connection to others or to take up extension works from the created facilities.

Works under both development scheme and/or deposit scheme that are not technically feasible to be executed due to inaccessibility of line route, low terrain including ditch, ponds, lake etc. unsuitable for standard line construction shall not be considered till such impediments are overcome.

Developed land suitable for installation of substation/RMU, etc., if required for providing electric connection to a particular applicant, shall be provided by the concerned applicant free of cost.

Where standard procedures in erecting poles cannot be maintained in extension of LT line due to narrow roads/lanes or inadequate Right of Way (ROW), LT electric distribution lines may be established using GI pipe or U/G cable or higher size service cable for length covering permissible voltage drop limit.

For service connection, cost of service cable with accessories and meters along with installation and services charges shall be borne by the applicant.

3.0 Work Plan :

(i) In order to meet the electric load demand of existing/new consumers and to cater for the future load growth, NESCO shall take up plans for establishment of new facilities and augmentation/rehabilitation/conversion of existing infrastructure. The works shall be assessed by NESCO's Planning/Design Department and/or consultants appointed by NESCO taking into consideration the existing distribution network and requirements assessed by respective Sales & Distribution Divisions. The Planning & Project Department shall develop the work plan on annual basis based on assessed requirements. The work plan shall be reviewed and updated at least quarterly to include/exclude works against actual requirements. The works planned and proposed for execution shall be categorized under the following schemes, as applicable :

- (i) Development Scheme
- (ii) Deposit Scheme

Proposed works under any of the above schemes shall require approval of the competent authority as mentioned below prior to execution :

Type of work	Approval Limit	Approving Authority
Construction/ renovation/ augmentation/ rehabilitation/ reinforcement of LT Overhead line	2 (two) span or equivalent line length	Executive Engineer (S & D)
	3 (three) span to 5 (Five) span	Superintending Engineer (S&D)
	Six (Six) span to 10 (Ten) span	Chief Engineer (S & D)
Construction/ renovation/ augmentation/ rehabilitation/ reinforcement of HT Overhead line with or without under built line	2 (two) span or equivalent line length	Executive Engineer (Design & Inspection)
	3 (three) span to 5 (Five) span	Superintending Engineer (Design & Inspection)
	5 (Five) span to 10 (Ten) span	Chief Engineer (Services/PLANNING & PROJECT)
	Above 10 span	Executive Director (Engineering)
Installation of push pole, pole straightening, guy wire relocation out rigger installation or similar nature of work etc.	Single	Superintending Engineer (Zone)
	Up to 5	Chief Engineer (PLANNING & PROJECT)
	Above 5	Executive Director (Engineering)
Installation of distribution transformer/ Package type substation after construction of line	Any quantity	Chief Engineer (Services/PLANNING & PROJECT)
Creating of electric distribution facilities in a new Housing Complex	Any quantity	Managing Director
Installation of RMU/ Switchgear/AVR	Any quantity	Executive Director (Engineering)
Installation of 132/33KV, 33/11KV Substation etc.	Any quantity	Managing Director
Construction of new 11KV underground feeder line from substation/switchgear/RMU/ construction of underground service line	Up to 100m	Executive Director (Engineering)
	Above 100m	Managing Director
Construction of 33KV Overhead and Underground source line	Any length	Managing Director
Load Clearance	250 KW to 500 KW	Chief Engineer (PLANNING & PROJECT)
	501 KW to 1000 KW	Executive Director (Engineering)
	1001 KW to 10,000 KW	Managing Director
	Above 10 MW	Power Division, Ministry of MPEMR with recommendation of Board.

3.1 Development Scheme :

Development scheme is the scheme under which all infrastructure will be constructed by NESCO.

- Development scheme shall include the works for which all related costs shall be borne by NESCO.
- Works under development scheme shall cover the following areas:

- (i) Establishment of LT electric lines upto 4 (four) span or equivalent line length considered as first priority while those beyond 4 (four) span or equivalent line length considered as next priority in the current development scheme or in the subsequent annual development scheme.
 - (ii) Establishment of all HT electric lines upto 2 (two) span or equivalent length considered in the current development scheme, while those beyond 4(four) span or equivalent line length considered in the subsequent annual development scheme.
 - (iii) Small scale works of relocation/shifting of existing facilities necessitated in public interest.
 - (iv) Extension/rehabilitation/conversion of distribution lines within a registered housing estate upto 02 (two) span or equivalent line length for HT line and/or up to 04 (four) span or equivalent line length for LT line from existing facilities that have been handed over to NESCO.
- (c) Planning & Project/ Design & Inspection Department shall maintain separate work lists as stated below. The lists shall be updated at regular intervals.

1 st priority list	Works limited upto 4 (four) span or equivalent line length under current development scheme
2 nd priority list	Works covering more than 4 (four) span or equivalent line length under current development scheme
3 rd priority list	Works for consideration in next annual development plan.

- (d) Should any applicant be incapable or express his/her unwillingness to bear the cost of works under deposit scheme, the case shall be in pending till such works be included in the serial list of the annual development plan. Any claim to prioritize the work shall however fall under the deposit scheme.

3.2 **Deposit scheme :**

Deposit scheme is the scheme under which infrastructure will be constructed upon payment by the applicant.

- (a) Deposit scheme shall include the works for which an applicant shall be required to pay NESCO in full or in part the costs in accordance with provisions set forth in Clause5.0
- (b) PLANNING & PROJECT/ Design & Inspection Department shall maintain a list of works under deposit scheme in serial order.
- (c) Works under deposit scheme shall cover the following areas :
 - (i) Works not included in the Development Scheme but requires early execution as per demand of an applicant.
 - (ii) Works listed in the Development Scheme but serial to be broken to prioritize job against the applicant's demand.
 - (iii) Construction of electric distribution line, within registered housing estate, not included in the development scheme.
 - (iv) Works for establishing dedicated line for an applicant.
 - (v) Works for relocation/shifting of existing facilities taken up against specific projects of authorities like any City Corporation, Pouroshova, RHD, LGED, Municipalities, etc.

- (vi) Relocation/shifting of existing facilities for convenience of an applicant provided it is technically feasible and/or does not create any obstruction/difficulties to others.
 - (vii) Works for establishing temporary electric service connection to be made permanent at the end of the temporary connection period.
 - (viii) Works for establishing temporary electric service connection to be dismantled at the end of the temporary connection period.
- (d) Should NESCO find impediments in the Right of Way (ROW) clearance or face any external obstruction in execution of works it shall not be liable for completion of the works. Such case shall remain in pending till the impediments are overcome. The applicant shall be required to extend full cooperation to overcome the impediments. If the applicant does not intend to proceed with the works or if impediments are not overcome, he/she shall be reimbursed the unspent portion of the deposited amount upon deduction of 10% (ten percent) amount on the unspent portion.
- (e) The work for construction of electric distribution lines within registered housing estates **will usually be constructed by NESCO. It also** may be executed by the concerned housing authorities under NESCO's supervision at their own arrangement and cost subject to NESCO's prior consent. The drawing, design, specification and cost estimation for such work shall need prior approval of NESCO. On demand, the housing estate authority will require to pay NESCO, in advance, the estimated amount in accordance with sub clause 4(b) (iii).

However, if the existing facilities have not already been handed over to NESCO and if the construction work is required to be taken up by NESCO, the concerned applicant/housing authority will pay NESCO, in advance on demand, the total estimated amount in accordance with 4 (b).

In case the work executed by the housing estate authority have not been handed over to NESCO, it will have the right to refuse in providing any service connection or allowing further extension from the concerned electric distribution line till satisfactory and reliable test results are obtained.

4.0 Cost Estimation for deposit works :

- (a) **Factors considered in cost estimation**
- (i) Line material including pole, pole fittings, conductor, cable and its accessories except distribution transformer.
 - (ii) Substation equipment/Ring Main Unit required in addition to existing facilities.
 - (iii) Installation and Dismantling charges as per approved rate schedule.
 - (iv) Incidental charges.
 - (v) Road Cutting and Repair Charge.

Only the applicable items will be considered in cost estimation.

- (b) **Preparation of cost estimate**

NESCO will prepare a list of materials showing cost of individual item on the basis of average weighted cost and circulate it to all concerned departments/divisions annually. A three member team consisted of

Design, Procurement and finance and consisted by NESCO management will finalize the cost annually. Procurement department may be given the responsibility to circulate the cost list in a regular basis.

- (i) Material cost = 100%
- (ii) Installation cost = 100%
- (iii) Incidental charges =20% on installation cost and Dismantling cost
- (iv) Road Cutting and Repair Charges = As required by authorities like City Corporation, Pouroshova, RHD, LGED, Cantt. Board, Bangladesh Railways or any other Legal Authority.

5.0 Realization of costs against deposit scheme :

On demand, an applicant will require to pay NESCO in advance the estimated applicable amount in accordance with 4 (b) for works under deposit scheme in the following manner:

5(a) (1) Permanent Facility:

For development of permanent facility, cost realization will generally be made as follows:

Nature of work	Work Volume	Cost Realization
Construction of HT/LT line for providing electric service connection to consumer of any category.	Any line length	100% (hundred percent) of cost estimate for the work under consideration.
	In the event of transfer from development scheme to deposit scheme based on applicant's demand, any line length	
Shifting/ conversion of existing line upon demand of an applicant	Any line length	100% (hundred percent) of cost estimate for the work under consideration.

5(a) (2) (i) An applicant must have to provide suitable room for RMU installation within his/her premises, if the total load demand becomes 1000 KW or above. But in case of any technical reason this limit may be reduced to the extent of 500KW. Type of RMU and room size for RMU installation shall be determined by PLANNING & PROJECT/Design & Inspection Department of NESCO.

In such case, the applicant shall however be required to pay NESCO the Total Cost against required cable and RMU installation i.e.(i) Cost of material, (ii) Cost of installation and recovery, (iii) Incidental Charges, (iv) RMU installation Charges, (v) Cost of RMU calculated from the following formula:

$$\text{Payable RMU cost by applicant} = (\text{Cost of RMU}) / (\text{No. of Port of RMU} - 2)$$

(ii) NESCO will provide 1 year warranty for the installed RMU.

- (iii) The applicant shall collect road cutting permission from City Corporation/Pouroshova/RHD/LGED Cantonment Board/Bangladesh Railway as applicable by his own arrangement and cost.
 - (iv) The applicant shall pay total cost of voltage regulator or any equipment and their installation charges for voltage improvement within their premises.Ó
- (b) **Temporary facility: To be permanent after the end of temporary connection.**
- For construction of permanent facilities applicable under deposit scheme: 100% (hundred percent) estimated cost in advance.
- Subject to written undertaking to pay NESCO the estimated amount prior to execution of works of permanent connection, an applicant may however deposit only the charges for installation, dismantling (if any) and supervision in order to create temporary facilities.
- (c) **Temporary facility: To be withdrawn after the end of temporary connection.**
- (i) 10% (ten percent) cost of materials/equipment, except transformer, required for creating facilities to provide service connection, and
 - (ii) 100% (hundred percent) installation charges
 - (iii) 100% (hundred percent) dismantling charges, if any, and
 - (iv) 100% (hundred percent) supervision and services charges.

6.0 Load Clearance/Retention :

6.0 Load Clearance and Load Retention:

- (a) **Load Clearance:** An applicant requires to take load clearance certificate if total load required is 250 KW or above upon availability from the existing system. Validity of such load clearance certificate shall be 3 (three) months from the date of issuance the following steps shall have to be taken in this regard:
- (i) The applicant shall be required to submit application in prescribed form upon payment of application fee of Tk. 1000.00 (Taka one thousand) non refundable.
 - (ii) The applicant shall be required to mention the total load requirement along with the breakup in phases, if applicable.
- (b) **Load Retention:** For advance load clearance/retention requested by an applicant if additional/new facilities need to be created, the load clearance certificate mentioning the targeted load available time may be issued, provided NESCO can ensure availability of the facilities through development or deposit scheme, as applicable. The following steps shall be taken in this regard:
- (i) The applicant shall be required to submit application in prescribed form upon payment of non-refundable application fee of Tk. 1000.00 (Taka one thousand) in favour of NESCO.
 - (ii) The applicant shall be required to mention the total load requirement along with the breakup in phases, if applicable.

- (iii) For the total load clearance period, the applicant shall pay in advance an amount calculated @ Tk.5.00/KW per month against the load demand as per the load breakup.
- (c) The load clearance/retention certificate shall remain valid till the period specified in the certificate and be considered void upon expiry of the validity period.
- (d) NESCO will dispose the load clearance/retention issue within 15 days from receiving such application.

7.0 Steps in taking up works :

- (i) The Design & Inspection Department and/or its appointed consultants shall carry out detail study and survey to assess the requirement of construction /augmentation/ rehabilitation works and prepare staking sheet, cost estimate along with bill of materials.
- (ii) The S & D Division's and/or its appointed consultants shall carry out detail study and survey to assess the requirement of construction /augmentation /rehabilitation works in the respective S&D Divisions and forward their report Design & Inspection Department mentioning pole no, transformer location with loading condition along with staking sheet, cost estimate and bill of materials for review and finalization.
- (iii) Upon receipt of applications for construction/augmentation/rehabilitation works not included in development scheme, the S & D Divisions upon survey shall forward their report mentioning pole no, transformer location with loading condition along with staking sheet, cost estimate and bill of materials to Design & Inspection Department for review and finalization.
- (iv) With regard to clause-7 (iii), the applicants shall be required to submit the applications upon payment of prescribed fees (BDT 1000) to the respective S&D Division stating their requirement.
- (v) Applications for major construction/augmentation/rehabilitation works not included in the development scheme may be submitted upon payment of prescribed fees directly to the office of Design & Inspection Department stating the applicant's requirement.
- (vi) Upon final assessment of requirements for construction/augmentation/ rehabilitation works against clause 7 (i), (ii), (iii) & (v) the Design & Inspection Department shall categorize the respective works under development scheme and deposit scheme, as deemed appropriate, and forward the cases for review and approval of the competent authority.
- (vii) Upon approval of proposed construction/ augmentation/rehabilitation works, the Design & Inspection Department shall prepare separate lists of job orders for development scheme and deposit scheme and update the same on regular basis.
- (viii) Upon approval of jobs under development scheme, the PLANNING & PROJECT Department shall issue Job orders to contractors for construction/augmentation/ rehabilitation works in serial order in respective work areas. The appointment of Contractors, The Role of Contractors and how work will be assigned is discussed in article 8.

- (ix) Upon approval of a job under deposit scheme, Design & Inspection Department will request the applicant in writing to deposit the estimated amount to NESCO within a specific period.
- (x) Upon the applicants' payment of the estimated amount to NESCO against deposit scheme, the respective job orders shall be issued to contractors for construction/ augmentation/rehabilitation works.
- (xi) Upon completion of works against job orders issued to contractors, the PLANNING & PROJECT Department shall inform the concerned S&D Division for subsequent necessary actions in providing service connection to the applicants' premises, as applicable.

8.0 Apoinment of Contractors :

- (i) NESCO will follow the centralized procurement policy. All Overhead Line Construction Contractors will be appointed by the Procurement Department for certain time period as decided by NESCO management.
- (ii) Overhead Line Construction Contractors will be selected by OTM/LTM method. The number of contractors for each S&D/Circle/Zone will be finalized by NESCO Management.
- (iii) Overhead Line Construction Contractors will work under the supervision of Planning & Project Department.
- (iv) As per clause (x) of article 7, upon the applicants' payment of the estimated amount to NESCO against deposit scheme, the respective job orders shall be issued to contractors for construction/ augmentation/rehabilitation works by the Planning & Project Department. The job order for development work will also be issued following the same.
- (v) The contractor may submit any bill after submission of as built drawing and after the clearance from the joint inspection team formed by Design & Inspection, Planning & Project and concerned S&D team members.
- (vi) Procurement department will take initiative so that all equipment related to Overhead Line Construction works is available at NESCO stores so that there is minimum time delay for executing the work. In this regard Procurement department will do the material planning at the beginning of every year.
- (vii) After having the issued job, contractor will collect all required material from designated NESCO stores. It is mentioned that the list of all required materials and the list of recovery materials will be mentioned in the file. The contractor will take requisition from the Planning & Project Department and submit it to NESCO store for the required material.
- (viii) The contractor will have to give back all the recovery materials to NESCO store before submission of any bill.
- (ix) For small scale work that will be done by the S&D or Circle office may request the Planning & Project Department to appointment a contractor to finish the job.

9.0 Other Recommendations :

- (i) There is no set guideline by NESCO for using Service Drop for new connection. As a result consumers are using different type of service drops as per their own choice or as per direction by the middle man. Low grade cable is a major contributor to line loss as it is inversely proportional to the square of the cross-sectional area of the conductor. In this regard NESCO may provide the service cable to the new consumers depending upon its load demand.