Guidelines for Consumer Awareness to do initial preparation for getting Electrical Connection

1. Type of Meters being installed by BSES according to different load conditions

Consumers planning for connection are advised to first plan for the Load requirement in their premise. BSES installs following types of Meters under different load conditions. Space requirement for different type of meters is different.

TYPE OF METER FOR DIFFERENT LOAD CONDITIONS			
Sr. No.	**LOAD (kW)**	**DOMESTIC CONSUMER**	**NON DOMESTIC CONSUMER**
1	1 to 10 kW	Single Phase	Single Phase
2	11 to 44 kW	Three Phase	Three Phase
3	45 to 100 kW	LTCT	LTCT
4	101 to 200 kW	Optional LTCT/HT	Optional LTCT/HT
5	>200 kW	HT	HT

2. Plan for Overhead / Underground Connection

Consumers planning for connection are also advised to plan for type of connection, i.e., Overhead or Underground. Consumers are advised to fulfill following requirements in advance for speeding up the connection (Refer Photographs 1 & 2 for Overhead & Underground connections).

Type of connection	Connection source	Requirements
Overhead connection	Pole (On Same side of the Road)	Angle Iron Support for Overhead Cable
Underground connection	Pole (If Road Crossing required)	HDPE PIPE for laying Underground Cable
Underground connection	Feeder Pillar	HDPE PIPE for laying Underground Cable

Note: For details on preparation of Underground Service Cable laying, refer Clause No. 4

3. Criteria for Location of Meter Installation (Ref. Photograph 1 & Photograph 2 at end of Document)

One premise should have only one place for meter installation. Consumers are advised to keep the Meter accessible in simplest manner to BSES staff for convenient Meter reading, Maintenance & Safety reasons.

Consumers shall therefore plan in advance for Meter Installation location at their premises during construction. While doing so, it is advised to follow "Single door policy" & identify location:

TYPE OF PREMISES	PREFERRED LOCATION OF METER INSTALLATION	PREFERRED Height OF METER INSTALLATION
Individual House	Outermost Wall	Avg. Height of 5.5 ft. for ease of Meter reading & safety purposes
Apartments / Multi Floor	Common Entrance	
Farm House	Outer most front wall / Boundary wall or max. 20m accessible distance from outermost wall to nearest Pole/Feeder pillar	
Institutes	Max. 30m from Entrance at accessible location	

In aforesaid cases, a Short distance of 20-30m ensures that supply can be provided using shortest service cable to avoid voltage drop.

In case of apartments, it is advisable to have a common place for Meter installation. Total Space requirement for meter installation depends on following parameters:

a. Total Number of Meters to be installed in the premise.
b. Type of Meters to be installed (depends upon sanctioned load).
c. Space required for installation of Consumer panel with Main Switches (MCB/MCCB/ELCB)

Panel size for individual meter installation in consumer panel			
Meter	**Height (inch)**	**Width (inch)**	**Depth (inch)**
1 Ph	14	12	7
3 Ph	20	16	9
CT	48	36	12

If consumer is installing panels for multiple meters installation, standard panel sizes should be of following sizes for 1 phase, 3 phase & CT meters (single meter size) respectively. (However, there is no mandatory requirement of panels for installation of meters as Meter Boxes & Bus bars can be mounted on wall with the help of screws and fasteners).

Note: If load/area of the premises exceeds a certain value, there may be additional space requirement by BSES for Electrical services. For details, please refer to ANNEXURE-I (DERC Guidelines for additional space to be provided by the consumer).

4. Preparation for underground service cable

- For underground connections, it is advised to provide safe underground piping using HDPE pipes to accommodate cable from Feeder Pillar to Meter.
- It is advisable, if Pole or Feeder Pillar is on opposite side of road in front of consumer premises, HDPE underground safety pipes should be laid in advance along with water supply lines at the time of construction. This will avoid road cutting etc. in future and quicken electric supply connection procedure.
- As an economical measure it is advisable that consumer can share his connection pipeline with neighbor directly proportional to cable sizes.
- It is advisable that while selecting pipes for underground cables, select pipe sizes considering future load enhancements also. Relevant pipe sizes which may be used for different cable sizes are proposed in table below:

Pipe Sizes for Laying of Underground Cables		
Load	**Cable Size (Sq.mm.)**	**Proposed Pipe Size Dia (mm)**
Up to 5 KW	2 x 10	30
6-10 KW	2 x 25	36
11-20 KW	4 x 25	40
21-50 KW	4 x 50	45
51-99 KW	4 x 150	65
100-140 KW	4 x 300	90

5. Some Special Guidelines related to Temporary Connections

- Consumers are advised to take temporary connection at same location where they want permanent connection later on. This will quicken the process later on.
- It is advised that in case of Temporary connection, Meter may be installed by BSES at Pole in the absence of proper location at premise.

6. Safety Guidelines

- It is advisable that Consumer panels are not made of wood & they do not have locks, however they may have latching arrangement & space for Sealing so that BSES may seal those panels. However no sealing is required in case of Prefitted meters installed in consumer panels. Panel Bus Bar doors shall also have provision for sealing.
- Consumers are also advised to keep any open drainage or rain water discharge pipe away from meter installation location, to avoid dampness.
- It is advised that Consumer Panel MCB must have voltage indicator.
- In order to avoid fire hazards, it is advised that Metering point should not be below any stair case, toilets etc. or near any inflammable objects, or in congested spaces
- It is advised to install MS-Angles (of suitable strength), permanently fixed with wall of consumer's premise at 12 to 15 feet height from road level at the time of construction, to support over head service cables.

ANNEXURE-1

DERC GUIDELINES FOR ADDITONAL SPACE TO BE PROVIDED BY THE CONSUMER

Space for Installation of Grid sub-station, transformers, service line, meter and other equipment under Regulation 22 of DERC Supply Code Regulations states that:

The developer/applicant(consumer) taking supply at Low Tension level for any premises or for re-constructed premises, requiring LT Service connections whose:	(i) total cumulative demand of all floors in the plot/ building for LT service connection exceeds 100 kW/108 kVA; or (ii) total cumulative built up area of the premises in the plot/building exceeds 1000 sqm; or (iii) plot of size above 500 sqm or above;
shall provide the space for installation of distribution transformers, as per the required load:	Provided that the minimum space required to be provided by the developer/applicant for installation of distribution transformers/ equipment shall be as per circular no. South DMC/0148/SE(B)HQ/Addl. ComI/17 dated 30.03.2017 notified by South Delhi Municipal Corporation or as amended from time to time, annexed at Schedule I:
Provided further that the existing consumer shall also be required to provide the space as above, in the event of:	(I) enhancement of existing load on account of additional construction in the premises and consequently the total built up area exceeds 1000 sqm of the plot/building or their total LT Service connections demand exceeds 100 kW/108 kVA; or (ii) enhancement of load based on maximum demand readings for the electricity connections energized on or after 1.9.2017 and the total LT Service connections demand exceeds 100 kW/108 kVA; Page 10 of 58
Provided also that if the required space is not provided by the applicant or the developer, the distribution Licensee may refuse the grant of additional load: Provided also that the consumer taking supply at LT voltage level, irrespective of its sanctioned load or the contract demand as the case may be, shall also provide the space to the licensee for installation of meter, and part of service line up to the point of supply, to the extent that would fall within his premises	[Explanation: For the purpose of this sub-clause, the built-up area shall be as specified in the plan approved by the authorized agencies. In case, built-up area is not specified in the approved plan, the built-up area shall be taken as the carpet area plus the thickness of outer walls and the balcony]

Please Note :*The cost incurred for acquisition of space including the annual license fee if any shall be borne by the developer or the applicant.*

Grid Space(For LT/HT >1 MVA - in case load not feasible from Existing grids)		
S No	**Sub Station Type**	**Size(Meters)**
(I)	Air-Insulated Sub-Station-66/11 kv Grid Substation with 2PTR	80Mx60M
(II)	Air-Insulated Sub-Station-66/11 kv Grid Substation with 3PTR	90Mx80M
(III)	Air-Insulated Sub-Station-33/11 kv Grid Substation with 2PTR	45Mx35M
(IV)	Gas Insulated Sub-Station-66/11 kv or 33/11KV	50Mx30M

Developer / Applicant (s) at LT with > 100KW/108 KVA, build up area >1000 sq m or plot size above 500sq m

S. No	Total Construction Area (Sq m)	Calculated load as per construction area (KW)	Space requirement for utility (LxW)in Meters	Minimum Space requirement for applicant (LxW) in case of HT / Utility in case of electrification	Total Space for Electrical Services building plan (Sq M)
1	Construction area is as per applied / approval bldg plan	100-200	4 X 5.3		21
2		201-800	6 X 3	4 X 5.3	39
3		801-1500	6 X 3	2 * (4 X 5.3)	60
4		1501-2200	6 X 3	3 * (4 X 5.3)	82
5		2201-2900	6 X 3	4 * (4 X 5.3)	103
6		2901-3500	6 X 3	5 * (4 X 5.3)	124
7		>3500	Application to approach utility for approval of space & layout		

ANNEXURE-2

Guidelines for Consumer House / Internal wiring

It is advised that work of wiring at the premises of the consumer must conform to the standards notified in Central Electricity Authority (Measures relating to Safety & Electric supply Regulations, 2010 and amendments thereof)
It is advised that Consumer needs to ensure completion of internal wiring of the premise up to main switch.
It is advised that all earthing connection to be terminated near main switch so that it can be easily connected to BSES Earth / Premise Earth Pit.
In order to improve safety against electrical shocks and faults, consumers are advised to dig two earthing pits during construction of their new house/apartment and ensure earthing of their panels at place where meters have to be installed.
BSES suggest that separate neutral wire shall be laid for different portions of a premise. There should not be any looping of neutral wire of different meters for accurate recording of energy consumption.
For information, all multi-storied buildings, having a height of more than 15 meters from ground level shall also comply with Clause 36 of the Central Electricity Authority (Measures relating to Safety & Electric supply Regulations, 2010 & amendments thereof).
For information, Wiring to be tested as per provisions of Clause 31 of the Central Electricity Authority (Measures relating to Safety & Electric supply) Regulations, 2010 & amendments thereof.
All consumers, irrespective of the sanctioned load, are advised to install a main switch (MCB / MCCB) & safety device for earth leakage protection, otherwise BSES reserves right to not energize the connection until ELCB is installed (or MCB in case of panel).
It is advised that consumer may install panels / enclosures for Installation of MCB/MCCB and ELCB.
It is advised that for simplicity and safety, distance between main switch and meter should not be more that one meter.
Consumer shall provide suitable, adequate & safe space/wall away from stair case & escape route for installation of meter in line with Regulation 29 of DERC Supply code 2017.In case of meter installation in stilt area, the consumer shall be liable to provide a separate meter room with sufficient space for meter reading & maintenance, along with preferable opening on road/or on back lane, if any, before the release of electricity connection, to avoid accidents due to fire & to allow ease in escape in case of any fire incident

Photograph 1:An overview of Electrical connectivity between Pole and Meter at Consumer House

Photograph 2: An overview of Electrical connectivity between Feeder pillar and Consumer panel in Apartments