CONVERGENCE ENERGY SERVICES LIMITED
(A wholly owned subsidiary of Energy Efficiency Services Ltd. (EESL))

INSIGHT2022 SmarterGreenerTogether

Expression of Interest Inviting Demandfor Electric Buses on GrossCost Contracting Basis and/or on Dry Lease Contracting Basis

Call for Proposals from STUs

Issued By

CONVERGENCE ENERGY SERVICES LIMITED
(A Wholly Owned Subsidiary of EESL)
(NFL Building, 2nd Floor, Core – III
SCOPE Complex, Lodhi Road,
New Delhi-110003)

Issued date : 6th April 2023

NATIONAL ELECTRIC BUS PROGRAM, INDIA

Expression of Interest – Number II.

Inviting Demand for Electric Buses on a Gross Cost Contracting (GCC) or Dry Lease Contracting Basis

1. Background

Convergence Energy Services Limited (CESL) is a wholly owned subsidiary of Energy Efficiency Services Limited (EESL) under the administration of the Ministry of Power, Government of India, Headquartered at New Delhi, has been assigned to procure electric buses (e-buses) under the National Electric Bus Program (NEBP) after the success of the Grand Challenge (GC) under FAME India Scheme Phase-II, whereby demand was aggregated for 5,450 e-buses in India across five cities. The GC tender discovered the lowest bid rates for e-bus operations in Indian cities, the rates discovered are about 31% less than diesel buses and about 18% less than CNG buses without subsidy. This was achieved by aggregating the demand and floating a unified tender with standardized parameters and contract terms.

Based on this outcome, CESL has been requested by NITI Aayog and MoRTH to scale up the model and to play the role of the program manager to deploy 50,000 electric vehicles under NEBP. The NEBP will seek to aggregate demand from bus transport agencies and conduct tendering on an aggregated basis. CESL will also assist authorities/STUs in creation of upstream infrastructure to operate 50,000 e-buses in a phased manner. Under this program, CESL has floated two tenders for deployment of e-buses.

First tender was concluded to deploy aggregated demand of 6,465 e-buses across 6 Indian states/cities in 8 different lot sizes on GCC/ wet lease model. This phase of tendering targeted intracity (5,315 e-buses), mofussil (200 e-buses), and intercity (950 e-buses) operations. The prices discovered under this tender are 24% lower than diesel and 19% lower than compressed natural gas (CNG) counterparts. Prices discovered under this tender do not include any subsidies.

Second tender was floated to deploy aggregated demand of 4,675 e-buses on a dry lease model (providing services without a crew – driver and conductor), across three states which is currently live. Under the dry lease model, the e-bus is owned and maintained by the contractor for a predetermined monthly fee during the contract period while the responsibility of operating these e-buses lies with the state transport undertakings (STUs).

Accordingly, CESL is inviting demand for e-buses either on GCC or Dry Lease model via this

Expression of Interest (EoI) from any public state transport undertaking (STU), Transport Corporation, special purpose vehicle, or transport authority engaged in public transport operations. STUs must meet the selection parameters set out in Section-5.

2. Quantity of Buses:

The program facilitates tendering of e-buses and creation of supporting infrastructure to deploy e-buses on Indian roads. The aggregated demand will be tendered out for price discovery by CESL.

3. Contracting Model

This EoI is inviting demand for operating e-buses using the GCC and/or Dry lease contracting models. A brief definition of the two contracting models is as below.

a. Gross Cost Contract (GCC) Model

In the GCC model of procurement, the bus is owned, operated, and maintained by service providers (OEM or a consortium of OEM and bus service providers) for a specific rate and contract period. The Authority pays a pre-decided per km fee (PK Fee) discovered through competitive bidding process to the service provider. The model is adopted under the Grand Challenge tender and the major roles and responsibilities of STU's and bidders are presented in Section 7.

b. Dry Lease Contract Model

In the Dry Lease Contracting Model of procurement, the bus is owned and maintained by contractor/service providers for a specific rate and contract period, the responsibility of operation is with STU's. In this model, the Authority pays a pre-decided monthly per bus fee (PB Fee) discovered through competitive bidding process to the service provider. The major roles and responsibilities of STU's and bidders under the dry lease contract model are presented in Section 7.

4. Tentative Timeline for Administration of NEBP Tenders

Floating of EoI	T0
Aggregation of demand by CESL	T1
Floating of tender to bidders	T2 = T1 + 30 days
Final date of bid submission against tender	T3 = T2 + 45 days
Declaration of results	T4 = T3 + 7 days
Price matching by L2/L3 bidders	T5 = T4 + 7 days
Signing of Concession agreement	T6 = T5 + 30 days

Delivery of homologated prototype	T7 = T6 + 90 days
Delivery of vehicles	As per schedule submitted by STU

5. Participation Parameters of STUs

STU/Authority should provide a favorable ecosystem for bus operators to deploy e-buses such as identifying the dedicated depots, development of infrastructure, providing parking space, tech-enabled depots for real time monitoring etc.

An indicative list of parameters that STUs must account for are given below. Terms already agreed in the Grand Challenge and NEBP Tender-1 will not change.

S. No.	Criteria	Type -I	Type-II (Mofussil)	Type-III (Intercity)
1	Minimum number of buses per STU	150	300	300
2	Minimum buses per depot	50	50	50
3	Annual assured km (Applicable only for GCC)	70,000	1,22,500	1,57,500
4	Contract period	12 years	10 years	10 years
5	Minimum Daily Assured Kms* (Applicable only for GCC)	200	350	450
6	Opportunity charging per day	45 mins	45 mins	60 mins

* Considering 350 days of operation in a year

Charging Infrastructure.

Interested STUs/Authorities should also have the following basic infrastructure for charging infrastructure:

i. In principle approval for establishment of upstream depot covering permissions, land, access, and electrical supply (6/11/22/33/66 KV connection) as per defined standards by the STU/Authority. Please estimate expenditure of 5-6 Cr. for electrical works associated with the charging infrastructure per depot considering 100 e-buses operating in a single depot.

ii. Identification of bus depots with minimum area required for one bus would be around 150 sq. m. including basic depot requirements, such as parking, workshops, staff amenities, administrative block, etc. Provision of land, development of upstream electrical infrastructure should be in the STU/Authority's mandate.

iii. Authority shall provide depot space for minimum of 50 buses per depot, including opportunity charging infrastructure. In case depots are to be shared by more than one contractor, the Authority shall ensure segregated and adequate allocation of space for parking, setting up charging infrastructure and maintenance facilities to the bidders.

Separate metering and/or sub metering for activities of different contractors shall be set up by the Authority. In other words, the Authority shall find a mutually agreeable solution to manage the compliance obligations of all the selected Bidders.

Brief note presenting the SOP for depot preparedness and upstream charging infra requirement is provided as part of Annexure-C for further clarity.

6. Applicable Participation Fees

STU/Authority shall pay to CESL a basic participation fee of INR 10,00,000 through a demand draft/NEFT/RTGS in favour of "Convergence Energy Services Limited". Account details are as under:

Account Name:	**Convergence Energy Services Limited**
Account Number:	**000705051799**
Account type:	**Current**
Bank Name & Branch:	**ICICI Bank, New Delhi Branch**
IFSC Code:	**ICIC0000007**
MICR Code:	**110229002**

Project Management Charges will be levied on the successful bidder – as with the NEBP Tender 1.

7. Key Roles & Responsibilities:

i. CESL's Key Responsibilities:

i. Aggregate demand from STUs/Authorities through Expression of Interest (EoI) subscription

ii. Detailed assessment of technical and commercial preparedness of the recipient cities:

iii. Review existing e-Bus policies and various incentives to promote e-Buses and charging facilities.

iv. Assessment of financial strength of the STUs and ability to make regular payments

v. Assessment of existing owning and operating cost of buses.

vi. Design an appropriate mix of business models: Based on the assessment of various cities, alternative models need to be analyzed including Gross Cost Contract (GCC), Net Cost Contract (NCC), un bundled (bus supply and operation by separate entities) and other

appropriate model(s) to be finalized.

vii. Design of the NEBP program, its rules and allocation methods;

viii. Standardization of parameters and contract terms through consultation with subscribing STUs/ transit agencies

ix. Designing of robust payment security mechanism: Design robust payment security mechanism based on the assessment of the financial and credit strength of STUs

x. Increased competition: Designing conditions to increase the universe of eligible bidders through encouraging collaboration between OEMs, operators, financiers; domestic and foreign financial institutions; infrastructure service companies and financial investors such that there is adequate competition;

xi. Manage a consultative process: Facilitate consultations amongst stakeholders to evaluate alternative business models, arrive at common standard technical specifications and commercial terms to help design bankable and attractive structure.

xii. Designing and implementing a transparent and fair competitive bid process.

xiii. Capacity Building: As e-Buses deployment on PPP is a new and innovative concept, it is important to develop institutional capacity of relevant STUs to help them understand and implement the contract efficiently.

xiv. Design and drafting of bid documents, agreements and other documentation;

xv. Finalization of the technical specifications for buses suitable for the participating STUs.

xvi. Floating of RfP/tender to select bidders (OEM/ Operators) for eBus deployment.

xvii. Discovery of prices and communicate the same to STUs.

xviii. Assist STUs and the winning bidder to finalize the Concession agreement.

xix. Development of mechanism to monetize the carbon credits from this program.

ii. STU/Authority's Key Responsibilities

a. Under GCC Model

i. Sign Concession agreement for deployment of e-buses, including defining of optimal routes for facilitating e-bus deployment. Agreement will be part of the RFP document and shall not change afterwards.

ii. Escrow account to be created by the STU/Authority into which the STU shall maintain monies equal to the estimated two months fees.

iii. Provide adequate vacant land at the depot, free from encumbrances, along with road connectivity and right of way, civil structures for management of transit operations (such as boundary wall, external service connections, office, security booths, medical facility, restrooms, canteen, stores, workshop sheds, washing/ maintenance/ service pits, etc.), upstream infrastructures including civil/electrical work and electric connection at available HT metering level (6/11/22/33 KV connection) and all requisite license/permissions for set-up and operation of maintenance depots, charging infrastructure, and parking of buses. The Authority shall hand over unencumbered possession of maintenance depots to the operator.

iv. The Authority will not be responsible for payment of any electricity charges related to operations, maintenance and charging of buses. The Authority will bear any changes (increase or decrease) in electricity tariff or other related charges including fixed fee, cess, taxes etc. up to the allowable power consumption post the bid submission date.

v. Provide conductors on buses for ticket collection.

vi. Monitor operations through a command and control center to monitor performance and track infractions

vii. Make monthly payments for the kilometers operated to selected bidders at the discovered prices in line with the terms of the concession agreement and stipulated timelines

viii. Support, cooperate with and facilitate the Operator in the implementation and operation of the Project

ix. Collect 100% advertisement revenue from buses while ensuring no damage to the buses or maintenance and charging infrastructure. Any damage caused to the buses or associated charging and maintenance during to installation, operation or removal of advertisements would be fully borne by the STU on actuals within a month from the damage being reported.

b. Under Dry Leasing Contract Model

i. Sign Dry Lease agreement for deployment of e-buses. Agreement will be part of the RFP document and shall not change afterwards.

ii. Escrow account to be created by the STU/Authority into which the STU shall maintain monies equal to the estimated two months fees.

iii. Provide adequate vacant land at the depot, free from encumbrances, along with road connectivity and right of way, civil structures for the management of transit operations (such as boundary wall, external service connections, office, security booths, medical facility, restrooms, canteen, stores, workshop sheds, washing/ maintenance/ service pits, etc.), upstream infrastructures including civil/electrical work and electric connection available at HT metering level (6/11/22/33/66 KV connection) all requisite license/permissions for set-up and operation of maintenance depots, charging infrastructure, and parking of buses. The Authority shall

handover peaceful and unencumbered possession of maintenance depots to the operator.

iv. Pay electricity consumption charges for charging of buses subject to energy efficiency limits. Reconciliation for electricity consumption will be done annually.

v. Operating, Planning and Scheduling of fleet including providing driver's and conductors on buses for ticket collection

vi. To pay monthly per bus fee (PB Fee) to the selected bidders at the discovered prices in line with the term of the concession agreement and stipulated timelines.

vii. Support, cooperate with and facilitate the Operator in the implementation of the Project.

viii. Collect 100% advertisement revenue from buses while ensuring no damage to the buses or maintenance and charging infrastructure. Any damage caused to the buses or associated charging and maintenance during to installation, operation or removal of advertisements would be fully borne by the STU on actuals within a month from the damage being reported.

iv. Bidder's Key Responsibilities

a. Under GCC Model

i. Design, manufacture, procurement and supply of buses along with chargers confirming to the Specifications and Standards set forth and timely deployment of e-buses as per the schedule provided by the STU in the Concession Agreement.

ii. Bidder(s) will be responsible for setting up of Bus Maintenance Facilities at depots and downstream infrastructure beyond HT metering level (6/11/22/33/66 kV connection) provided at the depot site by the Authority, including all allied electrical and civil infrastructure along with service equipment, tools and facilities required for day- to-day operations and maintenance of the buses. Separate metering at LT/HT level for ancillary load for administration and maintenance activities performed by the bidder and sub-metering for Authority related activities will be set up at each depot site.

iii. To provide GCC bids inclusive of electricity cost (inclusive of fixed charges, cess, surcharges taxes and any other charges levied by DISCOM) as per local DISCOM charges of the cities/states. The bidder is responsible for the payment of electricity charges at the HT metering level to the local DISCOM for operation of buses under the concessionaire agreement (and power consumption from operations of the maintenance depot and use of equipment and machinery).

iv. To pay cost of any electricity consumed on account of (i) charging of the buses requiring electricity in excess of the Allowed Power Consumption; (ii) the use of any other equipment, plant and machinery at the Maintenance Depot (apart from the Charging Infrastructure); and (iii) the Operations and Maintenance of the Maintenance Depot.

v. The Operator shall provide for real time data monitoring and provide the Authority access to the raw feed of the monitoring system pertaining to the performance of the Operator under this Contract as generated by ITS (Intelligent Transport System). The Operator shall insure adequate interfacing with the existing State and proposed CESL centralized database. The Operator further agrees to install on-board devices to enable the Authority to access real time location and status of the buses. The data collected for the ITS may also be stored on a server for analytical purposes. Ensure operation of e-buses on the routes specified and in adherence to all SLAs under concession agreement.

vi. Ensure that the recommendations in annual safety audit report shall be implemented in accordance with Safety Requirements, Specifications and Standards and Applicable Laws.

vii. Undertake mid-life bus refurbishment and battery replacement same as NEBP Tender 1.

viii. Payment of CESL fees

b. Under Dry Lease Contract Model

i. Design, manufacture, procurement and supply of buses confirming to the Specifications and Standards set forth and timely deployment of e-buses as per the schedule provided by the STU in the Concession Agreement.

ii. Bidder(s) will be responsible for setting up of Bus Maintenance Facilities at depots and downstream infrastructure beyond beyond HT metering level (6/11/22/33/66 kV connection) provided at the depot site by the Authority, including all allied Electrical and Civil Infrastructure along with service equipment, tools and facilities required for day–to-day maintenance of the buses. Separate metering at LT/HT level for ancillary load for administration and maintenance activities performed by the bidder and sub-metering for Authority related activities will be set up at each depot site.

iii. Bidder has to supply chargers along with the buses with overnight charging time less than 5 hours iv. Undertake the design, engineering, procurement, construction, and operation of the maintenance facility for e-buses at the depots

v. Provide training to the pool of drivers provided by Authority initially and refresher training at fixed intervals.

vi. To pay cost of any electricity consumed on account of (i) charging of the buses requiring electricity in excess of the Allowed Power Consumption; (ii) the use of any other equipment, plant and machinery at the Maintenance Depot (apart from theCharging Infrastructure); and (iii) the Operations and Maintenance of the Maintenance Depot.

vii. Provide onboard tools/software/devices to monitor the driver behaviour and identify improper driving habits and behaviour which may impact safety, energy consumption or faster deterioration of the bus.

viii. Ensure 95% fleet availability and reliability for operations as per SLAs under Dry lease agreement.

ix. Undertake mid-life bus refurbishment and battery replacement – same as Grand Challenge terms.

x. Bidder has to provide comprehensive insurance and insurance clauses will remain same as Grand Challenge GCC model.

8. Procedure for submitting this EOI.

Eligible entities as per the parameters stated above may submit their proposal for deployment of electric buses through National E-Bus Program for India in response to this EoI as per the subscription letter (non-binding) mentioned in Annexure-A & Annexure-B.

CONVERGENCE ENERGY SERVICES LIMITED
(A wholly owned subsidiary of Energy Efficiency Services Ltd. (EESL))

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ANNEXURE-A

(To be given in the letter head of the organization)

Subscription Letter

To

CGM (SCM)
Convergence Energy Services Limited
Core-3, 2nd Floor, SCOPE Complex, Lodhi Road, New Delhi-110003

Subject: Proposal for participation in National Electric Bus Programme for India through Aggregation model for Deployment of Electric Buses on Gross Cost Contract Model or Dry lease Contract Model basis

Sir,

Reference to Expression of Interest issued on 06/042023 for inviting proposals from STUs/Authority for **participation in National Electric Bus Programme for India through Aggregation model For Deployment of Electric Buses on Gross Cost Contract Model or Dry Lease Contract Model basis issued by CESL**, we are hereby submitting our Expression of Interest, in the prescribed format, for consideration of CESL. We agree to abide by the conditions set forth in the said EOI.

As a part of this program, we express our demand for E buses here under: (Demand for each lot shouldn't be less than 50 nos)

a. Under Gross Cost Contract Model

1. Demand for Type I (Intracity) buses (i.e. within the same city):

Type	AC		Non-AC	
	Standard Floor	Low Floor	Standard Floor	Low Floor
Number of Buses (7m)				
Number of Buses (9m)				
Number of Buses (12m)				

2. Demand for Type II (Mofussil) buses:

Type	AC		Non-AC	
	Standard Floor	Low Floor	Standard Floor	Low Floor
Number of Buses (7m)				
Number of Buses (9m)				
Number of Buses (12m)				

3. Demand for Type III (intercity) buses (i.e. city to city):

Type	AC		Non-AC	
	Standard Floor	Low Floor	Standard Floor	Low Floor
Number of Buses (9m)				
Number of Buses (12m)				

b. Under Dry Lease Contract Model

4. Demand for Type I (Intracity) buses (i.e. within the same city):

Type	AC		Non-AC	
	Standard Floor	Low Floor	Standard Floor	Low Floor
Number of Buses (7m)				
Number of Buses (9m)				
Number of Buses (12m)				

5. Demand for Type II (Mofussil) buses:

Type	AC		Non-AC	
	Standard Floor	Low Floor	Standard Floor	Low Floor
Number of Buses (7m)				
Number of Buses (9m)				
Number of Buses (12m)				

6. Demand for Type III (intercity) buses (i.e. city to city):

Type	AC		Non-AC	
	Standard Floor	Low Floor	Standard Floor	Low Floor
Number of Buses (9m)				
Number of Buses (12m)				

Sincerely,

Signature:_____

Name:_____

Designation: _____

AUTHORISED SIGNATORY'S SIGNATURE WITH SEAL

ANNEXURE-B

Additional information needed to be submitted by cities/STUs in response to EOI A. General details

Parameter	Details
Name of STU/Authority:	
Details of nodal person: • Name • Designation • Phone number • E-mail ID	
Power Tariff applicable (final landed cost) for Electric buses (Rs. per unit). Tariff guidelines to be attached.	
Total no. of buses currently in operation	
No of diesel/ CNG buses in operation	
No of e-buses in operation	
No of vehicles running on GCC model	
No of diesel/CNG running on GCC model	
No of e-buses on GCC model	
Age of buses for scrapping, as mandated in the state	
No of vehicles with age more than 12 years	
No of vehicles with age more than 11 years	
No of vehicles with age more than 10 years	
No of depots identified for e-buses to be deployed under this program	
Capital subsidy proposed by State/City/STU/Authority (INR in lakhs) – if any	
Number buses /Authority is planning deploy in next 5 years – estimate is fine	

 Break-up of existing Diesel/CNG buses based on its total run per day in the following table:

No of Buses	**150 to 200 km**	**200 to 250 km**	**250 to 300 km**	**300 to 350 km**	**More than 350 km**
Bus owned and run by STU/Authority					
Buses run on GCC model					
Total Buses					

B. List of depots identified for proposed electric buses to be deployed and no of buses (type and size wise) per depot under: (**this information will be disclosed in the RFP**)

i. GCC Model

S. No.	Depot Name	No of proposed Buses	Type of operation of bus* (Type I/II/III)	Bus type* (7/9/12 meter bus, Std floor/Low floor & AC/Non-AC)	Area (sq.m)

*Authority is advised to allocate minimum of 50 buses in a depot for each type of bus

ii. Dry Lease Model

S. No.	Depot Name	No of proposed Buses	Type of operation of bus* (Type I/II/III)	Bus type* (7/9/12 meter bus, Std floor/Low floor & AC/Non-AC)	Area (sq.m)

*Authority is advised to allocate minimum of 50 buses in a depot for each type of bus

c. Detailed deployment plan for the proposed buses– will be disclosed in the RFP

FY	**No. of Buses (type and size wise)**	
	Under GCC	**Under Dry Lease Model**
FY 2023-24		
FY 2024-25		
FY 2025-26		

d. Details about arrangement of upstream electricity supply for charging of electric buses.

i. GCC Model

S. No.	Depot Name	No of Buses	Power availability (6/11/33 KV)	Additional power requirement

ii. Dry Lease Model

S. No.	Depot Name	No of Buses	Power availability (6/11/22/33/66 KV)	Additional power requirement

e. Any other information in support of proposal submitted by STU/Authority

Name:

Designation:

Signature:

AUTHORISED SIGNATORY'S SIGNATURE WITH SEAL

ANNEXURE-C

For developing upstream infrastructure for e-bus operations by STUs, following are the SOP to be followed.

Step 1: Load estimation for e-bus operations.
Step 2: DISCOM connection process for upstream depot infrastructure. Step 3: Survey and land requirements for upstream depot infrastructure. Step 4: Demand estimates by DISCOM for upstream depot infrastructure. Step 5: Agreements to be entered between STU and DISCOM.
Step 6: Payment against demand note.
Step 7: Timelines.

1. **Load estimation for e-bus operations:**

An estimate of number of chargers required to operationalize a bus depot with 100 pure e-buses is presented in Table -1. Assuming that the e-buses would be subjected to both day and night charging in STU owned bus depots, the charger requirement for AC and Non-AC buses of 12m and 9m length has been worked out as follows:

Table 1: Depot Power requirement for 9 and 12m e-buses

Sl. No.	Description	9m AC Bus	9m Non-AC Bus	12m AC BUS	12m NonAC BUS
1	Rated Range (Km)	180	180	200	200
2	On Board Battery Capacity(kWh)	220	200	350	260
3	Energy Consumed (kWh/Km)	1	0.85	1.3	1.1
4	Daily Run (Km)	200	200	225	225
5	No of e-buses	100	100	100	100
6	Proposed Capacity of Charger (kW)	180	180	240	240
7	Bus/charger ratio	4	4	4	4
8	Estimated no. of Chargers to meet energy demand-Dual Gun	25	25	25	25
9	Total Charger load/ Bus Depot (kVA)	4500[2]	4500	6000	6000
10	Upstream Capacity required/Depot (mVA)	4.5	4.5	6.0	6.0

Depending on the STU plans for deployment of 100 e-buses per depot, the load estimation varies from 4500 kVA to 6000 kVA per depot.

2. **DISCOM connection process for upstream depot infrastructure:**

- STU have to finalise their depot plans for parking of e-buses and establishing EV chargers for e-bus operations.
- STU have to prepare a layout (civil drawing) of their depot with area earmarked for e-buses and EV chargers for e-bus operations.
- After finalisation of load estimates for e-bus operations, STU have to submit the application (online or offline as per the DISCOM process) under the HT/EHT connection category to concerned DISCOM.

- Applicable application fee as per DISCOM rates and requisite documents have to submitted by STU while forwarding the application to DISCOM.
- Incomplete documentation or insufficient information could lead to auto cancellation of application submitted by STU. Therefore, STU have to ensure completeness in the application submitted to DISCOM.

Classification of Supply under Regulation 6(1) of Supply Code Regulations (Delhi)

Sl. No	Classification	System of Supply
1	High Tension	
a.	Load exceeding 100kW/108kVA and up to 4000kVA	3 phase at 11kV
2	Extra High Tension	
a.	Load exceeding 4000kVA	3 phase at 33kV or above

3. Survey and land requirements for upstream depot infrastructure:

- DISCOM will conduct a technical and commercial feasibility surveys against the STU application for the load demanded.
- DISCOM will recommend the space requirements for Electrical Substation Space (ESS) within the premise of STU. Charger utilization/efficiency factor assumed at 80%
- The space requirement for ESS may vary depending on the supply voltage and demanded load by STU governed by the DISCOM supply code regulations.

Space for installation of Grid substation, transformers, service line meter and other equipment under regulations 22 of Supply Code Regulations (Delhi):

In case the load demanded by the STU is 1MVA or above at HT level, space for installation of grid sub-station is as under.

Sl. No	Sub station Type	Size (Meters)
(i)	Air – insulated Sub-station – 66/11 kV Grid sub-station with 2PTR	80M x 60M
(ii)	Air – insulated Sub-station – 66/11 kV Grid sub-station with 3PTR	90M x 80M
(iii)	Air – insulated Sub-station – 33/11 kV Grid sub-station with 2PTR	45M x 35M
(iv)	Gas – insulated Sub-station – 66/11 kV or 33/11kV	50M x 30M

STU have to provide additional space for DT substation for taking supply at Low Tension level or requiring LT Service connections from DISCOM have to provide additionalspace approx. 5*(4M x 5.3) and STU shall approach DISCOM for approval of space and layout.

4. Demand estimates by DISCOM for upstream depot infrastructure:

- DISCOM will generate a demand note for providing demanded load up to STU boundary at 11kV voltage levels governed by their supply code regulations.
- STU could opt for Deposit Work scheme of DISCOM for developing the distribution infrastructure from 11kV/415V up to the proposed Chargers location.
- Alternatively, STU may also execute upstream infrastructure on their own under the provisions of DISCOM supply code regulations for HT/EHT connections. In such cases, applicable supervision charges of DISOM have to be paid by STU.
- STU have to provide test reports and safety certificates for the EV chargers planned to be

installed.

- STU have to provide the clearances for all the HT equipment's to be used at site by the DISCOM/Electrical Inspectors.

5. Agreements to entered between STU and DISCOM:

- After Handing Over or Taking Over (HOTO) of space by DISCOM, standard agreement will be signed between DISCOM and STU.
- Agreement template of DISCOM shall be followed by STU.

6. Payment against demand note:

- STU shall release the applicable payment to DISCOM towards the meter connection and demanded load based on the generated demand note along with the refundable security deposit.
- Payment for load application in case of HT is as below:
  a. 100% Road Restoration (RR) cost will be borne by STU
  b. HT cable, labor and switch gear cost will be spitted between DISCOM and STU in 50:50 ratio
  c. Cost of metering unit be borne by DISCOM
  d. Civil work/ construction of electrical substation including the transformer cost will be 100% borne by STU
  e. Maintenance of the electrical substation space (ESS) will be in the scope of STU.
  f. 100% of payment for load application including civil work has to borne by STU in case of EHT connections.
- Typically above process takes close to 3-4 months for completing above steps from (1) to (6)
- Tentative estimated cost of upstream depot infrastructure including civil works for 100 buses per depot is between 5-6 Cr. Ratio of buses per charger is assumed 1:5

7. Timeline:

- Based on the load demanded by STU, for providing new connections requiring augmentation of distribution system by DISCOM, the approximate time schedule is as under.

(i)	Electrified Areas (where existing 11kV network needs to be augmented)	Within 6 months from the date of receipt of payment against demand note

(ii)	Electrified Areas (Where existing 66/33kV grid sub-station needs to be augmented)	Within 8 months from the date of receipt of payment against demand note