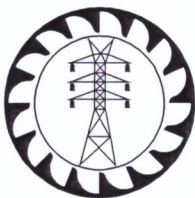


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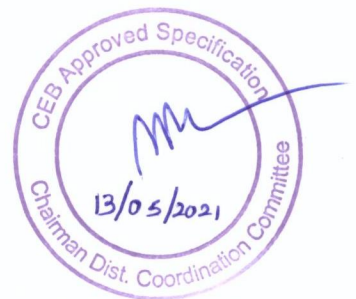
CEB  
SPECIFICATION

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**LORRIES AND CRANES/ AUGERS/  
INSULATED AERIAL BUCKET/  
PLATFORM**



**CEYLON ELECTRICITY BOARD  
SRI LANKA**



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## SPECIFICATION FOR LORRIES AND CRANES/ AUGERS/ INSULATED AERIAL BUCKET/ PLATFORM

### 1.0 SCOPE

This specification covers the general requirements of the design and manufacturing of following combinations of vehicles/cranes/auger/ aerial bucket with relevant payloads where payload is the net weight to be carried after deducting all vehicle weights including chassis, cab, fuel, crane, auger, tray and aerial bucket/ platform.

- a) Narrow/ wide faced Lorry of payload 3MT
- b) Lorry of payload 6MT/10MT short wheel base/long wheel base.
- c) Crane mounted, Narrow/ wide faced Lorry of 2MT payload, 2MT Crane.
- d) Crane mounted Lorry of payload 6MT/10MT, short wheel base/long wheel base– 3MT/5MT Crane.
- e) Crane & Auger mounted Lorry of payload 6MT/10MT, short wheel base/long wheel base – 3MT Crane with auger.
- f) Insulated Aerial bucket/ platform mounted Narrow/ wide faced Lorry of payload 3MT

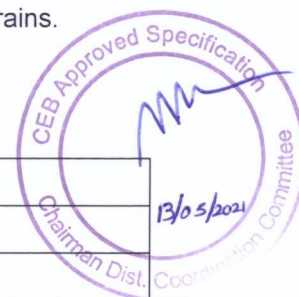
The procurement entity will select one or more of above categories in price schedule.

### 2.0 PAYLOAD DETAILS

The vehicle shall be capable of carrying a payload which would consist of concrete poles, cable drums, distribution transformer and other transmission and distribution line construction material & equipment etc. as applicable, which is shown in Annex A over flat and mountain terrains.

### 3.0 SERVICE CONDITIONS

(a)	Annual average ambient temperature	30 °C
(b)	Maximum ambient temperature	40 °C
(c)	Maximum relative humidity	90%
(d)	Solar Radiation	4.5 kWh/m <sup>2</sup> /day
(e)	Environmental conditions	Humid tropical climate with heavily polluted atmosphere
(f)	Operational altitude	From M.S.L. to 1900 m above M.S.L.
(g)	Isokeraunic (Thunder days) level	100 days



### 4.0 APPLICABLE STANDARDS

The vehicle shall conform to the Motor Traffic Act of Sri Lanka and any other related gazette notifications.

## 5.0 BASIC FEATURES

All the vehicles described below shall be of brand new and the model offered shall be of latest type suitable for use in tropical climate.

### 5.1 Lorry

The vehicle shall be forward control, right hand driven lorry. They must be with all steel open load tray with three or five hinged collapsible sides except for Auger and Insulated Aerial bucket/ platform mounted lorries (clause 1.e and clause 1.f). The vehicle shall have following but not limited to, factory fitted standard fittings and indications unless stated otherwise.

#### 5.1.1 Standard Fittings

1. FM radio(88-108MHz)/Stereo type CD/DVD player with speakers and antenna (Either factory or locally fitted).
2. Clock.
3. Air Conditioning System working on CFC free refrigerant.
4. Air bags for driver and passengers.
5. Front three point seat belts for driver and passengers.
6. Phone charger socket.
7. Mud flaps for front and rear wheels.
8. Full set of floor carpets. (Factory fitted not required)
9. Sun visors for front passenger and driver.
10. Door visors
11. Both side view mirrors, globe type front view mirror and rear view interior mirror. For lorries above 6MT 3 point front left hand side view mirrors shall be provided.
12. Two wind shield wipers with two variable speeds and intermittent operation facility.
13. Wind shield washer.
14. Cab interior lights.
15. Dual Electric horns.
16. Head lamps with dimming facilities.
17. Front fog lamps.
18. Turning indicator lamps.
19. Parking lamps.
20. Reverse lamps.
21. Rear number plate lamp.
22. Reverse warning buzzer.
23. Rear cameras.
24. Front pillar grips.
25. Roof hand grips.
26. Hand rests.





### 5.1.2 Instruments

1. Speedometer with odometer and trip meter
2. Fuel level gauge
3. Cooling water temperature gauge
4. No/low battery charge indicator
5. Head light dip/beam indicator
6. Turning signal indicators
7. Hazard warning indicators
8. Parking brake indicator
9. Engine oil low pressure indicator
10. Low fuel indicator
11. Door open indicator
12. Brake failure indication
13. PTO "ON" indicator



### 5.1.3 Special items (If applicable)

1. Hydraulically operated outriggers
2. P. T. O switch

### 5.1.4 Specific features of the Lorries shall be in accordance with the following table.

Payload	Lorry –2MT/3MT	Lorry - 6MT SWB	Lorry – 6MT LWB	Lorry – 10MT SWB	Lorry – 10MT LWB
<b>1. Cab</b>					
(a) General design and materials	The enclosed cab shall be of all Steel construction of a standard pattern with toughened glass or laminated glass single piece wind shield and rear window. Windows shall be opened or closed sliding vertically. The cabin shall be of tilting type with suitable locking mechanism. Extended cabin with bunk bed space shall be available for SWB & LWB Lorries of 6MT and 10MT payloads. This is not mandatory for crane mounted lorries.				
(b) Material of seats and description	The seats and back rest should have foam rubber cushions covered with toughened PVC or similar material. The driving seat shall be adjustable and reclining type with head rest.				
(c) Seating Capacity	3 persons inclusive of the driver				
(d) Covering of the floor	The floor has to be covered with rubber sheets or similar suitable material. Suitable type of carpets shall also be provided for the cab.				
<b>2. Wheel Base (Max.)</b>	3.5m	3.5m	-	5m	-

Payload	Lorry –2MT/3MT	Lorry - 6MT SWB	Lorry – 6MT LWB	Lorry – 10MT SWB	Lorry – 10MT LWB
3. Tray	(As applicable)				
(a) Minimum Payload (MT)	For clause 1.0 a : 3 For clause 1.0 c : 2	6	6	10	10
(b) Material	Shall be made out of steel plate of minimum thickness 3mm with smooth surface. (factory or locally fabricated)				
(c) Minimum length of tray	4.2m	4.5m	6m	6m	8m
(d) Cab guard frame	Cab protective guard with suitable strength & opening to see the rear of the vehicle shall be provided at the front of tray.				
(e) Collapsible sides	3		3 or 5		
(f) Other requirements	<ul style="list-style-type: none"><li>• The door hinges shall have heavy duty locking pins or welded check nuts to prevent dislocation. Collapsible doors shall have door retaining chains.</li><li>• The protective crash bars on both sides and the rear side of the tray shall be provided with suitable light reflectors on rear and either side of tray.</li><li>• Steel Mud guards shall be available for the rear wheels.</li><li>• Lockable tool box fixed to the chassis at the side of the tray shall be provided.</li></ul>				
4. Engine Type	The engine shall be four cylinder, 4 stroke water cooled diesel engine.	The engine shall be four/six cylinder, 4 stroke water cooled diesel engine			
	Brand or logo shall be indicated on the engine block or engine compartment with model number and other details				
5. Minimum Peak Engine Power	90kW	100kW		140kW	
6. Minimum Engine Capacity	3000cc (with turbo) 4000cc (without turbo)	4500cc (with turbo) 5000cc (without turbo)		6000cc (with turbo) 7500cc (without turbo)	
7. Transmission	The minimum requirement is 5 forward speeds and a reverse with manual synchromesh. The floor mounted/ dashboard mounted gear shift and single drive plate clutch mechanism to be provided.				



Payload	Lorry –2MT/3MT	Lorry - 6MT SWB	Lorry – 6MT LWB	Lorry – 10MT SWB	Lorry – 10MT LWB
8. Steering	<ul style="list-style-type: none"><li>Hydraulic, Electric or any other power assisted steering system with tilt, telescopic column and steering lock shall be provided.</li><li>The wiper switch and turning signal switch shall be located left and right-hand side of the steering column respectively.</li></ul>				
9. Suspension	Heavy duty semi-elliptic laminated leaf spring shall be provided in front and rear together with heavy duty double acting hydraulic shock absorbers on front and rear.				
10. Brakes	Air assisted dual circuit hydraulic brake system acting on all four wheels with parking brakes to act on rear wheels shall be provided. Exhaust brakes shall also be available. Anti-locking braking system shall be available.				
11. Wheels & Tyres	The front single, rear dual and spare wheels shall be of same size of at least 16 inch and having pressed steel wheels fitted with heavy duty standard size tyres of suitable tread pattern suitable for rough roads. Spare wheel shall be mounted securely under the rear tray.	The front single, rear dual and spare wheels shall be of same size of at least 20 inch and having pressed steel wheels fitted with heavy duty standard size tyres of suitable tread pattern suitable for rough roads. Spare wheel shall be mounted securely under the rear tray.			
12. Rear Axle	Rear axle shall be suitable for transport of the specified maximum payload on all types of terrain.				
13. Fuel Tank	The capacity of the frame mounted fuel tank shall not be less than 100 litres with lockable type filling cap.	The capacity of the frame mounted fuel tank shall not be less than 160 litres with lockable type filling cap.			
14. Electrical System	12/24V electrical system shall consist of heavy duty battery, heavy duty starter motor and battery charging alternator.				

## 5.2 Crane Mounted Lorry

- a) The lorry applicable for this category shall be as per clause 5.1. However, the total tray length specified in Clause 5.1.4 item 3 c, may include the spacing for crane also.
- b) The specified payload of the crane mounted lorry shall be the clear payload after deducting for vehicle and crane weights.
- c) Basic requirements for 2MT/3MT/5MT crane shall be in accordance with the following table:

Minimum lifting capacity	2 MT at 2m	3MT at 2.4m	5MT at 2.4m
Lifting Height from the ground	5.5m or more	9m or more	10m or more
Minimum Working Radius	1m or less	1m or less	1m or less
Working radius at fully extended boom	4.2 m or more	7m or more	8m or more
Boom raise domain	1 - 76° or wider		
Slewing angle	360°		

- d) The crane shall only be telescopic/rope type with a winch and shall be fitted behind the cab. The crane shall be hydraulically operated and powered off the vehicle engine through PTO.
- e) Dual hydraulic operating controls of the crane shall be provided to facilitate operation of the crane from either side of the lorry.
- f) The crane mounted lorry shall have minimum two (2) outriggers on each side of the vehicle. The horizontal extension of the outriggers may be manual and vertical lift shall be hydraulically operated.
- g) The crane shall consist of an hour meter.
- h) The crane shall be able to operate remotely via a handheld device.
- i) The crane to be fitted with following safety devices and load meter, so that the crane desists from operation and also gives an alarm when;
  - (i). Loads more than the rated load is applied
  - (ii). The movement of the boom reaches its rated height or distance
  - (iii). There is an over winding situation in winch.
- j) Following interlocks shall be available for the safe operation of the crane;
  - (i). Hook safety latch.
  - (ii). Automatic swing lock.





- (iii). Outrigger locks.
- (iv). Interlocks to ensure boom does not operate until outriggers are deployed.
- (v). Interlocks to ensure boom and outriggers do not operate when vehicle is running. However, winch should be lockable to hold end of the poles to prevent swinging while the truck is moving.
- (vi). Overload (weight x working radius) cut off with audio visual indicator
- (vii). Emergency wind off using electrical capability in case of failure of Engine

- k) Load meter shall be indelibly marked on the crane. In addition, working range diagrams giving all the details shall be submitted. (Working radius/Load/Lifting heights).

### 5.3 Crane & Auger Mounted Lorry

The lorry applicable for this category shall be as per clause 5.1. The specified payload of the crane & auger mounted lorry shall be the clear payload after allowing for vehicle, crane and auger weights.

The crane and auger to facilitate digging of pole pits, loading and unloading of heavy equipment shall be fitted behind the cab. The crane shall be of straight telescopic/ rope type with a suitable winch and shall be hydraulically operated and powered from the truck engine through PTO. Dual hydraulic operating controls of the crane shall be provided to facilitate operation of the crane and the outriggers from either side of the truck.

The digger derrick shall be consisting of earth digger (auger), digger rest, digger support and hydraulic motor. The auger/digger unit shall be permanently fixed to the boom section of the crane and shall be capable of operating without any complicated and time consuming assembling in a particular application.

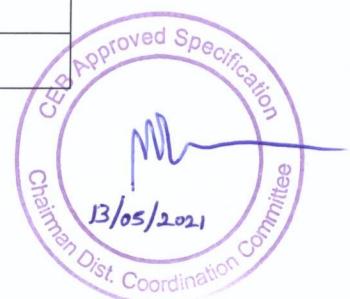
#### a) Crane Performance

	3MT Crane
Lifting Load	3MT at 4m
Lifting Height	not less than 10m
Working Radius	1m to 10m

#### b) Auger performance

Auger shall be able to dig holes and pole pits in hard soil

a)	Drilling Depth	Minimum 2.5m
b)	Working Radius	from 2.7m to 10m
c)	Diameter of the digger blade	0.45m
d)	Blade height of the digger from the tip	1.5m



## 5.4 Insulated Aerial bucket/ platform mounted lorry

### 5.4.1 General

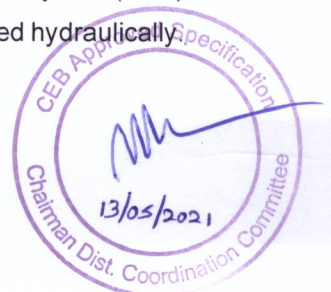
- a) The lorry applicable for this category shall be as per clause 5.1 with brand new high-performance telescopic type Aerial bucket/ work platform.
- b) The vehicle shall comprise a truck chassis, mounted with sub frame including minimum two (2) outriggers on each side of the vehicle with a 360° rotatable turntable and telescopic boom mounted with an insulated bucket to accommodate operators to work on overhead power lines.
- c) The sub frame construction should be of steel with outriggers mounted on the front and rear parts thereof. The horizontal extension of the outriggers may be manual and vertical lift shall be hydraulically operated. The outriggers shall be operated by means of manipulating a lever mounted on either side or rear side of the vehicle making use of hydraulic power.
- d) The mounted aerial bucket should be operated hydraulically, powered by the truck engine.
- e) The aerial bucket/ boom section shall not be limited to, factory fitted standard fittings and indications unless stated otherwise.
- f) The aerial lift shall be of insulated type and control panels shall be fitted both on turn table and bucket.
- g) A hydraulic winch should be provided with the bucket to lift the material from the ground when the bucket is in the elevated position and shall be operated manually.

### 5.4.2 Turntable

Turntable shall be made out of steel and mounted on a ball bearing racer with elevating cylinder and boom pin connected to turntable. The turntable should be operated hydraulically with a worm reduction gear for 360 degrees full swivelling.

### 5.4.3 Boom

The boom shall be made out of welded steel sheet with rectangular or square section. The final boom section that connects the bucket shall be made out of Fiber Reinforced Polyethylene (FRP) having a withstanding voltage of 100kV/ 5min. Boom shall be telescopic type operated hydraulically.



#### 5.4.4 Bucket

Bucket shall be made out of using FRP or suitable insulating material and shall suit with the following specifications.

a)	Minimum bucket loading capacity	190kg (2 persons & equipment)
b)	Minimum elevator height (From ground level to the bottom of the bucket)	13m
c)	Minimum outreach (working radius)	10m
d)	Minimum lifting capacity of the winch which is attached near the bucket	150kg
e)	Minimum lifting capacity of the jib	450kg
f)	Bucket	Not less than 20kV/ 5 min. (AC)
g)	Boom rotation angle	360°

Bucket shall be equipped with an automatic levelling device so as to make the bucket constantly vertical against boom.

#### 5.4.5 Power take off and operating system

Power taken from P.T O. of truck engine drives hydraulic pumps to generate oil pressure to operate the outriggers, turntable and the bucket. All control levers shall be located on the left or rear side of the vehicle. The operating system should be divided into outrigger system and boom system.

Control facility shall be available for the operator inside the bucket to manoeuvre the movement of the bucket.

#### 5.4.6 Other requirements

- a) Following safety features shall be provided
  - (i). An automatic hydraulic safety valve to avoid any overloading
  - (ii). A specific device to avoid any abrupt movement
  - (iii). An angle regulator to keep the bucket within a specified operational range
  - (iv). A lever locks on outrigger control lever
  - (v). Emergency stop switch
  - (vi). Jack boom interlock system
- b) Adjustable working spotlights shall be mounted on left and right sides of the boom stay and one on the bucket
- c) The aerial bucket mounted lorry shall consist of an hour meter





## 6.0 REQUIREMENTS FOR SELECTION

### 6.1 Quality Assurance

The manufacturers shall possess ISO 9001:2015 or latest Quality Assurance Certification valid throughout the delivery period of this bid, for the manufacture of Lorry, Crane/ Crane, Auger and Insulated aerial bucket/ platform for the plant where manufacturing is being done. The Bidder shall furnish a copy of the ISO certificate certified as true copy of the original by the manufacturer, along with the offer.

### 6.2 Supplier's Experience

Makes of the vehicle, crane, auger and insulated aerial bucket/ platform shall be of well-known brands in Sri Lanka for at least past 10 years. Suppliers for those have to be well established and must have reputed dealers/ local agents in Sri Lanka for the last ten years with fully pledged repair and service facilities, in order to maintain adequate spares at least for the next 10 years period. Valid documents (such as import documents, clearing documents etc) shall be attached to verify that the offered make has been used in Sri Lanka for at least 10 years.

The details of location, contact numbers, machinery and equipment available and staff with their qualification etc shall be provided.

### 6.3 Compatibility

The crane, auger and insulated aerial bucket/ platform offered shall be fully compatible with lorry and vice versa. The compatibility certification from the lorry manufacturer to the insulated aerial bucket/ platform, crane and/ or auger should be submitted with the offer. Similar certification shall be provided by the insulated aerial bucket/ platform, crane and / or auger manufacturer.

## 7.0 INFORMATION TO BE FURNISHED WITH THE OFFER

The following shall be furnished with the offer.

- a) Comprehensive catalogues, relevant dimensional drawings, schematic diagrams on the offered items. It shall necessarily include details about construction, electrical properties and mechanical properties of the item (and material used).
- b) ISO 9001:2015 or latest Quality Assurance Certificate in accordance with clause 6.1.
- c) Manufacturer shall furnish a list of workshops, equipment, capabilities and annual records to prove his capacity in accordance with Clause 6.2.
- d) Compatibility Certificates in accordance with the clause 6.3.





- e) Duly filled and signed 'Annex - B: Schedule of Technical Requirements and Guaranteed Technical Particulars'.
- f) Relevant Technical Details and Calculations on cranes and augers with loads and working radius

**Not furnishing above documents and details may result in offer being rejected.**

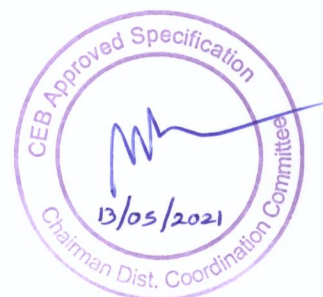
## **8.0 PERFORMANCE GUARANTEES, WARRANTIES AND OTHER REQUIREMENTS**

Minimum warranty period of 24 months or 40,000 km mileage whichever comes first for the entire lorry and 12 months or 1,200 running hours whichever comes first for the entire crane/crane & auger/ aerial bucket shall be provided. For each category separate warranties shall be provided with the offer. In case of a failure at the interface vehicle supplier has to take the responsibilities.

Manufacturer should provide CEB a performance guarantee with the letter of acceptance of the award ensuring service levels and technical performance given in his offer are met and maintained during the first year after the delivery to CEB stores.

### **8.1 Spares, tools and Manuals**

- a) The following spares and tools shall be supplied with each vehicle.
  - (i). Spare wheel complete with tyre.
  - (ii). Wheel brace.
  - (iii). Heavy duty jack with levers.
  - (iv). Set of spanners, screw driver and pliers
- b) Following tools shall be supplied for insulated aerial bucket/ platform, crane and/ or auger mounted lorries.
  - (v). Stabilizing plates
  - (vi). Four (04) wheel chocks



The spares recommended by the manufacturer for the crane/ aerial bucket for a three-year period of maintenance shall be itemized and indicated separately.

- c) The following instruction manuals and the literature in English shall be supplied.
  - (i). Operation & maintenance manual of vehicle & crane
  - (ii). Driver's instruction books.
  - (iii). Service manual of the crane/ aerial bucket & lorry
  - (iv). Working range diagrams giving all the details. (Working radius/Load/Lifting heights)

## 8.2 Registration of Offered Vehicle

Bidder shall register the vehicle as a Lorry/ Crane Mounted Lorry/ Aerial bucket mounted lorry and provide the number plate issued by the Department of Motor Traffic, Sri Lanka at the time of delivery.

## 8.3 Manufacturer's Workshop and Service Manual Covering all the Systems of the Vehicle Make/ Model Offered

The manufacturer's workshop and service manual shall be supplied for lorry, crane & auger separately with the delivery of vehicles.

## 8.4 Training

In case of insulated aerial buckets, cranes and/ or augers mounted lorries, supplier shall arrange training at site for operators. The venue, date and time shall be agreed between the supplier and procurement entity. The cost of the training shall be borne by the supplier.

## 9.0 SAMPLES

Not Applicable.

## 10.0 LABELING/ MARKING

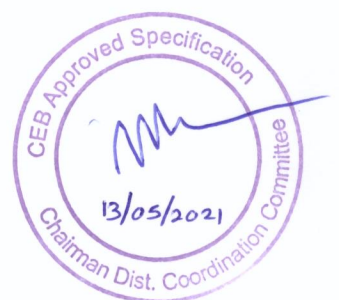
Windscreens of each vehicle shall be labelled (with removal ink/ sticker) with the following;

- a) "PROPERTY OF CEYLON ELECTRICITY BOARD"
- b) Bid No. .... Serial No.....
- c) Manufacturer's identification.
- d) Item Type, Ratings / size / capacity.
- e) Net Weight & Gross Weight in kg.
- f) Year of Manufacture.

## 11.0 INSPECTION AND TESTING

### 11.1 Inspection

The Successful bidder shall make necessary arrangements for inspection by an Engineer appointed by the CEB and also to carry out in his presence necessary Acceptance tests on procured item and material without any additional cost. Acceptance test reports shall be a part of the shipping document. CEB may waive off the inspection either with the condition of witnessing the acceptance tests by an independent body acceptable to CEB or completely. In such a situation a notice of waive off will be issued in advance to the supplier.



## 11.2 Acceptance Tests

Visual inspection, dimensional checks, functional tests conducted for the lorries and crane/ auger mounted lorries in addition to the complete routine test reports shall form the acceptance test report.

## 12.0 ANNEXES

Annex – A: Poles and Transformer details

Annex – B: Schedule of Technical Requirements and Guaranteed Technical Particulars

Annex – C: Non-compliance schedule



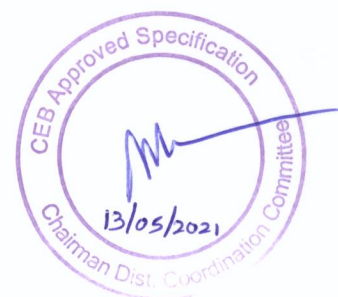
## Annex A - POLES AND TRANSFORMER DETAILS

### Poles details

Pre-Stressed Poles			RC Poles		
Pole Size (m)	Working load (kg)	Weight (kg)	Pole Size (m)	Working load (kg)	Weight (kg)
8.3	100	360	6	50	345
9	500	710	8.3	100	610
10	225	900		500	1100
11	350	950	9	115	710
	500	1100	10	300	1250
	850	1400		500	1250
	1200	1600			
13	500	1450			
	850	1900			
	1200	2305			

### Transformer Details (33kV Primary Voltage)

Transformer Capacity (kVA)	Weight (kg)	Transformer Capacity (kVA)	Weight (kg)
100	850	1000	3350
160	1050	1250	4315
250	1400	1500	5065
400	1850	1750	5420
630	2500	2000	6045
800	2850	2500	7610

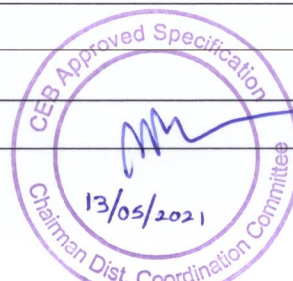




## Annex B - SCHEDULE OF TECHNICAL REQUIREMENTS AND GUARANTEED TECHNICAL PARTICULARS

(CEB Requirements shall be filled by the procurement entity and information of the offer shall be filled by the manufacturer. Following Information shall be furnished with the offer for each item offered.)

		Offered
	Item offered as per price schedule:	
	<u>Lorry</u>	
1.	Make	
2.	Model	
3.	Year of Manufacture	
4.	Country of Origin	
5.	Name & Address of the Manufacturer	
6.	Name & Address of the Local Agent	
7.	<b>General Information</b>	
	a) Overall length m	
	b) Overall width m	
	c) Wheel base m	
	d) No. of crew Nos.	
	e) Vehicle weight kg	
	f) Payload kg	
	g) Gross Weight kg	
	h) Overall height to roof top mm	
	i) Ground clearance (un laden) mm	
	j) Right hand drive Yes/No	
	k) Colour of the Truck	
	l) Rear axle capacity kg	
	m) Tilting front cabin with suitable locking mechanism Yes/No	
	n) Dimensions of cabin	
	o) Length of tray m	
	p) Factory fitted tray material	
	q) Side guard fenders for tray provided? Yes/No	
	r) Number of collapsible side doors 3/5	
	s) Tray floor board construction	
	t) Thickness of tray floor board steel panel mm	
	u) Tray door inside panel construction	
	v) Tray door outside panel construction	
	w) Badges and Logos depicting make and model	
	x) Type of hazard warning indicator provided?	



8.	<b>Seats</b>	
	(a) No. of seats	
	(b) Material of seats	
	(c) Whether Driving seat is adjustable	Yes/No
	(d) Availability of seat belts for front passenger and driver	Yes/No
9.	<b>Engine</b>	
	(a) Model	
	(b) Type	
	(c) Maximum power output	.....at.....rpm
	(d) Displacement	cc
10.	<b>Fuel</b>	
	(a) Type of fuel used	
	(b) Fuel tank capacity	Litres
	(c) Whether fuel tank filling cap is lockable?	Yes/No
	(d) Fuel consumption	km/l
	(e) Fuel consumption for crane/ aerial lift	hrs/l
11.	<b>Transmission System</b>	
	(a) Model	
	(b) Gear System	
	(c) Type	
	(d) No. of Forward gear	
	(e) Whether floor mounted/ dashboard mounted gear shifting provided?	
12.	<b>Steering System</b>	
	(a) Type	
	(b) Power steering	Hydraulic/Electric
	(c) Minimum turning radius	m
13.	<b>Suspension System</b>	
	(a) Front	
	(b) Rear	
14.	<b>Braking System</b>	
	(a) Front	
	(b) Rear	
	(c) Parking breaks	
	(d) Availability of ABS brakes	Yes/No
	(e) Availability of exhaust brakes	Yes/No
15.	<b>Wheels &amp; Tyres</b>	
	(a) Number of wheels & tyres	
	(b) Tyre size & type front	inch
	(c) Tyre size & type rear	inch





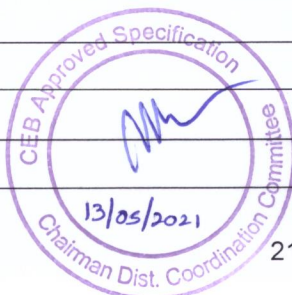
	(d) Wheel size	inch	
	(e) Spare wheel tyre size	inch	
16.	<b>Provided Standard Fittings</b>		
	(f) FM radio(88-108MHz)/Stereo type CD/DVD player with speakers and antenna (Either factory or locally fitted).	Yes/No	
	(g) Clock.	Yes/No	
	(h) Air Conditioning System working on CFC free refrigerant.	Yes/No	
	(i) Air bags for driver and passengers.	Yes/No	
	(j) Front three point seat belts for driver and passengers.	Yes/No	
	(k) Phone charger socket.	Yes/No	
	(l) Mud flaps for front and rear wheels.	Yes/No	
	(m) Full set of floor carpets.	Yes/No	
	(n) Sun visors for front passenger and driver.	Yes/No	
	(o) Door visors	Yes/No	
	(p) Both side view mirrors, globe type front view mirror and rear-view interior mirror. For lorries above 6MT 3-point front left hand side view mirrors shall be provided.	Yes/No	
	(q) Two wind shield wipers with two variable speeds and intermittent operation facility.	Yes/No	
	(r) Wind shield washer.	Yes/No	
	(s) Cab interior lights.	Yes/No	
	(t) Dual Electric horns.	Yes/No	
	(u) Head lamps with dimming facilities.	Yes/No	
	(v) Front fog lamps.	Yes/No	
	(w) Turning indicator lamps.	Yes/No	
	(x) Parking lamps.	Yes/No	
	(y) Reverse lamps.	Yes/No	
	(z) Rear number plate lamp.	Yes/No	
	(aa) Reverse warning buzzer.	Yes/No	
	(bb) Rear cameras.	Yes/No	
	(cc) Front pillar grips.	Yes/No	
	(dd) Roof hand grips.	Yes/No	
	(ee) Hand rests.	Yes/No	
17.	<b>Instruments Provided</b>		
	(a) Speedometer with odometer and trip meter	Yes/No	
	(b) Fuel level gauge	Yes/No	
	(c) Cooling water temperature gauge	Yes/No	
	(d) No/low battery charge indicator	Yes/No	
	(e) Head light dip/beam indicator	Yes/No	



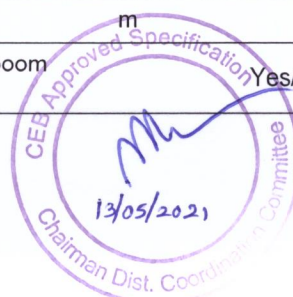
	(f) Turning signal indicators	Yes/No	
	(g) Hazard warning indicators	Yes/No	
	(h) Parking brake indicator	Yes/No	
	(i) Engine oil low pressure indicator	Yes/No	
	(j) Low fuel indicator	Yes/No	
	(k) Door open indicator	Yes/No	
	(l) Brake failure indication	Yes/No	
	(m) PTO "ON" indicator	Yes/No	
18.	<b>Special items</b>		
	(a) Hydraulically operated outriggers	Yes/No	
	(b) PTO Switch	Yes/No	
19.	<b>Electrical System</b>		
	(a) 12/24V electrical system with heavy duty battery	Yes/No	
	(b) Turning indicator lamps, parking lamps, stop lamp, rear number plate lamps, reverse lamps, hazard lamps and cab interior lamp	Yes/No	
	(c) Head lamps	Yes/No	
	(d) Head lamps dipper switch	Yes/No	
	(e) Electrical dual horn	Yes/No	
	(f) Heavy duty starter motor	Yes/No	
20.	<b>Spares, Tools &amp; Manuals</b>		
	(a) Spare wheel complete with tyre	Yes/No	
	(b) Wheel brace	Yes/No	
	(c) Jack with lever	Yes/No	
	(d) Set of spanners, screw driver and pliers	Yes/No	
	(e) Stabilizing plates (If applicable)	Yes/No	
	(f) Four (04) wheel chocks (If applicable)	Yes/No	
	(g) Operation & maintenance manual and the service booklet in English	Yes/No	
	(h) Driver's instruction books.	Yes/No	
	(i) Service manual of the crane/ aerial bucket & lorry	Yes/No	
	(j) Working range chart	Yes/No	
21.	Address of the dealer in Sri Lanka		
22.	Evidence provided for 10 years successful dealership in Sri Lanka	Yes/No	
23.	Availability of spare parts for 10 years (Please provide details)	Yes/No	
24.	Availability of service & repair facilities for next 10 years (please provide details)	Yes/No	
25.	Number of similar vehicles sold during last 05 years		
26.	Whether the vehicle offered conforms to Motor Traffic Act of Sri Lanka	Yes/No	
27.	Whether the letter of confirmation is attached to prove the offered vehicle conforms to the specification	Yes/No	



28.	Warranty	
29.	<b>Cabin</b>	
	(a) Single piece wind shield	Yes/No
	(b) Easy access to engine compartment	Yes/No
	(c) Side steps for easy access to cabin	Yes/No
30.	<b>Rear Tray</b>	
	(a) Whether the tray is factory fitted or locally manufactured?	Factory fitted/local
	(b) Whether steel rear tray provided?	Yes/No
	(c) Side and rear tray guards provided	Yes/No
	(d) Cab protective guard with suitable opening provided?	Yes/No
	(e) Door retaining chains	Yes/No
	(f) Heavy duty hinge locking pins/check nuts	Yes/No
	(g) 3/5 collapsible doors provided	Yes/No
31.	Please state what equipment and components are locally fitted	
32.	Valid documents attached to verify the age of offered make in the local market	Yes/No
33.	Standard accessories (please list in the space provided or attach the list separately)	
34.	Whether the lorries will be registered as a lorry/crane mounted lorry/crane, auger mounted lorry/ aerial bucket mounted lorry by the bidder and provided the number plate issued by the Department of Motor Traffic, Sri Lanka at the time of delivery.	Yes/No
35.	Valid documents/ certificates to verify the compatibility between the lorry and insulated aerial bucket/ platform, crane and (/ or) auger as per clause 6.3.	
<b><u>Crane (If Applicable)</u></b>		
1.	Make & Model of Crane	
2.	Country of manufacture	
3.	Year of Manufacture	
4.	Name of manufacturer	
5.	Capacity	
6.	Maximum Lifting Load	
	(a) Main boom	kgf
	(b) Sub boom	kgf
7.	Details of winch provided?	Yes/No
8.	Working range	m
9.	Maximum Lifting Height	
	(a) Main boom	m
	(b) Sub boom	m
10.	Working Radius	
	(a) Main boom	m
	(b) Sub boom	m



11.	Lifting Range over rear	Deg	
12.	Outrigger extended width		
	(a) Front	m	
	(b) Rear	m	
13.	Whether all the safety devices provided as per clause 5.2?	Yes/No	
14.	If any safety device is not provided as per clause 5.2 please specify		
15.	Whether all the interlocks provided as per clause 5.2?	Yes/No	
16.	If any interlock is not provided as per clause 5.2 please specify		
17.	Warranty for Crane		
18.	Whether hour meter and load meter provided?	Yes/No	
19.	<b>Hydraulic System</b>		
	(a) Oil reservoir capacity		
	(b) Recommended hydraulic oil		
	(c) Whether pressure gauge provided?	Yes/No	
	(d) Maximum hydraulic pressure- main relief	kgf/cm <sup>2</sup>	
	(e) Maximum hydraulic pressure - attachment	kgf/cm <sup>2</sup>	
20.	<b>Hydraulic Pump</b>		
	(a) Pump Type		
	(b) Discharge Volume	cc/rev	
	(c) Warranty of hydraulic equipment	years	
21.	Valid documents attached to verify the age of offered make in the local market		
22.	Whether after sale service provided for next 10 years	Yes/No	
<b>Auger (If Applicable)</b>			
1.	Brand & model		
2.	Period of usage of the offered brand of auger in Sri Lanka		
3.	Country of manufacture		
4.	Name of manufacturer		
5.	Maximum digging depth	m	
6.	Diameter of digger blade	m	
7.	Blade height of the digger from the tip	m	
8.	Working radius	m	
9.	Torque of the digger motor	nm	
10.	Boring diameter (Standard)	m	
11.	Digger extension stroke	m	
12.	Digging range over rear	Deg	
13.	Height of digger blades	m	
14.	Whether the auger/digger is permanently fixed to the boom section of the crane?	Yes/No	



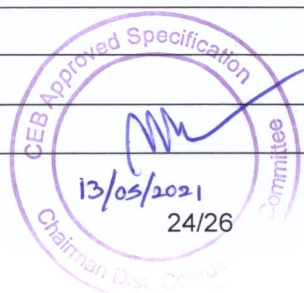


15.	Any additional parts need to be assembled on the crane for the operation of the auger/digger	
16.	Other equipment supplied with the auger	
17.	Warranty for auger	
18.	<b>Hydraulic System</b>	
	(a) Oil reservoir capacity	Litres
	(b) Recommended hydraulic oil	
	(c) Maximum hydraulic pressure	kgf/cm <sup>2</sup>
	(d) Main relief	kgf/cm <sup>2</sup>
	(e) Attachment	kgf/cm <sup>2</sup>
19.	<b>Hydraulic Pump</b>	
	(a) Pump type	
	(b) Discharge volume	cc/rev
20.	Warranty for the hydraulic equipment	
21.	Availability of spares, services and repair facilities for next 10 years for the crane & auger (please provide details)	
<b>Insulated Aerial bucket/ platform (If Applicable)</b>		
1.	Brand & model	
2.	Country of manufacture	
3.	Name of manufacturer	
4.	Year of manufacture	
5.	Period of usage of the offered brand of Aerial bucket/ lift in Sri Lanka	≥ 10 years
6.	Immediate previous boom model number and name	
7.	Usage period of immediate previous model in Sri Lanka	≥ 5 years
8.	Elevator height (From ground level to the bottom of the bucket)	m ≥ 13
9.	Elevation angle	Deg -16.5 to 80
10.	Boom length range	m
11.	Material of final boom	F. R. P. or equivalent
12.	Withstand voltage of final boom section	100kV AC/ 5min
13.	Type of the boom	Hydraulically operated telescopic type
14.	Maximum working radius of boom (outreach)	m ≥ 10
15.	Rotation angle	Deg 360
16.	Lower control station	Yes
17.	Individual outrigger operation is permitted	
18.	The location of mounting of outrigger controls relevant to the turn table	
19.	Boom rotating speed	
20.	Elevation time from lowest position to top	s
21.	No of outriggers	Nos. 4





22.	Bucket loading capacity	≥ 190kg (2 persons)	
23.	Material of bucket	F. R. P. or equivalent	
24.	Withstand voltage of bucket	20kV AC/ 5min	
25.	Bucket dimensions	Length (m) 1.00 Width (m) ≥ 0.65 Height (m) 0.90	
26.	Swing angle of the bucket	Deg 100 (left & right)	
27.	Slide up mechanism range	Mm 500	
28.	Lifting jib	Yes	
29.	Lifting weight by lifting winch	kg ≥ 150	
30.	Lifting weight by lifting jib	kg ≥ 450	
31.	Material of jib	F. R. P. or equivalent	
32.	Availability of automatic levelling devise of the bucket	Yes (Describe)	
33.	Availability of controls inside the bucket	Yes	
34.	Availability of hour meter	Yes	
35.	<b>Safety</b>		
	(a) Automatic moment control	Yes	
	(b) Automatic crash prevention	Yes	
	(c) Working radius limiter	Yes	
	(d) Emergency stop switch	Yes	
	(e) Interlock system between jack and boom	Yes	
	(f) Load indicator	Yes	
	(g) Hydraulic relief valves	Yes	
	(h) Pilot operated valves	Yes	
	(i) Holding valves	Yes	
	(j) Parking brake interlock	Yes	
	(k) PTO connection warning	Yes	
	(l) Outrigger indicator	Yes	
	(m) Shift lever interlock	Yes	
	(n) Level gauge	Yes	
	(o) Emergency pump	Yes	
	(p) Audible alarm for making operation sign	Yes	
36.	<b>Tools for the boom and the bucket</b>		
	(a) Tool box with tool kit	Yes	
	(b) Working light	Yes	
	(c) Hydraulic power output	Yes	
	(d) Jack base	4 Pcs yes	
	(e) Earth cable with reel	Yes	
	(f) Bucket and winch cover	Yes	



37.	Whether the catalogues submitted for the aerial bucket/ lift	Yes	
38.	<b>Hydraulic system</b>		
	(a) Oil reservoir capacity	Litres	
	(b) Recommended hydraulic oil		
	(c) Maximum hydraulic pressure	N/cm <sup>2</sup>	
	(d) Main relief	N/cm <sup>2</sup>	
	(e) Attachment	N/cm <sup>2</sup>	
39.	<b>Hydraulic pump</b>		
	(c) Pump type		
	(d) Discharge volume	cc/ rev	
40.	Warranty for the hydraulic system		
41.	Warranty for the aerial bucket and work platform		
42.	Availability of spares, services and repair facilities for next 10 years for the crane & auger (please provide details)		

.....  
Signature of the Manufacturer and seal

.....  
Date

I/We certify that the above data are true and correct

.....  
Signature of the Bidder and seal

.....  
Date



### Annex C - NON-COMPLIANCE SCHEDULE

On this schedule the bidder shall provide a list of non-compliances with this specification, documenting the effects that such non-compliance is likely to have on the equipment life and operating characteristics. Each non-compliance shall be referred to the relevant specification clause.

Clause No.	Non-Compliance

.....  
Signature of the Manufacturer

.....  
Date

I/We certify that the above data are true and correct

.....  
Signature of the Bidder and seal

.....  
Date

