

**Annexure-A**  
**REPLY TO TECHNICAL QUERIES OF PROSPECTIVE BIDDERS**  
**Battery Powered Electric Loco [Tender No. BPEL/DSM/08(R)]**  
(Ref.: Pre-tender meeting held on 19.07.2018)

S. No.	Vol. No.	Clause No.	Original Text	Bidder's Queries	KMRCL/GC's response	Addendum required	Addendum ref.
1	3	1.2	The BPEL shall be used for shunting and positioning of individual cars or 3/6-car trains and other metro vehicles on different lines with standard gauge 1435 mm in Central Park Depot as well for hauling coaches/wagons carrying re-railing & rescue equipment and other relief materials over the entire network of East-West metro line of KMRCL. The BPEL may also be used to haul stranded 6-car empty rakes on line over the entire network of East-West metro in case of emergency.	Please clarify on the model because Shunter/Tractor can't be allowed on Main Line Operation. Sir, Loco only complied with this procurement and as you are very much aware that Shunting and Rescue operation on "Main line" is different as compare to the Shunting Operation within the "Depot". Because, it requires Size, Power, & Safety.	KMRCL desires to procure Battery Powered Electric Loco as specified in the Tender document. It should comply Modified Davies Formula as per clause no.2.3.4 of Particular Specification Vol. 3.	Yes	1
2	3	1.4(v)	Whenever a new rolling stock is introduced, a Provisional Speed Certificate, based on the design parameters of the vehicle, is issued by the Research Design & Standards Organization (RDSO) of Indian Railways / any agency approved by the Employer. Final Speed Certificate for the vehicle is given by RDSO / any agency approved by Employer after conducting detailed instrumented tests & trials. The Contractor shall be responsible for furnishing all design details within stipulated Key Dates and for necessary interface for the purpose of obtaining the Provisional Speed Certificate required for running of the vehicle on KMRCL track in the interim period.	Yes, without this No Loco is allowed to perform operations like Shunting, Rescue etc. on main line or on Indian Tracks, since RDSO follow UIC Standards because Indian Railway and RDSO is member of UIC, even South Korea Railway (KORAIL) is UIC member. Therefore, before operating on main line, LOCO must get "Safety and Speed Certificate". Sir, In order to get "Safety and Speed Certificate", the BPEL will perform to haul 6 car empty rake on line over the entire network of East West at time of SAT. Please clarify on this.	It has been explained clearly in the existing clause.	No.	

3	3	3.3(a)	The maximum operating speed of the BPEL shall be 15 km/h while travelling on rail or road. It shall be designed for giving safe running behavior of the vehicle on specified track at the 'Test Speed' which shall be higher by 10% than the maximum operating speed.	The maximum speed of operation : 25 kmph	Accepted.	Yes	3
4	3	3.3(b)	The BPEL shall be designed to start and haul a trailing load of 240 tonnes (6-car empty metro train) on dry tracks with a maximum track gradient of 4% with 120 m minimum radius of curvature on main line, including turnouts and crossings. While starting the aforesaid trailing load of 240 tonnes on a section having track gradient of 4% with 120 m radius of curvature on main line the BPEL shall provide adequate acceleration to achieve a speed of 2 km/h within 20 seconds.	The BPEL shall be designed to start and haul a trailing load of 240 tonnes (6 car empty metro train) on dry tracks with a maximum track gradient of 4% with 120 m minimum radius of curvature on main line, including turnouts and crossings at a speed of 5 km/h. While starting the aforesaid trailing load of 240 tonnes on a section having track gradient of 4% with 120 m radius of curvature on main line, the BPEL shall provide adequate acceleration to achieve a speed of 5 km/h within 12 secs. While starting the aforesaid trailing load of 240 tonnes on a section having track gradient of 1% with 100m radius of curvature on main line, the BPEL shall provide adequate acceleration to achieve a speed of 10 km/h within 20 secs. (Reason: 2 km/h is too slow for using for rescuing 240 tonne train at main line. The minimum speed at 4% shall be 5 km/h, at 1% 10 km/h.)	Clause will be modified.  (Acceleration at the speed of 5 kmph within 20 seconds is accepted).	Yes	4
5	3	3.3(c)	The BPEL shall be able to generate adequate draw bar pull so as to reach a balancing speed of 7 km/h while hauling a 6-car train of 240 tonnes on a section having level tangent track. It shall be possible to control the speed from 0 to 7 km/h by the operator.	The BPEL shall be able to generate adequate draw bar pull so as to reach a balancing speed of 25 km/h while hauling a 6 car train of 240 tonnes on a section having level tangent track. It shall be possible to control the speed from 0 to 25 km/h by the operator. (Reason: 7 km/h is too slow for using for rescuing 240 tonne train at main line. We propose balancing speed at tangent as 25 km/h for quick rescuing):	Accepted.	yes	5

6	3	3.3(d)	The travel speed shall be continuously variable from 0 to 3 km/h while towing a 6-car train of 240 tonnes on track having maximum of 1 % gradient with a curve radius of 100 m	The travel speed shall be continuously variable from 0 to 10 km/h while towing a 6-car train of 240 tonnes on track having maximum of 1 % gradient with a curve radius of 100 m. (Reason: 3 km/h is too slow for using for rescuing 240 tonne train at main line. We propose balancing speed at 1% as 10 km/h for quick rescuing).	Accepted	Yes	6
7	3	3.3(e)	Under unloaded conditions, the travel speed shall be continuously variable from 0 to 15 km/h while running on tracks and shall be continuously variable from 0 to 15 km/s while running on roads.	Under unloaded conditions, the travel speed shall be continuously variable from 0 to 25 km/h while running on tracks and shall be continuously variable from 0 to 17 km/h while running on roads. (Reason: 15 km/h is too slow for using for self running at main line. We propose balancing speed at 1% as 25 km/h for quick rescuing).	Accepted	yes	7
8	3	3.3(f)	The BPEL travelling under unloaded condition on the ground shall be capable of climbing 10% gradient over a length up to 20 m.	The BPEL travelling under unloaded condition on the ground shall be capable of climbing 30% gradient continuously. (Reason: For moving the BPEL at slope in depot on road, climbing capacity 30% is preferable)	Not agreed.	No.	
9	3	3.5(c)	An Operator's Cabin having minimum height of 1600 mm inside the cabin with suitable illumination shall be provided for the BPEL. It shall have one lockable door, safety glass and screen wipers. The cab itself shall have several grips for the operator to hold on. The cabin shall have all around visibility and shall be made of 2-3 mm thick steel.	Height of 1750 mm inside the cabin. (for comfortable cabin, we propose 1750 mm)	1750 mm height inside the cabin is acceptable, since as per existing clause, min. height requirement is 1600 mm. But in any case dimension of battery loco should not infringe KMRCL's Schedule of Dimensions.	No.	

10	3	3.7(a)	The BPEL shall have a battery capacity for approximately 60 kms travelling on rail under unloaded condition at a speed ranging from 0 to 15 km/h and at least 30 kms travelling on rail under fully loaded condition (hauling a trailing load of 240 tonnes) on level tangent track at a speed ranging from 0 to 7 km/h on single charging).	The BPEL shall have a battery capacity for approximately 60 kms travelling on rail under unloaded condition at a speed ranging from 10 to 25 km/h and at least 30 kms travelling on rail under fully loaded condition (hauling a trailing load of 240 tonnes) on level tangent track at a speed ranging from 5 to 25 km/h on single charging. (Running at about 0 speed requires too long time and requires infinite energy, so the proper speed shall be specified).	Clause will be modified.	Yes	9
11	3	3.2.5	Indication for low thickness of service brake shoes	Indication of low thickness of brake shoes is not possible in BPEL due to design constraint. Hence, we request you to delete this requirement.	Not agreed, no change in tender document.	No.	
12	3	3.2.5	Indication for low hydraulic oil, if applicable.	In Niteq shunter, a Dip Stick is used for checking the oil level in hydraulic system which is an easy and maintenance free process. Request you to kindly delete this clause or allow us to use an option of a Dip Stick.	Not accepted because it is not a Shunter, it is A battery operated electric loco.	No.	
13	3	3.3 (a)	The maximum operating speed of the BPEL shall be 15 km/h while travelling on rail or road. It shall be designed for giving safe running behavior of the vehicle on specified track at the 'Test Speed' which shall be higher by 10% than the maximum operating speed.	Please note that, for this type of shunter 10 km/h speed on rail or road under unloaded condition is recommended for safe working. Hence, we request you kindly amend the clause.	Not agreed	No.	
		3.3(e)	Under unloaded conditions, the travel speed shall be continuously variable from 0 to 15 km/h while running on tracks and shall be continuously variable from 0 to 15 km/s while running on roads.				
14	3	3.3(c)	The BPEL shall be able to generate adequate draw bar pull so as to reach a balancing speed of 7 km/h while hauling a 6-car train of 240 tonnes on a section having level tangent track. It shall be possible to control the speed from 0 to 7 km/h by the operator.	Please note that, for this type of shunter 5 km/h speed is recommended for safe hauling of a 6 car train of 240 tonnes on a section having level tangent track. Hauling of shunter with load at high speed is not safe and same is not recommended. Hence, we request you, kindly amend the clause.	Please refer the remarks of SI No.4	No.	

15	3	3.3(o)	The BPEL shall have suitable sand spraying system to have adequate adhesion during operation on wet track.	NITEQ shunters are designed for hauling on dry and as well as weight track effectively, so this kind of system is not necessary. We request you to kindly delete the clause.	This is completely under the discretion of the manufacturer.	No.	
16	3	3.4(c)	The automatic coupler shall be designed for pulling or pushing of rated load. Its height shall be adjustable by hydraulic mechanism from the operator's console as well as manually after the vehicle has stopped. The automatic coupler shall be designed for pulling or pushing of rated load. Its height shall be adjustable by hydraulic mechanism from the operator's console as well as manually after the vehicle has stopped. It shall be possible to position the coupler head at the same height as that of the car coupler. Pneumatic supply for Train Brake shall be made available from the BPEL through the automatic coupler.	The coupler height adjustment can be done hydraulically from coupler side area which gives a clear vision and safe movement of coupler during coupler height adjustment. Hence, we request you to kindly modify the clause.	Accepted. Clause will be modified.	yes	8
17	3	3.5(k)	The proposed wheel life of the BPEL shall not be less than 20 years in case of rail wheels. In case of rubber tyred wheels, Contractor shall ensure supply of required number of rubber tyres on completion of its service life after expiration of DLP upon request from KMRCL. The Tenderer shall indicate the expected service life of rubber tyres in his Technical Bid.	Please note that, the life of rail wheel is depend upon the usage of shunter and condition of rails. However, the standard rail wheel life of BPEL is considered as 10 years. Hence, we request you to kindly amend the clause. \	Not agreed. Wheel life of BPEL can't be reduced.	No.	
18	3	7.1	.....Unless otherwise provided in the contract, all containers (including packing cases, boxes, tins, drums and wrappings) in which the stores are supplied by the Contractor shall be considered as non-returnable and their cost as having been included in the contract price. ....	This is acceptable that packing cases, wooden boxes, etc. will be not returnable. But Sea Container will be returnable to the shipper. We request you to modify or delete this clause.	Accepted	yes	10

**Annexure - B**  
**Addendum (Technical)**  
**Battery Powered Electric Loco [Tender No. BPEL/DSM/08(R)]**

Addendum Reference	Tender Doc. Volume No.	Clause No.	Original Text	Modified Text
1	3	1.2	The BPEL shall be used for shunting and positioning of individual cars or 3/6-car trains and other metro vehicles on different lines with standard gauge 1435 mm in Central Park Depot as well for hauling coaches/wagons carrying re-railing & rescue equipment and other relief materials over the entire network of East-West metro line of KMRCL. The BPEL may also be used to haul stranded 6-car empty rakes on line over the entire network of East-West metro in case of emergency.	The BPEL shall be used for shunting and positioning of individual cars or 3/6-car trains and other metro vehicles on different lines with standard gauge 1435 mm in Central Park Depot as well for hauling coaches/wagons carrying re-railing & rescue equipment and other relief materials over the entire network of East-West metro line of KMRCL. The BPEL may also be used to haul stranded 6-car empty rakes on line over the entire network of East-West metro in case of emergency. It should comply Modified Davies Formula as per clause no.2.3.4 of Particular Specification Vol. 3.
2	3	3.2.2	The BPEL shall be driven by AC 3-phase electric motors and powered by re-chargeable storage batteries through IGBT based inverter. Suitable battery charger, which will normally receive power from Shed supply lines, shall be provided on the BPEL for charging the batteries.	The BPEL shall be driven by AC 3-phase electric motors of minimum 195 kW capacity and powered by re-chargeable storage batteries through IGBT based inverter. Suitable battery charger, which will normally receive power from Shed supply lines, shall be provided on the BPEL for charging the batteries.
3	3	3.3(a)	The maximum operating speed of the BPEL shall be 15 km/h while travelling on rail or road. It shall be designed for giving safe running behavior of the vehicle on specified track at the 'Test Speed' which shall be higher by 10% than the maximum operating speed.	The maximum operating speed of the BPEL shall be 25 km/h while travelling on rail or road. It shall be designed for giving safe running behavior of the vehicle on specified track at the 'Test Speed' which shall be higher by 10% than the maximum operating speed.

4	3	3.3(b)	The BPEL shall be designed to start and haul a trailing load of 240 tonnes (6-car empty metro train) on dry tracks with a maximum track gradient of 4% with 120 m minimum radius of curvature on main line, including turnouts and crossings. While starting the aforesaid trailing load of 240 tonnes on a section having track gradient of 4% with 120 m radius of curvature on main line the BPEL shall provide adequate acceleration to achieve a speed of 2 km/h within 20 seconds.	The BPEL shall be designed to start and haul a trailing load of 240 tonnes (6-car empty metro train) on dry tracks with a maximum track gradient of 4% with 120 m minimum radius of curvature on main line, including turnouts and crossings. While starting the aforesaid trailing load of 240 tonnes on a section having track gradient of 4% with 120 m radius of curvature on main line the BPEL shall provide adequate acceleration to achieve a speed of 5 km/h within 20 seconds.
5	3	3.3(c)	The BPEL shall be able to generate adequate draw bar pull so as to reach a balancing speed of 7 km/h while hauling a 6-car train of 240 tonnes on a section having level tangent track. It shall be possible to control the speed from 0 to 7 km/h by the operator.	The BPEL shall be able to generate adequate draw bar pull so as to reach a balancing speed of 25 km/h while hauling a 6-car train of 240 tonnes on a section having level tangent track. It shall be possible to control the speed from 0 to 25 km/h by the operator.
6	3	3.3(d)	The travel speed shall be continuously variable from 0 to 3 km/h while towing a 6-car train of 240 tonnes on track having maximum of 1 % gradient with a curve radius of 100 m	The travel speed shall be continuously variable from 0 to 5 km/h while towing a 6-car train of 240 tonnes on track having maximum of 1 % gradient with a curve radius of 100 m.
7	3	3.3(e)	Under unloaded conditions, the travel speed shall be continuously variable from 0 to 15 km/h while running on tracks and shall be continuously variable from 0 to 15 km/s while running on roads.	Under unloaded conditions, the travel speed shall be continuously variable from 0 to 25 km/h while running on tracks and shall be continuously variable from 0 to 25 km/s while running on roads.
8		3.4(c)	The automatic coupler shall be designed for pulling or pushing of rated load. Its height shall be adjustable by hydraulic mechanism from the operator's console as well as manually after the vehicle has stopped. It shall be possible to position the coupler head at the same height as that of the car coupler. Pneumatic supply for Train Brake shall be made available from the BPEL through the automatic coupler.	The automatic coupler shall be designed for pulling or pushing of rated load. Its height shall be adjustable by hydraulic mechanism from the operator's console / coupler side area as well as manually after the vehicle has stopped. It shall be possible to position the coupler head at the same height as that of the car coupler. Pneumatic supply for Train Brake shall be made available from the BPEL through the automatic coupler.

9	3	3.7(a)	<p>The BPEL shall have a battery capacity for approximately 60 kms travelling on rail under unloaded condition at a speed ranging from 0 to 15 km/h and at least 30 kms travelling on rail under fully loaded condition (hauling a trailing load of 240 tonnes) on level tangent track at a speed ranging from 0 to 7 km/h on single charging).</p>	<p>The BPEL shall have a battery capacity for approximately 60 kms travelling on rail under unloaded condition at a speed ranging from 10 to 25 km/h and at least 30 kms travelling on rail under fully loaded condition (hauling a trailing load of 240 tonnes) on level tangent track at a speed ranging from 5 to 25 km/h on single charging.</p>
10	3	7.1	<p>.....Unless otherwise provided in the contract, all containers (including packing cases, boxes, tins, drums and wrappings) in which the stores are supplied by the Contractor shall be considered as non-returnable and their cost as having been included in the contract price. ....</p>	<p>.....Unless otherwise provided in the contract, all containers (including packing cases, boxes, tins, drums and wrappings) in which the stores are supplied by the Contractor shall be considered as non-returnable (except the Sea Container, if applicable, which will be returnable to the shipper) and their cost as having been included in the contract price. ....</p>