Terms of Reference

***If any of the technical parameters are not feasible, indicate the specific parameter and offer a possible solution.***

**Hydrogen-powered** (with electrical energy generated by hydrogen fuel cell system) **bus** (hereinafter referred to as – the Vehicle):

|  |  |  |
| --- | --- | --- |
| Vehicle category, class and application | Vehicle category M3, Class I.  Low-floor (without steps in doorways and main gangways) electrically-driven Vehicle designed and intended for the carriage of passengers within an urban agglomeration. | |
| Source of electrical energy | The Vehicle must be equipped with a hydrogen fuel cell system (Proton Exchange Membrane Fuel Cells (PEMFC)) that supplies the Vehicle with power; the Vehicle must have a driving range (with one hydrogen charge) of at least 250 km at -200C (minus twenty degrees Celsius) in active driving mode. | |
| Fuelling equipment | Compatibility of charging equipment with offered Vehicles must be ensured according to Cabinet of Ministers Regulations No. 78 (06.02.2018) – *Requirements for charging of electrical vehicles, natural gas fuelling, and hydrogen fuelling and shore power supply equipment.* | |
| Climatic conditions | The Vehicle, its systems and sub-systems must safely operate at an ambient temperature range from -400C to +400C (at a relative air humidity of 98% at a temperature up to +250C). | |
| DIMENSIONS | | |
| Length (mm) | | Not less than 11 800, not more than 12 100 |
| Width (mm) (rear view mirrors excluded) | | Not less than 2 530, not more than 2 550 |
| Height (roof-mounted equipment included) (mm) | | ≤ 3 400,  when tyres are inflated to the specified air pressure, the air suspension system is set to working mode, and the bodywork kneeling system is switched off |
| PASSENGER CAPACITY | | |
| Number of passengers, total | | ≥ 76 |
| Number of seats | | ≥ 22 (folding seats excluded) |
| Wheelchair spaces | | 1 |
| Baby carriage spaces | | 1 |
| PASSENGER DOORS | | |
| Number of passenger doors | | double doors, 3 |
| Floor height at 1st/2nd/3rd passenger door | | 320 /320 / 320-340 mm,  when tyres are inflated to the specified air pressure, the air suspension system is set to working mode, and the bodywork kneeling system is switched off |
| Technical devices facilitating the access of passengers with reduced mobility to the Vehicle | | Extendable (electromechanically driven) platform, located at the 2nd passenger door. |
| AXLES | | |
| Number of axles | |  |
| 1st axle | | With independent wheel suspension |
| 2nd axle | | Drop-center drive-axle with in-wheel motors |
| Tyres | | 275/70 R22.5 |
| Clearance | | ≥ 135 mm,  at the rated tyre pressure and maximum Vehicle load |
| TRACTION DRIVE | | |
| Drive | | Drive-axle with two integrated electrical motors |
| Type of engine | | Alternating current (synchronous or asynchronous) motor |
| Rated voltage | | 400 V AC |
| DYNAMIC CHARACTERISTICS | | |
| Maximum operating speed (with speed limiter) | | 80 km/h |
| *Vehicle acceleration (fully laden):* | | |
| Average acceleration 0-25 km/h | | 1.2 m/s2 |
| Maximum jerk / acceleration increase must not exceed | | 1.45 m/s3 |