II DESCRIPTION

2.1 TITLE OF INVENTION: Electrical Hybrid Ultra Low Pollution Transporter

2.2 DESCRIPTION

2.2.1 Introduction:

2.2.1.1 Hitherto hybrid non-polluting transporters have been configured with an engine providing basic, "constant speed" propulsion. An electric motor, however, is used as a supplementary propulsion source to, either increase traction, to the wheels during acceleration, to overtake or go up a gradient, and reduce traction, when breaking by regeneration, to convert mechanical intro electrical power, to charge a battery.

2.2.1.2 Unlike a normal vehicle, whereby the normal vehicle is propelled by an engine, in this invention, ("the transporter") the engine is replaced by motors. This makes the transporter totally benign and incapable of environmental pollution.

2.2.2 Description:

2.2.2.1 A 48 Volt Accumulator powers the transporter. To ensure that the transporter operates at full available power all the time, a switched mode booster is included to maintain a bank of super capacitors at 60Volts DC. To work auxiliaries like lights, horn etc, a 48 / 12Volt inverter is provided.

2.2.2.2 Power is delivered and regulated by Pulse-With-Modulation, to the motor via a quadrant controller, to regulate speed and torque, for cruising applications. A second Motor is coupled to the output shaft via a gearbox and switched in to provide supplementary torque required to accelerate or go up hill, or over take another vehicle (See: *1* of **Figure 1** of the drawings on the process).

2.2.2.3 During deceleration, the motor develops power as a generator and charges the accumulator. At the end of the day or journey the accumulators are recharged by using, either a home charger as in (Option A) or using Fuel Cells on board as in (Option B), or by Solar panels (Option C) mounted on the transporter, or using an engine (Option D) based generator running on hydrogen or fossil fuel, but at constant speed tuned lean to reduced emission of pollutants. Alternatively any combination of the said options are possible to charge the transporter cumulator.

When the transporter is stationary while waiting to load or unload, or at traffic lights, the engine does not run, thereby becoming energy efficient and non-polluting (See: *2 of* **Figure 1** of the drawings on the process).

2.2.2.4 Energy replenishment can be achieved by:-

2.2.2.5 Firstly, for light load / duty cycle, overnight charging using the domestic power should be adequate.

2.2.2.6 Secondly, for demanding applications, fuel cells can be used "on board" to continuously charge the batteries. Fuel cells powered by hydrogen, have been accepted as being benign.

2.2.2.7 Thirdly, the body of the transporter can be fitted with Solar Electric Cells to effect supplementary charging of the batteries during daylight hours, which once again is benign.

2.2.2.8 Fourthly, a very small gas /diesel fired engine can be installed to auto start on sensing a depleted battery, and run at constant speed, to restore charge. At constant speed the engine can be tuned for least emission and such emissions trapped by a catalytic converter.

Any permutation or combination of a home charger, Fuel Cells or Solar panels mounted on the transporter, or using an engine based generator running on hydrogen or fossil fuel are possible energy replenishment for transporter. This creates a highly efficient public / private transporter with minimum or zero pollutants.

III CLAIMS

3.1 Transporter does not pollute the atmosphere.

3.2 Transporter has minimum noise pollution.

3.3 Using alternative energy, it saves on fossil fuel, a depleting resource.

3.4 Energy used by the transporter can be replenished using four options or by any suitable combination, making it an ideal solution, for short range urban transport requirements.