Claims

1. A power supply system, comprising a first node, a second node, and an electrically conducting cable, wherein the first node is connected to the second node via the electrically conducting cable, wherein

the cable is for conducting alternating current at a frequency of at least 350 Hz between the first and second nodes, and

the electrically conducting cable is a capacitive cable, wherein the capacitive cable is a cable that has a capacitive coupling within its conductor / conductive elements and is represented in a circuit diagram by a capacitor.

2. A power supply and distribution network comprising a power supply system according to claim 1.

3. A wireless electric vehicle charging system comprising a power supply system according to claim 1.

4. A power supply system according to claim 1, wherein the second node is connected to one or more electrical appliances that convert the power into heat, light and/or mechanical work, such as motors, actuators, light bulbs, heaters, instruments, machines etc that operate using power at a frequency of at least 350 Hz.

5. A power supply system according to claim 1 or claim 4 wherein the second node is connected to a converter that reduces the frequency down to about 50 or to about 60 Hz.

6. A power supply system according to any of claims 1 to 5, wherein the capacitive cable is of length 5 m or greater.

7. A power supply system according to any of claims 1 to 6 wherein the current has a frequency of at least 20 kHz.

8. A power supply system according to any of claims 1 to 7 wherein the current has a frequency of at least 80-85 kHz.

9. An airport, seaport, aircraft or ship comprising a power supply system according to any of claims 1 to 8.

10. A method of supplying power between 2 nodes in a power supply system, comprising

providing a first node, a second node, and an electrically conducting cable, wherein the first node is connected to the second node via the electrically conducting cable, and

providing power to the first node, wherein

the power is alternating current at a frequency of at least 350 Hz, and

the electrically conducting cable is a capacitive cable, wherein the capacitive cable is a cable that has a capacitive coupling within its conductor / conductive elements and is represented in a circuit diagram by a capacitor.

11. A method according to claim 10 wherein the current has a frequency of at least 20 kHz.

12. A wireless electric vehicle charging system, comprising

(a) a power supply,

(b) an inverter connected to the power supply and adapted to output power at a frequency of at least 350 Hz, and

(c) a plurality of wireless charging stations, each comprising at least one transmitter,

wherein the inverter is connected to each of the plurality of wireless charging stations using a capacitive cable, wherein the capacitive cable is a cable that has a capacitive coupling within its conductor / conductive elements and is represented in a circuit diagram by a capacitor.

13. A wireless electric vehicle charging system according to claim 12, wherein the inverter is connected to at least 5 wireless charging stations.

14. A wireless electric vehicle charging system according to any of claims 12 to 13, wherein the power output of the inverter is polyphasic and power from different phases is supplied to different wireless charging stations.

15. A wireless electric vehicle charging system according to claim 14, wherein the inverter is a 3-phase inverter.

16. A wireless electric vehicle charging system according to any of claims 12 to 15, for charging one or more stationary electric vehicles.

17. A wireless electric vehicle charging system according to any of claims 12 to 15, for charging one or more moving electric vehicles.

18. A wireless electric vehicle charging system according to any of claims 12 to 17, wherein the wireless electric vehicle charging system is provided as two or more sub-systems, each having:

(a) an inverter connected to a power supply and adapted to output power at a frequency of at least 350 Hz, and

(b) a plurality of wireless charging stations, each comprising at least one transmitter,

wherein the inverter is connected to each of the plurality of wireless charging stations using a capacitive cable, and

wherein

the inverters of the two sub-systems are connected in parallel to the power supply,

the capacitive cable in each sub-system is connected to the capacitive cable in one of the other sub-systems, and

each sub-system acts as a backup system for one of the other sub-systems in the event that one of the inverters ceases to function.

19. A wireless electric vehicle charging system according to claim 18, wherein

(a) the power output of the inverter is polyphasic, and

(b) each phase of the capacitive cable in each sub-system is connected to the same phase of the capacitive cable in the other sub-system.

20. A method of charging an electric vehicle, comprising positioning the electric vehicle in the proximity of a wireless charging station, being part of a wireless electric vehicle charging system according to any of claims 12 to 19.