CLAIMS

1. A smart socket configured to be in electrical connection with an alternating current (AC) power supply and to electrically connect an electrical appliance with the AC power supply, the electrical appliance provided with an electrical plug, the electrical plug having a live pin and a neutral pin configured to be inserted into the smart socket, the smart socket comprising:

a housing having at least one opening for insertion of a live wire and a neutral wire into the housing, the live wire and the neutral wire configured to be in electrical communication with the AC power supply, the housing further comprising a live opening for insertion of the live pin into the housing and a neutral opening for insertion of the neutral pin into the housing,

a live conductor provided in the housing to electrically connect the live pin with the live wire within the housing;

a neutral conductor provided in the housing to electrically connect the neutral pin with the neutral wire within the housing;

a current sensor;

a metering chip in the housing to obtain data including voltage of the AC power supply and current from the current sensor when the live pin and the neutral pin have been inserted into the housing and the electrical appliance is in electrical connection with the AC power supply; ~~and~~

a contact switch provided in the housing, the contact switch being not in electrical contact with the live conductor or the neutral conductor when the electrical plug is not inserted into the smart socket,

wherein the contact switch is configured to form electrical contact with one of: the live conductor and the neutral conductor by one of: the live pin and the neutral pin respectively upon insertion of the live pin and the neutral pin into the live opening and the neutral opening respectively, closing a circuit to supply power from the AC power supply to the metering chip, and

wherein the contact switch is configured to lose electrical contact with one of: the live conductor and the neutral conductor by one of: the live pin and the neutral pin respectively upon removal of the live pin and the neutral pin from the live opening and the neutral opening respectively, opening the circuit to cut power from the AC power supply to the metering chip; and

a communication module in the housing to transmit the data from the metering chip to a communication gateway.

2. The smart socket of claim 1, wherein the current sensor comprises a current sensing portion provided on one of: the live conductor and the neutral conductor.

3. The smart socket of claim 2, wherein the current sensing portion is integral with the one of: the live conductor and the neutral conductor.

4. The smart socket of claim 2, wherein the current sensing portion comprises a length of a metal along the live conductor or the neutral conductor.

5. The smart socket of claim 3, wherein the metal is a manganese-copper alloy.

6. The smart socket of claim 2 or claim 3, further comprising wiring provided at each end of the length of the current sensing portion to obtain a potential difference across the current sensing portion for obtaining the current.

~~7. The smart socket of any one of the preceding claims, further comprising a contact switch provided in the housing adjacent one of: the live opening and the neutral opening, the contact switch configured to be moved into electrical contact with one of: the live conductor and the neutral conductor by one of: the live pin and the neutral pin respectively upon insertion of the live pin and the neutral pin into the live opening and the neutral opening respectively, wherein power is supplied from the AC power supply to the metering chip only when the contact switch is in contact with one of: the live conductor and the neutral conductor.~~

~~8.~~7. The smart socket of any one of the preceding claims, wherein the communication gateway is remotely accessible via an application module installed in a smart device to allow retrieval and display of the data and to allow turning off and on of the power supply from the AC power supply to the electrical appliance.

~~9.~~8. The smart socket of any one of the preceding claims, wherein the communication module is configured to function as a node of a communication mesh to receive data from and transmit data to other nodes in the communication mesh including the communication gateway.

~~10.~~9. The smart socket of any one of the preceding claims, wherein the communication module comprises a Bluetooth low-energy module and the communication gateway comprises a Bluetooth gateway.

~~11.~~10. The smart socket of any one of the preceding claims, wherein the data further includes active power, reactive power, power factor, frequency, kilowatt hour (kWh), and kilo volt amperes reactive hours (kvarh).

11. The smart socket of any one of the preceding claims, wherein the contact switch includes a resilient electrically conductive strip and movement of the contact switch to close the circuit to supply power from the AC power supply to the metering chip or to open the circuit to cut power from the AC power supply to the metering chip includes elastic deformation of the contact switch.