Possible issues relating to charging problems:

On Vauxhall Antara models the body Control Module (BCM) communicates with the engine control module (ECM) and the instrument panel cluster for electrical power management.

The BCM determines the output of the alternator and sends the information to the ECM for control of the generator turn on signal circuit.

It monitors the generator field duty cycle signal circuit information sent from the ECM for control of the alternator. It monitors a battery current sensor, the battery positive voltage circuit, and

estimated battery temperature to determine battery state of charge.

The BCM will enter Charge Mode whenever one of the following conditions are met:

• The wipers are ON for than 3 seconds.

• GMLAN (Climate Control Voltage Boost Mode Request) is true, as sensed by the HVAC control head. High speed cooling fan, rear defogger and HVAC high speed blower operation can cause the BCM to enter the Charge Mode.

- The estimated battery temperature is less than  $0^{\circ}C(32^{\circ}F)$ .
- Battery State of Charge is less than 80 percent.
- Vehicle speed is greater than 145 km/h (90 mph)
- Current sensor fault exists.
- System voltage was determined to be below 12.56 V

When any one of these conditions is met, the system will set targeted generator output voltage to a charging voltage between 13.9-15.5 V, depending on the battery state of charge and estimated battery temperature.