CLAIMS

1. A switching control device comprising:

a controller configured to control a switching unit that is able to switch a power source of an air conditioning appliance of an electric bus operating according to a predetermined schedule to a first electricity storage functional unit or a predetermined power source, the first electricity storage functional unit being a power source of a motor that causes the electric bus to travel, and the predetermined power source being different from the first electricity storage functional unit;

a prediction unit configured to predict a charging time during which the first electricity storage functional unit is able to be charged by a charger at a first position at which the first electricity storage functional unit is able to be charged; and

a calculator configured to calculate, based on the schedule, a first electricity storage amount of the first electricity storage functional unit required for driving the motor to a second position excepting a charging amount charged to the first electricity storage functional unit at the first position corresponding to the charging time, the second position being a destination, wherein,

when an electricity storage amount of the first electricity storage functional unit is equal to or smaller than the first electricity storage amount, the controller controls the switching unit to switch the power source of the air conditioning appliance to the predetermined power source from the first electricity storage functional unit.

2. The switching control device according to claim 1, wherein the calculator calculates, as the first electricity

storage amount, an electricity storage amount larger than the electricity storage amount required for driving the motor to one of the first position and the second position, at which the electric bus stops earlier.

3. The switching control device according to claim 1, wherein the prediction unit predicts the charging time based on arrival time of the electric bus at the first position according to the schedule.

4. The switching control device according to claim 1, wherein the calculator calculates the first electricity storage amount based on a traveling distance of the electric bus per predetermined electricity storage amount and a distance to the first position.

5. The switching control device according to claim 1, wherein

the prediction unit predicts the charging time based on at least one of a congestion state of a road to the second position and a shape of the road to the second position, and

the calculator calculates the first electricity storage amount based on at least one of the congestion state of the road to the second position and the shape of the road to the second position.

6. The switching control device according to claim 1, wherein the predetermined power source is a second electricity storage functional unit different from the first electricity storage functional unit, or a power generator.

7. The switching control device according to claim 1, wherein the prediction unit and the calculator are arranged in an onboard PC arranged in the electric bus.

8. The switching control device according to claim 1, wherein the controller receives the first electricity storage amount from an external server in which the prediction unit and the calculator are arranged, and when the electricity storage amount of the first electricity storage functional unit is equal to or smaller than the received first electricity storage amount, the controller controls the switching unit to switch the power source of the air conditioning appliance to the predetermined power source from the first electricity storage functional unit.

9. A switching control method comprising:

predicting a charging time during which a first electricity storage functional unit is able to be charged by a charger at a first position at which the first electricity storage functional unit is able to be charged, the first electricity storage functional unit being an electricity storage functional unit serving as a power source of a motor that causes an electric bus to operate according to a predetermined schedule to travel;

calculating, based on the schedule, a first electricity storage amount of the first electricity storage functional unit required for driving the motor to a second position excepting a charging amount charged to the first electricity storage functional unit at the first position corresponding to the charging time, the second position being a destination; and

when an electricity storage amount of the first electricity storage functional unit is equal to or smaller

than the first electricity storage amount, controlling a switching unit to switch, from the first electricity storage functional unit, a power source of an air conditioning appliance of the electric bus to a predetermined power source different from the first electricity storage functional unit.