GOAL

1. Goal of the Green Qupermarket Challenge The goal of the Green Qupermarket challenge is to analyze how quantum technology can optimize the energy consumption model of supermarkets in regard to its CO2 emissions. The challenge scenario features a supermarket, multiple electric vehicles, and various weather conditions. The energy management of the supermarket is to be optimized so that the total CO2 emission is minimal by using the green decentrally generated energy out of electric vehicles. The batteries of the electric vehicles can be used as additional storage capacity.

STRATEGY FOLLOWED:

The charging is carried out by a mixed method mode where the Solar Panels contribute to the major portion. The comparisons are followed in an order mentioned below

Scenario 1:

if the available load > generation then the PV panels along with the auto sync are drawing the load from the Utility

Scenario 2:

If the available load< Generation then PV panels are providing the power where as the generation is being utilized to charge the batteries

The following CO2 methods are utilized

1. The CO2 emissions are recorded by smart emission sensor installed in each car that directly communicates over the network to send CO2 emission data to the post processor installed the market
2. The CO2 sensors are installed at the market itself to assess the CO2 percentage
3. The weather reports are being assessed to obtain the data

Combined with these three a median can be obtain to forecast the percentage of the photon packets that may be available to charge the batteries.