PV generation data,

Load data,

Price data,

Problem: Trad-off, store electricity or use it now?

PV: P\_pv = Ir \* area\* efficiency\*(1-loss)\*number of panels

Battery: min SOC 5%, max charge rate, capacity. P\_b

Load: P\_l

Physical model:

Fixed parameters：

Area of PV, N of PV, efficiency and loss of PV, marginal cost of PV(5% lower of price)

INPUT:

Irradiation of 5 hours in the future

Load of 5 hours in the future

Price of of 5 hours in the future

Contrains, P\_b<= max charge rate, SOC>= 5%

Output, actions to take.

PV Battery charge amount.

Grid charge amount.

Object: sum(C\_tot\_i )= P\_pv\*c\_pv+ P\_battery\*0+P\_grid\*P\_grid

**Total**

Total D=D1+..D5

Total Pg=Pg1+..Pg5

Total Pp=Pp1+..Pp5

Battery Pb=p1

Total E=Pg+p1+Pp>=D

Grid consumption in I : P\_gi >= P\_di-P\_vi-P\_bi>=0.