System Operation Flow Chart

Periods (T) & Hours (i) Timeline

T=Day 1 ⟶ T=Day N

i= 1 ⟶ i= 24

| Uncertain Wind Power Input each Hour and Day | ⟶ | Store Energy into Storage Device with Maximum Capacity R_j |

Power Flow Commitment y_{it}

Unmet Demand f_u & Energy Loss f_d between each Hour and Day

Price p_{ti} each Hour and Day

Decision of Commit Power Flow x_{ti} to Power Demand each Hour and Day

Day Reward Function (Max Revenue from x_{ti} each Day)

Day Total Cost f_d and f_u each Next Day

Value Function (Max Profit each Day)

Max Profit each Day under the Constrain of the Maximum Battery Capacity