**Overview Inputs Tutorial 1:**

1. **Wind, PV & Load Model**

*Scenario Data*

* load\_data.txt
* number of houses = 5 (load input data)
* winddata\_NL.txt
* pv\_data\_Rotterdam\_NL-15min.txt

*PV Inputs*

|  |  |
| --- | --- |
| **Input** | **Value** |
| Module Area | 1.26[m^2] |
| NOCT | 44 [°C] |
| Module Efficieny | 0.198 |
| Irradiance at NOCT | 800 [W/m^2] |
| Power Output at STC | 250 [W] |
| Peak Power | 600 [W] |
| Module Tilt | 14 ° |
| Module Azimuth | 180° |
| Installed Capacity | 500 W (= 0.5 kW) |

*Wind Inputs*

|  |  |
| --- | --- |
| **Input** | **Value** |
| Rated Power | 0.3 kW |
| Rated Wind Speed (u\_rated) | 10.3 m/s |
| Cut In Wind Speed (u\_cutin) | 2.8 m/s |
| Cut Out Wind Speed | 25 m/s |
| Cp (Coefficient of Power) | 0.4 |
| Diameter | 2 |
| (output type) | (power) |

1. Wind, PV, Load & Battery

Logic Controller: if more power generated than consumed by neighbourhood -> charge battery (left over power gets dumped in grid), if less power generated than consumed by neighbourhood -> discharge battery (until minimum SOC then take power from grid)

Time Shifted Connection between Battery and battery controller: SOC from previous time step

Sequence Simulators at each step : Load -> PV -> Wind -> Controller -> Battery

Note: Load, PV and Wind are independent from each other so here sequence flexible (but important all three execute before controller)

PV & Wind Inputs are the same as in first case

*Battery Inputs*

|  |  |
| --- | --- |
| **Input** | **Value** |
| Initial SOC (defined at time shifted connection) | 80 % |
| Charge Efficiency | 0.9 |
| Discharge Efficiency | 0.9 |
| Max Power | 0.8 kW |
| Min Power | -0.8 kW |
| SOC Max | 90 |
| SOC Min | 10 |
| Max Energy | 0.8 |
|  |  |