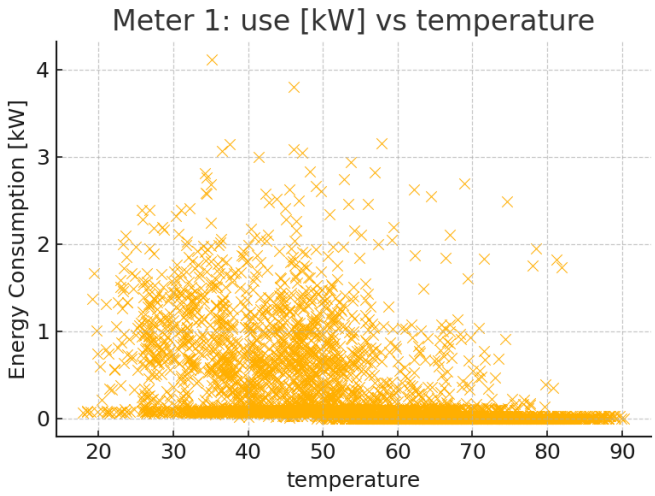
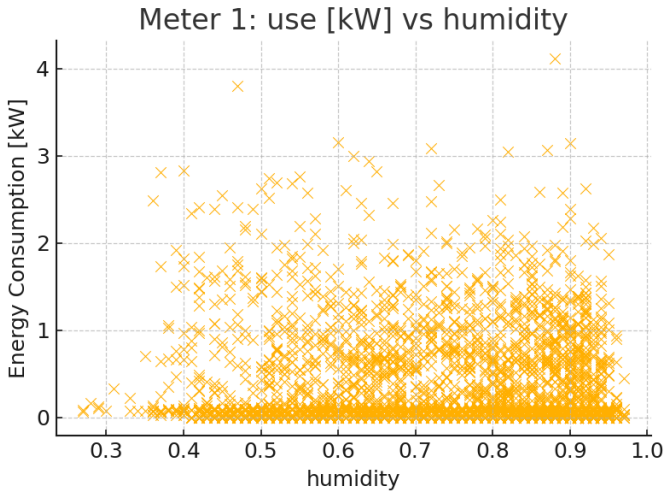
Energy Consumption Analysis with Weather Features

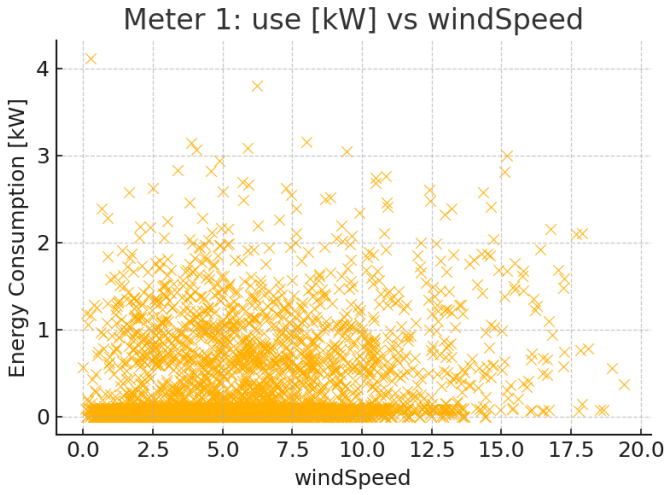
This document analyzes the relationship between energy consumption data and weather features
for four meters. Each section includes a correlation matrix and scatter plots showing the
relationships between energy consumption and selected weather variables such as temperature,
humidity, wind speed, and more.

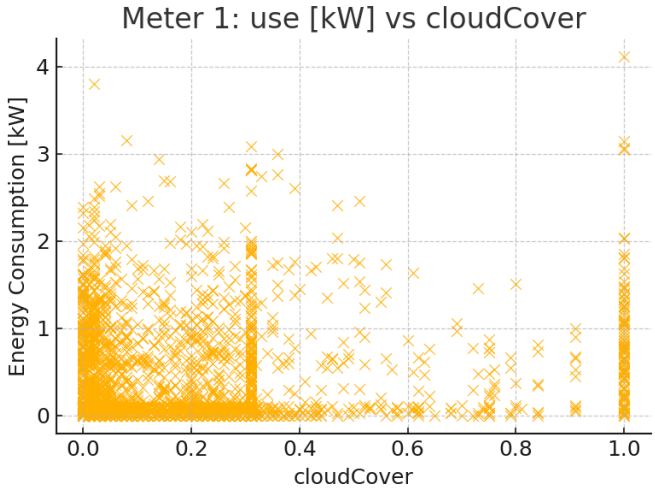
Meter 1 Analysis

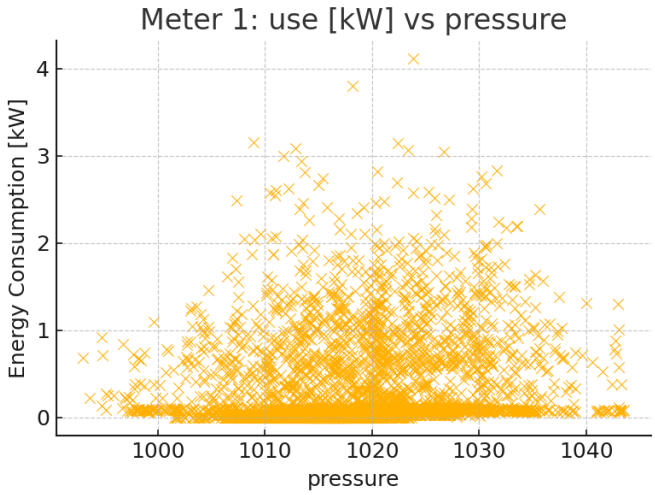
The heatmap below shows the correlation matrix for Meter 1, illustrating the relationships between energy consumption and weather features.





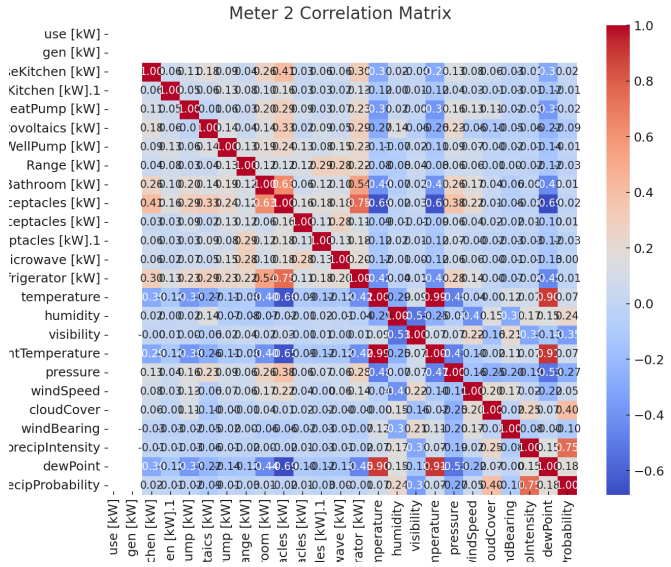

Meter 1: use [kW] vs windSpeed
Energy Consumption [kW]
0
1
2
3
4
0.0
2.5
5.0
7.5
10.0
12.5
15.0
17.5
20.0
windSpeed


Meter 1: use [kW] vs cloudCover
Energy Consumption [kW]
0
1
2
3
4
0.0
0.2
0.4
0.6
0.8
1.0
cloudCover

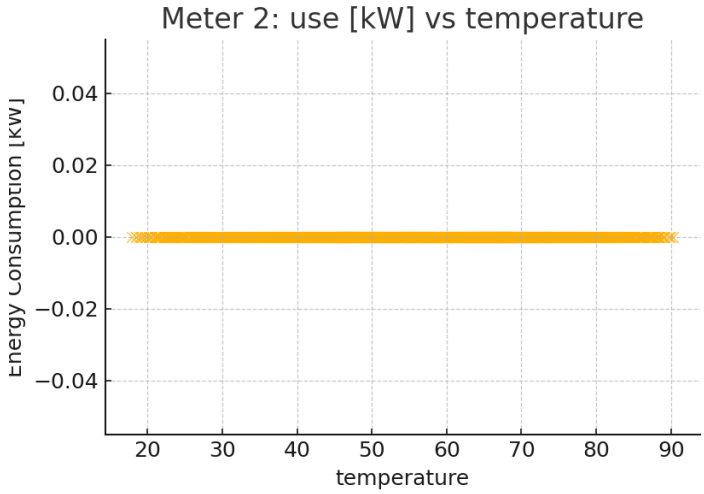

Meter 1: use [kW] vs pressure
Energy Consumption [kW]
0
1
2
3
4
1000
1010
1020
1030
1040
pressure

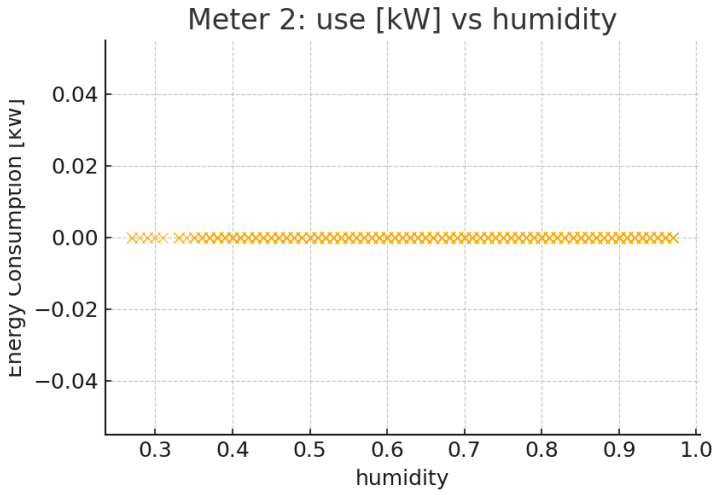
Meter 2 Analysis

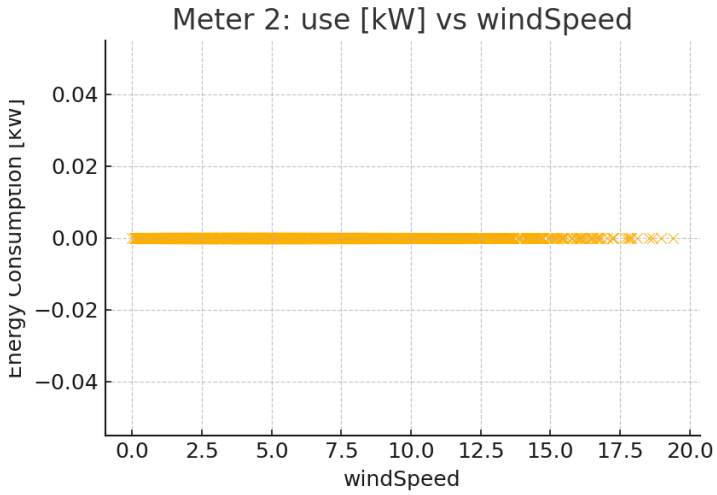
The heatmap below shows the correlation matrix for Meter 2, illustrating the relationships between energy consumption and weather features.

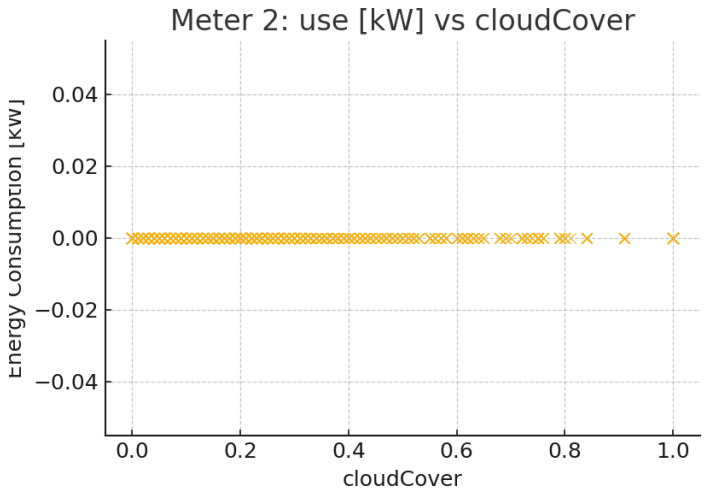


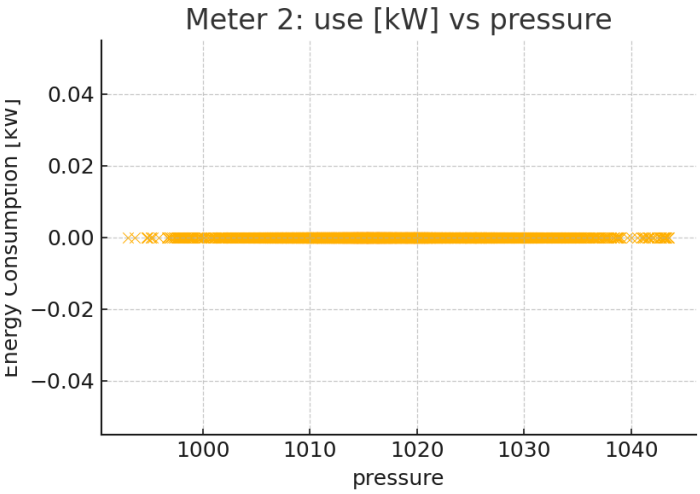
The scatter plots below highlight the relationships between energy consumption and key weather features for Meter 2.




Meter 2: use [kW] vs humidity
Energy Consumption [kW]
0.04
0.02
0.00
−0.02
−0.04
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
humidity

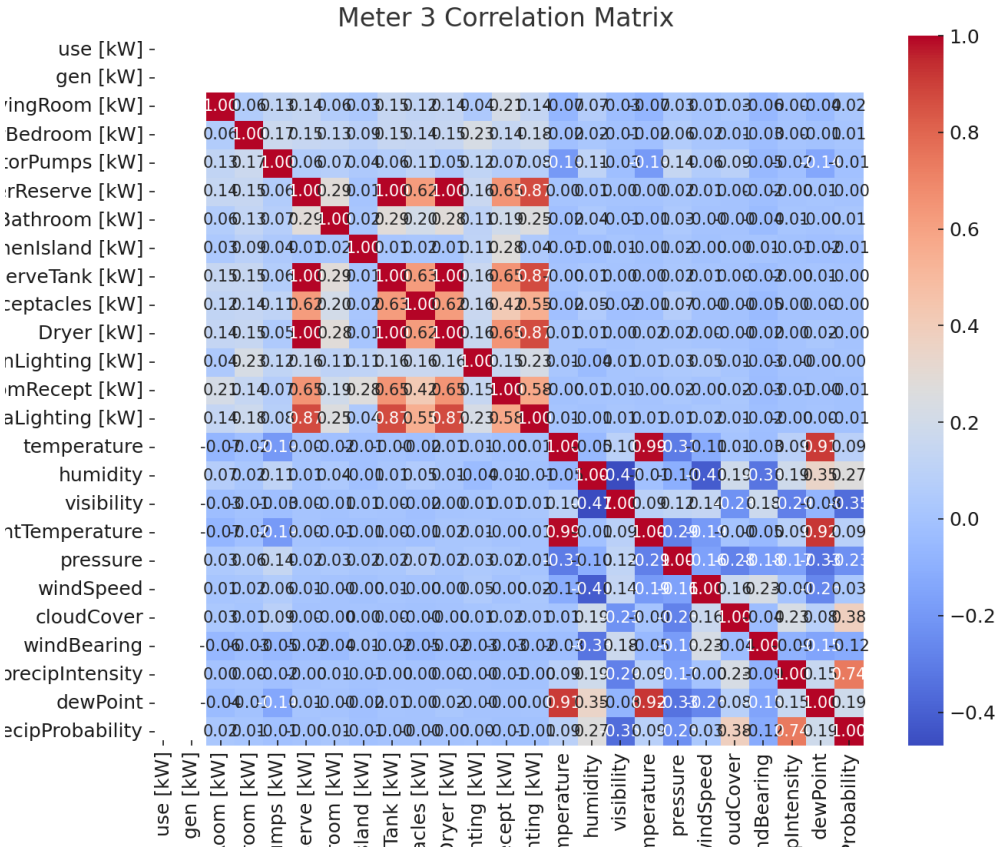

Meter 2: use [kW] vs windSpeed
Energy Consumption [kW]
0.04
0.02
0.00
−0.02
−0.04
0.0
2.5
5.0
7.5
10.0
12.5
15.0
17.5
20.0
windSpeed


Meter 2: use [kW] vs cloudCover
Energy Consumption [kW]
0.04
0.02
0.00
−0.02
−0.04
0.0
0.2
0.4
0.6
0.8
1.0
cloudCover

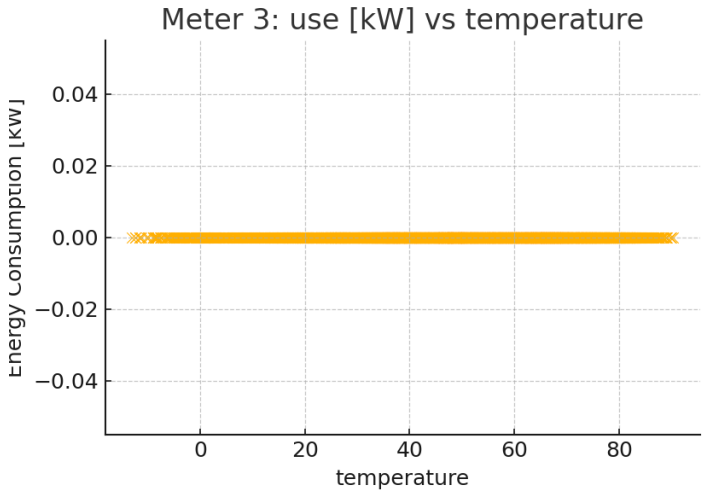


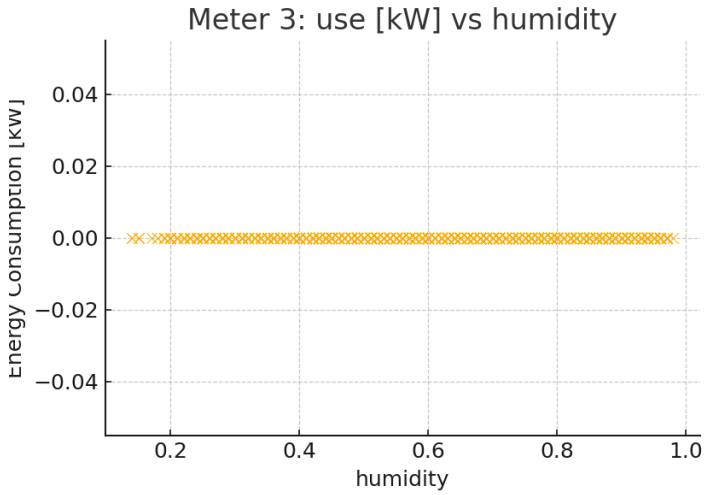
Meter 3 Analysis

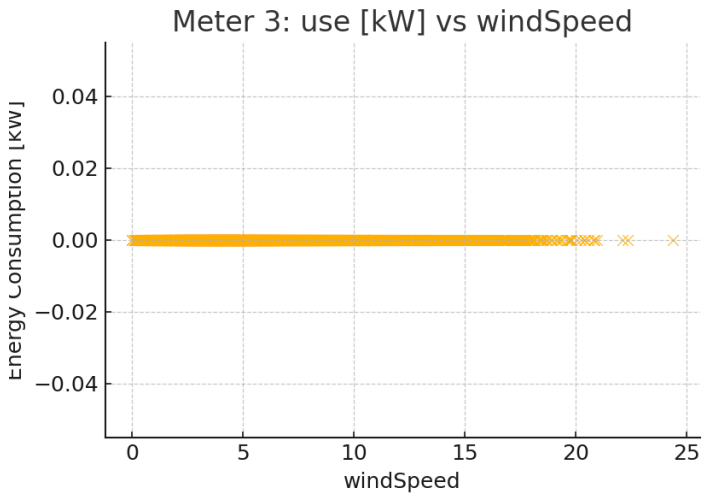
The heatmap below shows the correlation matrix for Meter 3, illustrating the relationships between energy consumption and weather features.

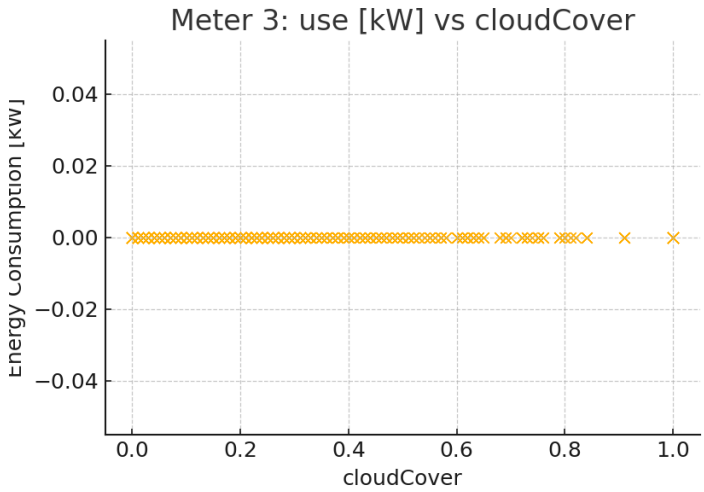


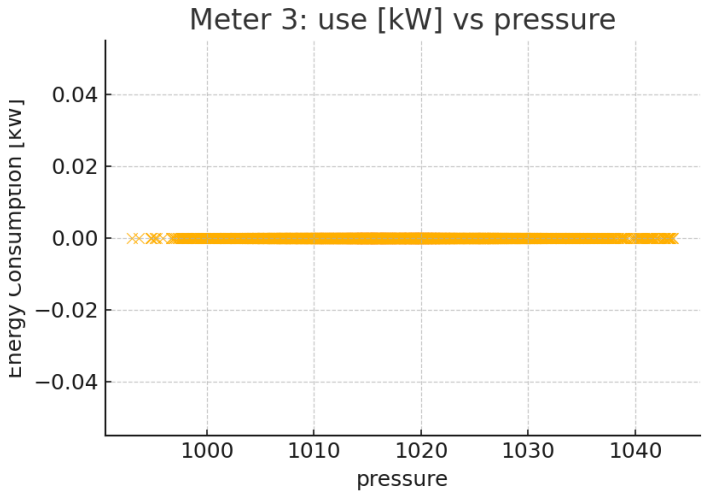
The scatter plots below highlight the relationships between energy consumption and key weather features for Meter 3.


Meter 3: use [kW] vs temperature
Energy Consumption [kW]
0.04
0.02
0.00
−0.02
−0.04
0
20
40
60
80
temperature


Meter 3: use [kW] vs humidity
Energy Consumption [kW]
0.04
0.02
0.00
−0.02
−0.04
0.2
0.4
0.6
0.8
1.0
humidity

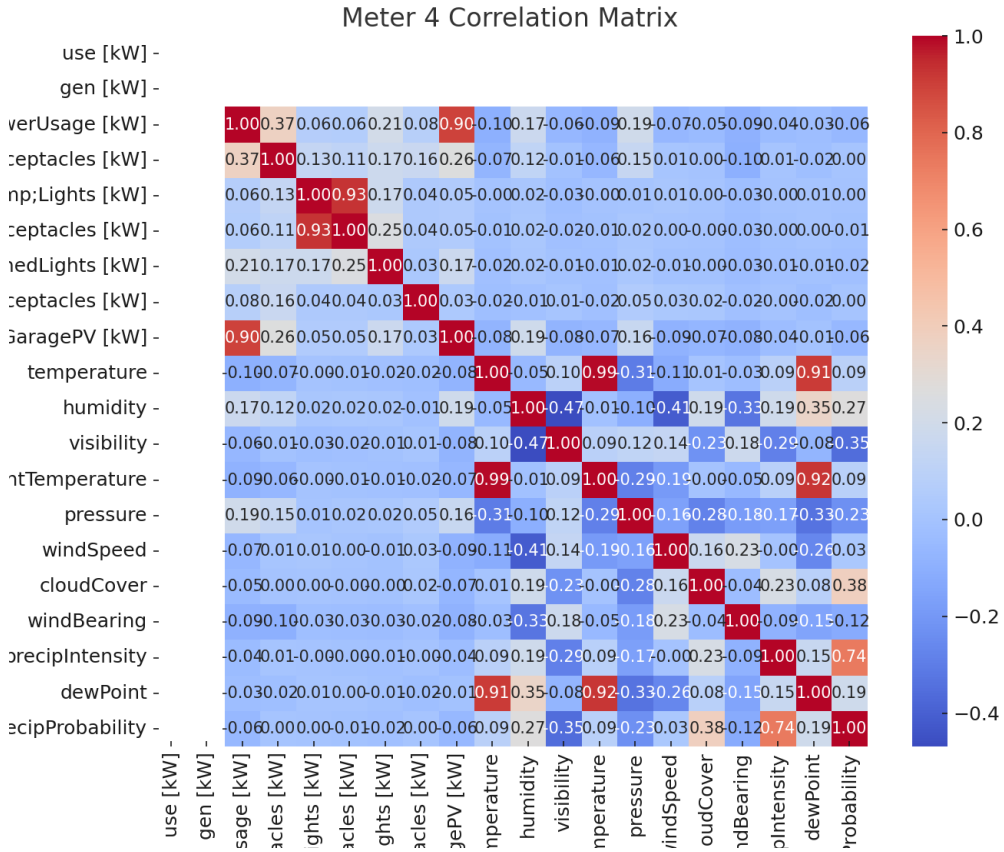

Meter 3: use [kW] vs windSpeed
Energy Consumption [kW]
0.04
0.02
0.00
−0.02
−0.04
0
5
10
15
20
25
windSpeed



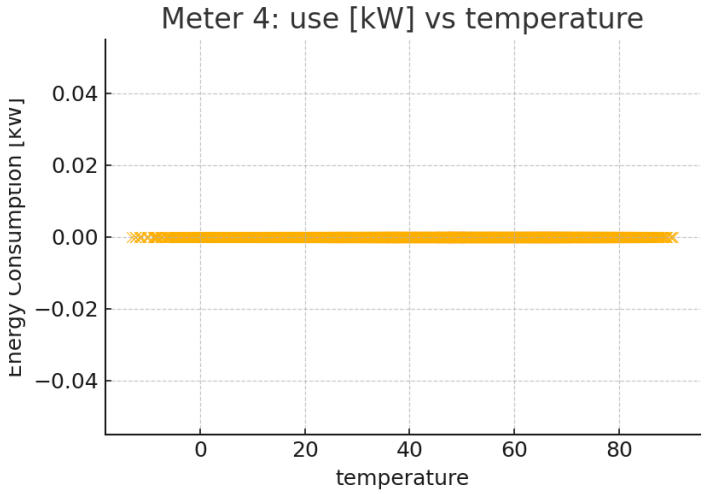


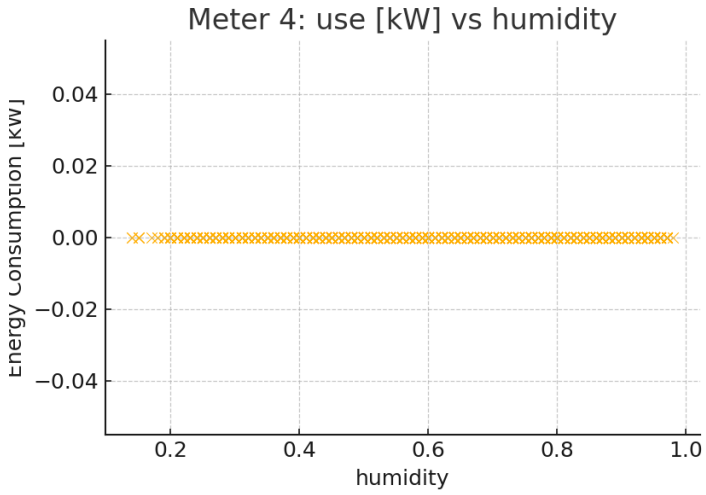
Meter 4 Analysis

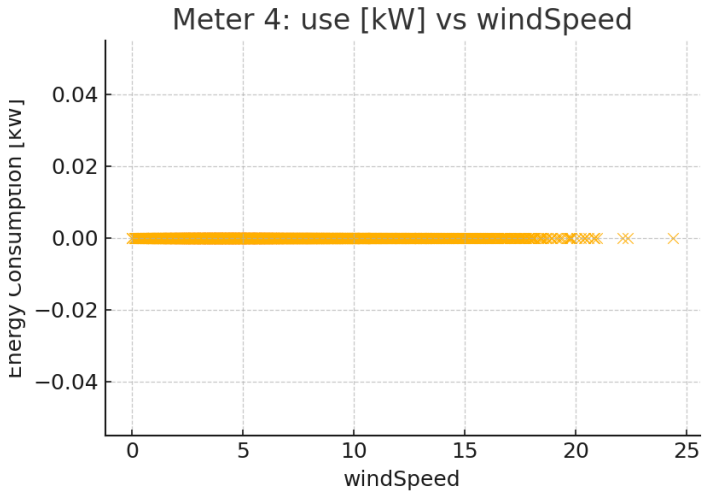
The heatmap below shows the correlation matrix for Meter 4, illustrating the relationships between energy consumption and weather features.

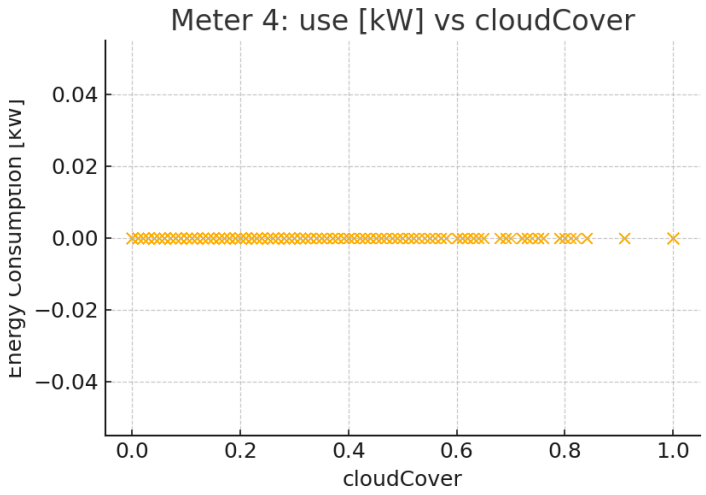


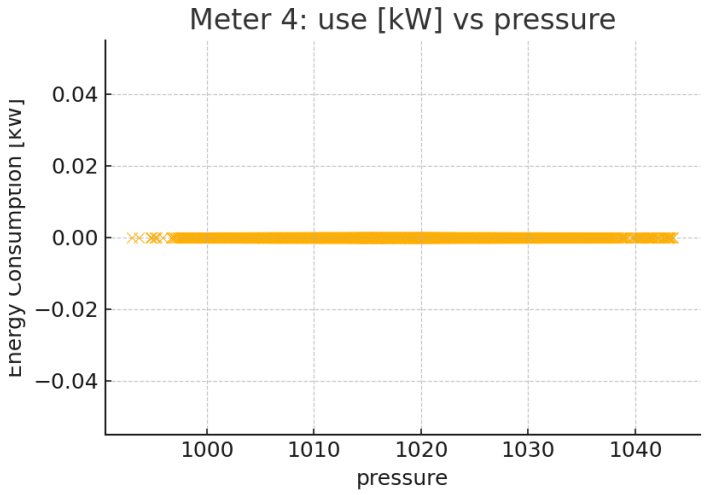
The scatter plots below highlight the relationships between energy consumption and key weather features for Meter 4.




Meter 4: use [kW] vs humidity
Energy Consumption [kW]
0.04
0.02
0.00
−0.02
−0.04
0.2
0.4
0.6
0.8
1.0
humidity


Meter 4: use [kW] vs windSpeed
Energy Consumption [kW]
0.04
0.02
0.00
−0.02
−0.04
0
5
10
15
20
25
windSpeed


Meter 4: use [kW] vs cloudCover
Energy Consumption [kW]
0.04
0.02
0.00
−0.02
−0.04
0.0
0.2
0.4
0.6
0.8
1.0
cloudCover


Meter 4: use [kW] vs pressure
Energy Consumption [kW]
0.04
0.02
0.00
−0.02
−0.04
1000
1010
1020
1030
1040
pressure