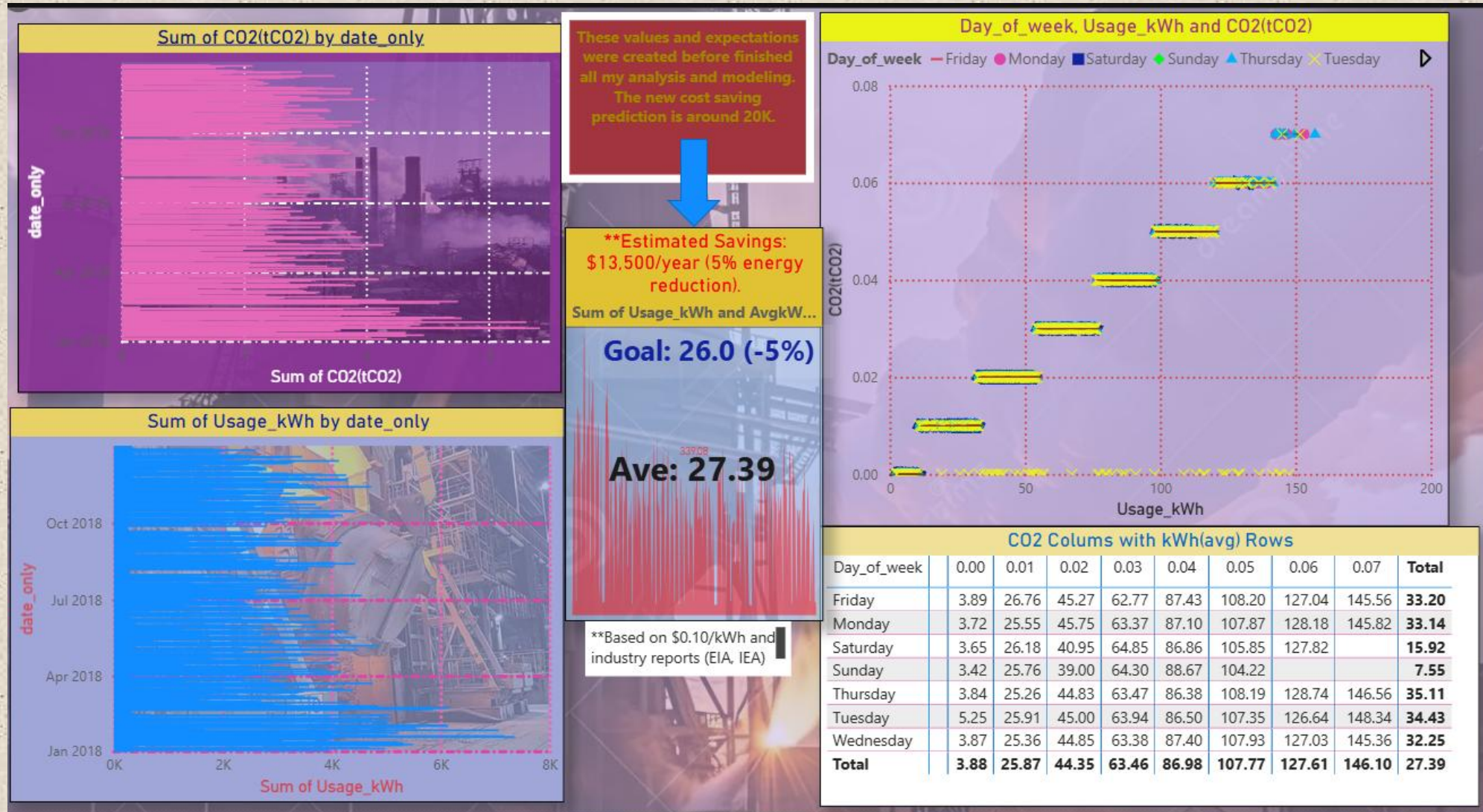# Comparisons with KPI for Energy Usage and Emissions –Report Page

Next slide shows the interactive/Cross Filtering using table

Sum of CO2(tCO2) by date_only

These values and expectations were created before finished all my analysis and modeling. The new cost saving prediction is around 20K.

Estimated Savings: $13,500/year (5% energy reduction).

Sum of Usage_kWh and AvgkW...

Goal: 26.0 (-5%)

Ave: 27.39

**Based on $0.10/kWh and industry reports (EIA, IEA)

Sum of Usage_kWh by date_only

Day_of_week, Usage_kWh and CO2(tCO2)

Day_of_week — Friday ● Monday ■ Saturday ◆ Sunday ▲ Thursday ✕ Tuesday

CO2 Colums with kWh(avg) Rows

Day_of_week	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	Total
Friday	3.89	26.76	45.27	62.77	87.43	108.20	127.04	145.56	33.20
Monday	3.72	25.55	45.75	63.37	87.10	107.87	128.18	145.82	33.14
Saturday	3.65	26.18	40.95	64.85	86.86	105.85	127.82		15.92
Sunday	3.42	25.76	39.00	64.30	88.67	104.22			7.55
Thursday	3.84	25.26	44.83	63.47	86.38	108.19	128.74	146.56	35.11
Tuesday	5.25	25.91	45.00	63.94	86.50	107.35	126.64	148.34	34.43
Wednesday	3.87	25.36	44.85	63.38	87.40	107.93	127.03	145.36	32.25
Total	**3.88**	**25.87**	**44.35**	**63.46**	**86.98**	**107.77**	**127.61**	**146.10**	**27.39**

CO2 and kWh data for a year and day of t... | kWh and CO2 compare timeseries | weather and CO2 and kWh comp | rank load type and CO2 and kWh comp | Funnels LoadType and Energy/CO2
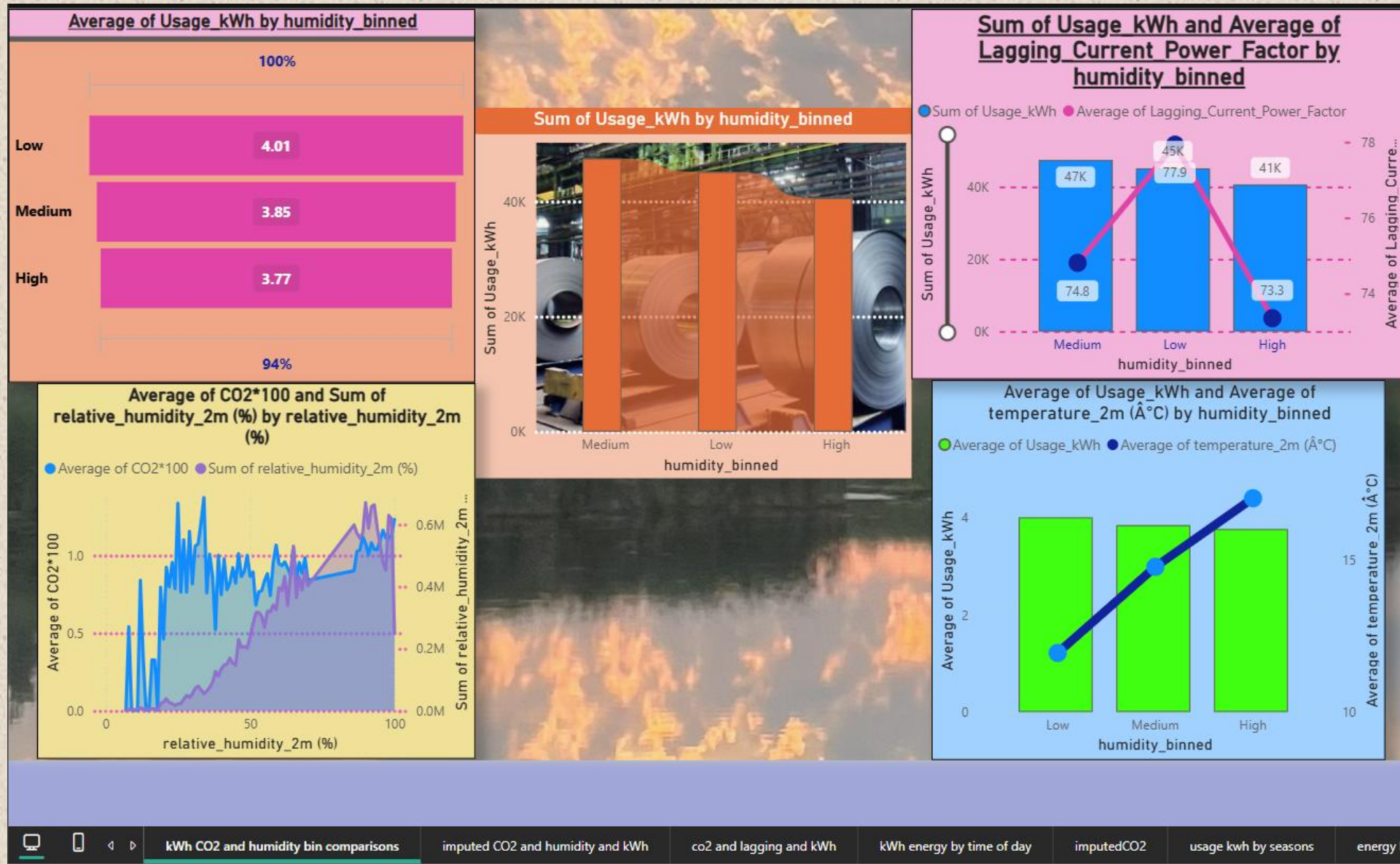
Cross-Filtering from Table to Visuals

- Selecting a cell or row in a table updates the surrounding visuals (bar charts, line plots, KPIs).
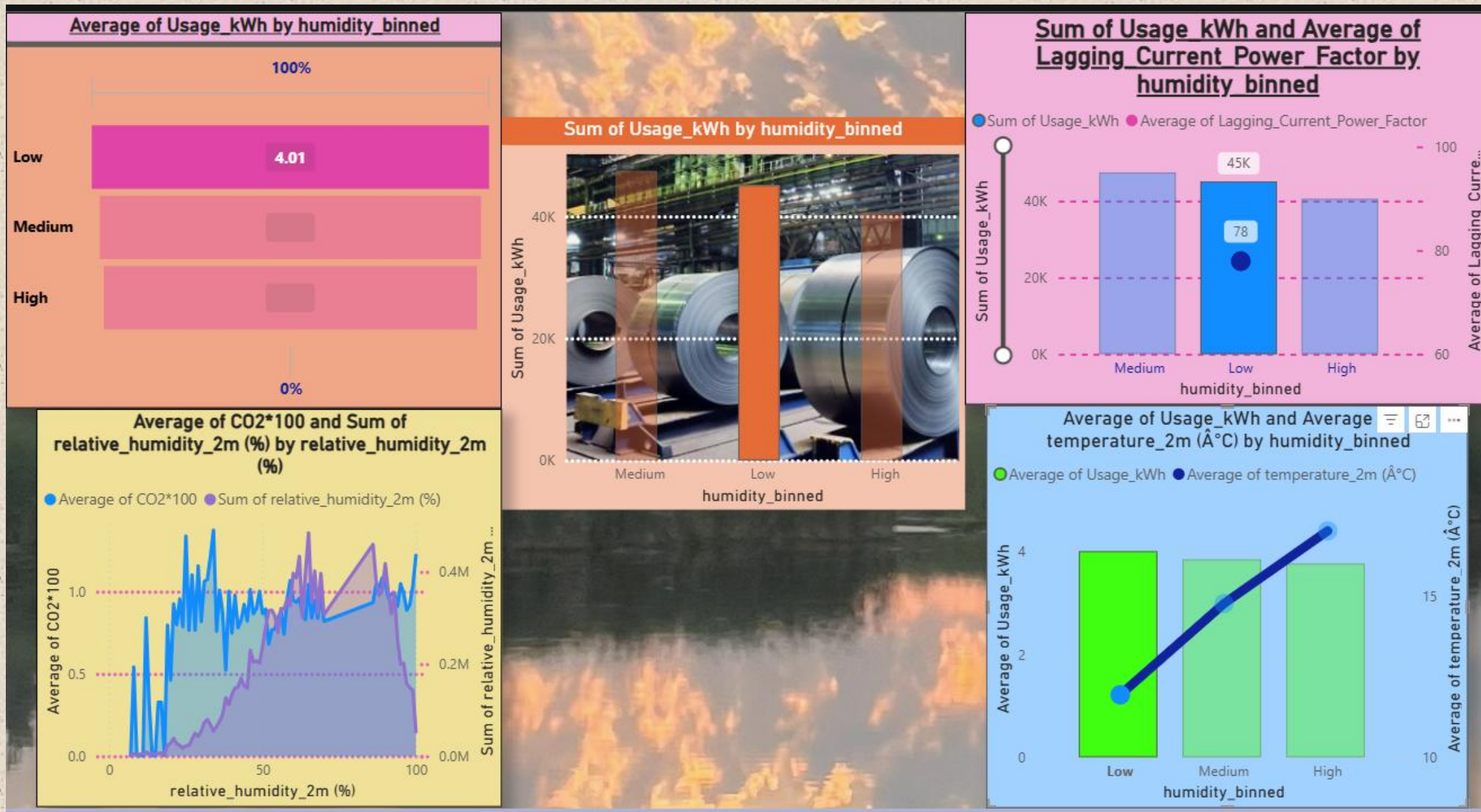- This shows how users can drill into specific categories, metrics.
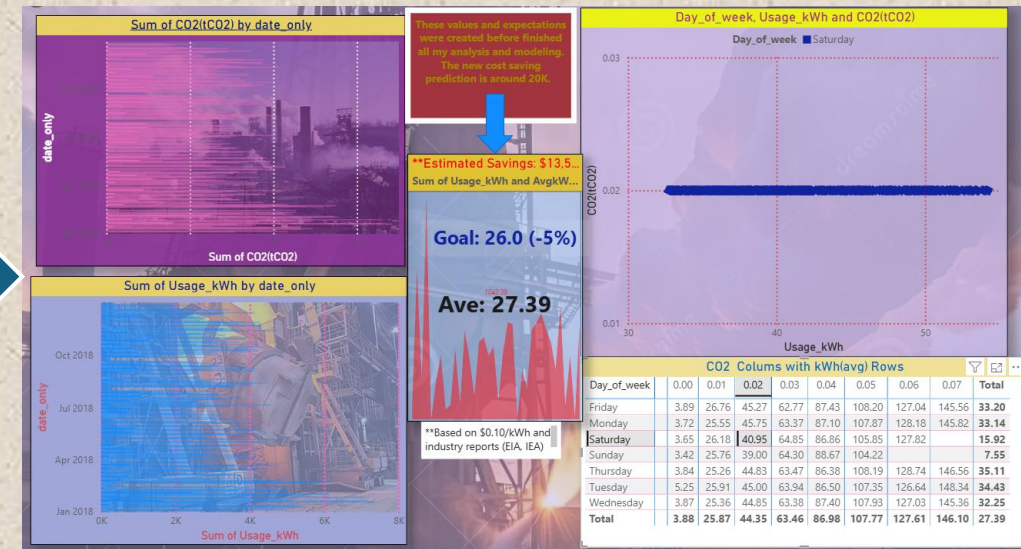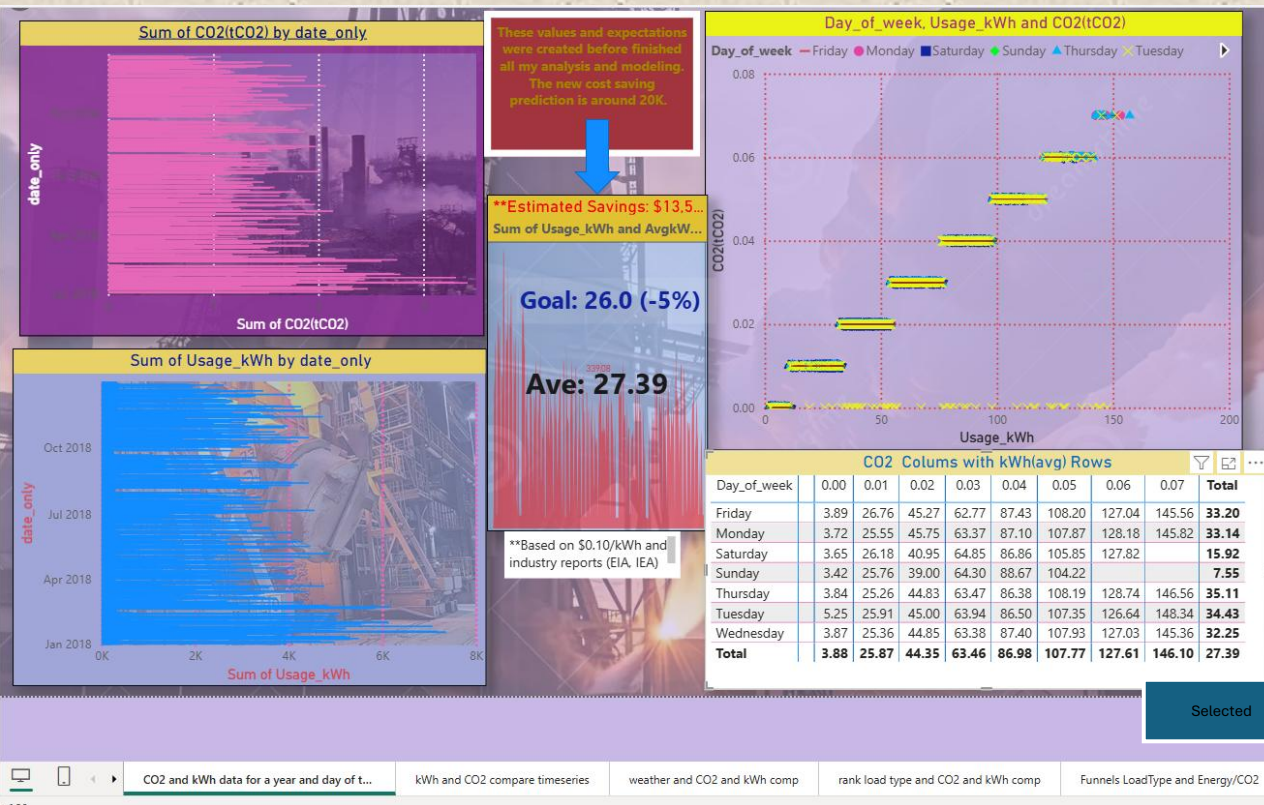
Humidity Bins Analysis with Energy and CO2 – Report Page

Next slide shows Cross-Highlighting: great for understanding the changes for each bin.
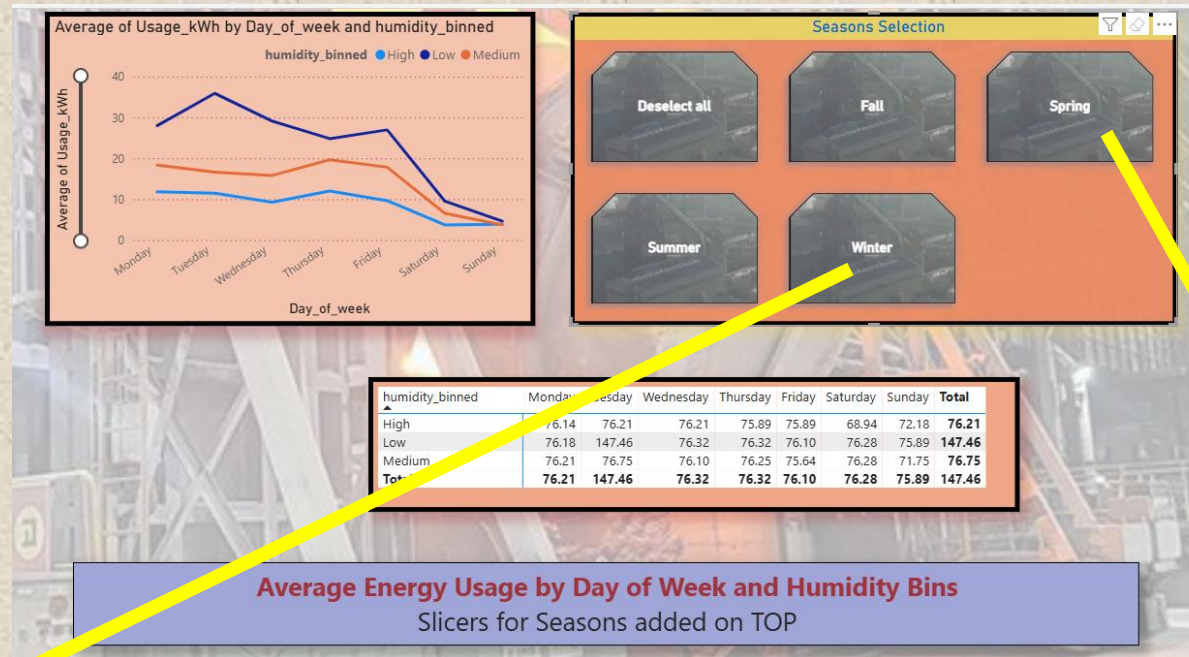
Slicer Controls
Use slicers for date ranges, categories, or regions.
Seasons **slicers:** Spring, Summer, Fall and Winter

Average Energy Usage by Day of Week and Humidity Bins
Slicers for Seasons added on TOP

Winter Season
Selected

Spring Season
Selected
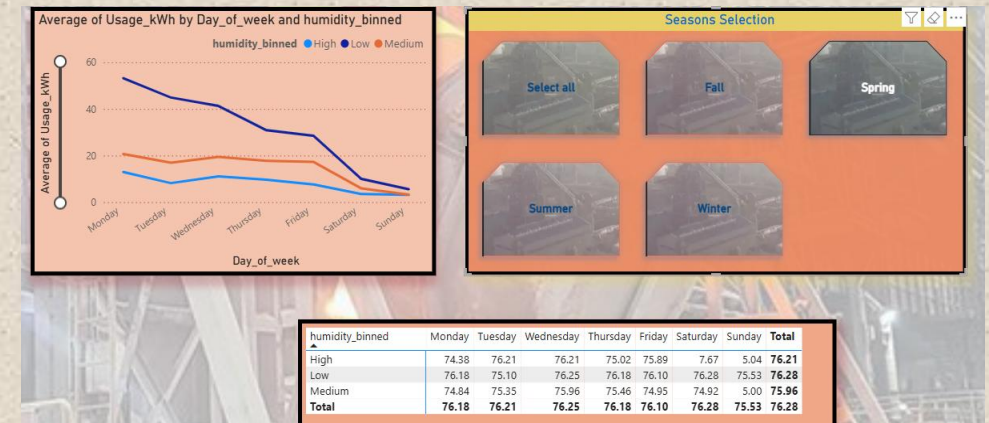
Fun with Heat Maps via PowerBI

Humidiy Bins by Temperature Bins
CO2x100 Values

humiditybinby10	-15.00	-10.00	-5.00	0.00	5.00	15.00	20.00	25.00	30.00	Total
Total	1.5237	1.0548	1.0970	1.0906	1.1431	1.0721	1.1290	1.2871	1.8530	1.1524
0			0.0000	0.5000						0.4286
10		0.3333	0.8636	1.6250						1.0357
20	2.7500	1.8147	1.3077	2.3550		2.8125	2.1667	2.6250		1.9038
30	2.7813	1.2270	1.8452	1.8806	2.7034	1.9750	2.9211	2.5714		1.9403
40	1.6445	1.4566	1.8406	1.3413	2.1763	2.0131	1.9511	1.2823	0.3438	1.7433
50	1.4670	1.0351	1.0195	1.6146	1.7173	2.0519	1.4735	1.8488	1.7599	1.5242
60	0.2941	0.5678	0.9167	1.2609	1.1852	1.2630	1.5654	1.8208	1.8581	1.2916
70	0.0000	0.5708	0.7128	0.8191	0.8733	0.9317	1.3878	1.6445	2.3636	1.0732
80		0.2100	0.9311	0.3827	0.7325	0.5851	1.0577	0.9368	2.6250	0.7443
90			0.8153	1.0096	0.6266	0.5688	0.7148	0.8796		0.7278
100			1.5000	0.0000	1.0769	0.2594	0.6637			0.6054

Humidty Bins by Temperature Bins
Usage kWh (Avg)

humiditybinby10	-15.00	-10.00	-5.00	0.00	5.00	15.00	20.00	25.00	30.00	Total
0			3.63	13.82						12.36
10		13.65	21.39	37.81						25.42
20	60.22	41.61	31.13	52.76		62.50	47.83	58.44		43.40
30	59.90	29.57	42.79	44.25	59.24	44.16	64.89	57.21		44.37
40	35.72	33.34	42.60	35.44	48.57	45.64	43.15	30.37	11.58	40.20
50	34.06	25.10	25.05	36.62	39.51	46.04	33.29	42.06	39.93	35.10
60	10.72	15.18	22.53	30.54	28.16	29.37	35.43	40.78	41.71	30.22
70	4.89	16.32	18.93	20.42	21.47	22.35	32.09	36.99	53.01	25.66
80		8.43	23.47	11.57	18.54	15.39	24.84	22.55	56.95	18.80
90			20.41	24.61	16.12	15.12	17.98	21.28		18.34
100			36.07	3.36	25.90	8.65	16.84			15.80
Total	34.41	25.56	26.73	26.77	27.10	25.54	26.48	29.81	41.81	27.39