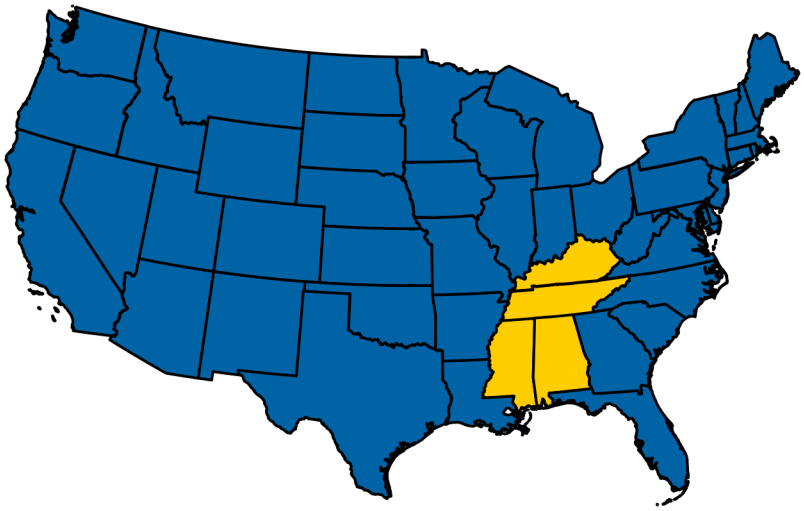


EV WATTS Bi-Annual Activity Update

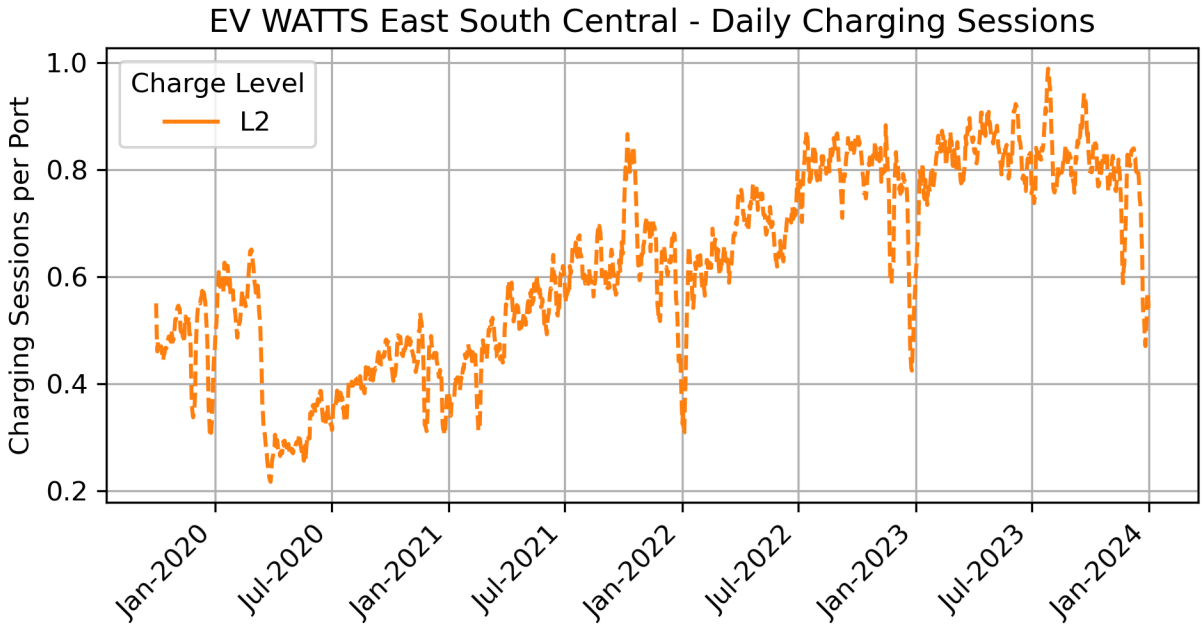
East South Central: Level 2 Charging Stations

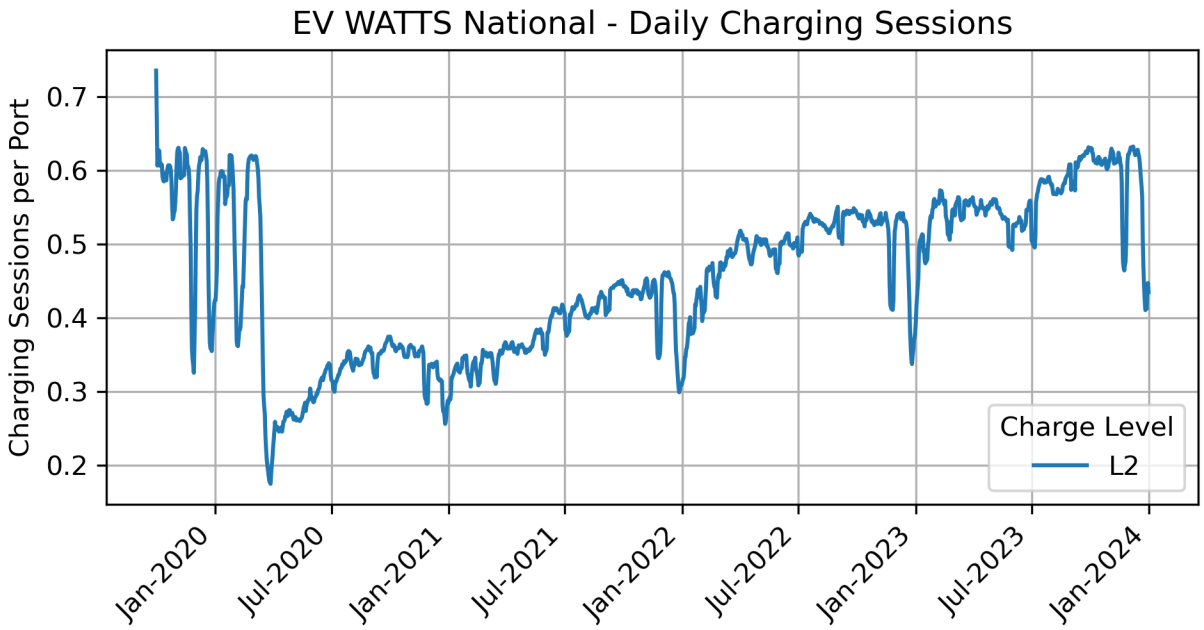
This report provides a benchmark of EV WATTS regional charging station data against the EV WATTS national dataset. EV WATTS (Electric Vehicle Widescale Analysis for Tomorrow's Transportation Solutions) addresses a growing need for practical information about vehicle electrification. The EV WATTS project team collects charging station (electric vehicle supply equipment, or EVSE) data from many partners across the U.S. The project applies proven data collection and analysis methodologies to collect, validate, clean, anonymize, analyze, and summarize data from both existing and new EVSE deployments. Analyzing this data helps create a better understanding of charging patterns and infrastructure performance to inform the U.S. Department of Energy's research. For more information or to access an interactive interface that displays statistics and findings from the entire EV WATTS dataset visit www.evwatts.org.

Daily Session Count

Station utilization is impacted by both the duration of sessions and the number of sessions. An active station can have numerous sessions or charging events per day. Charging session counts are normalized on a sessions-per-port basis for comparing regional and national data (next pages).

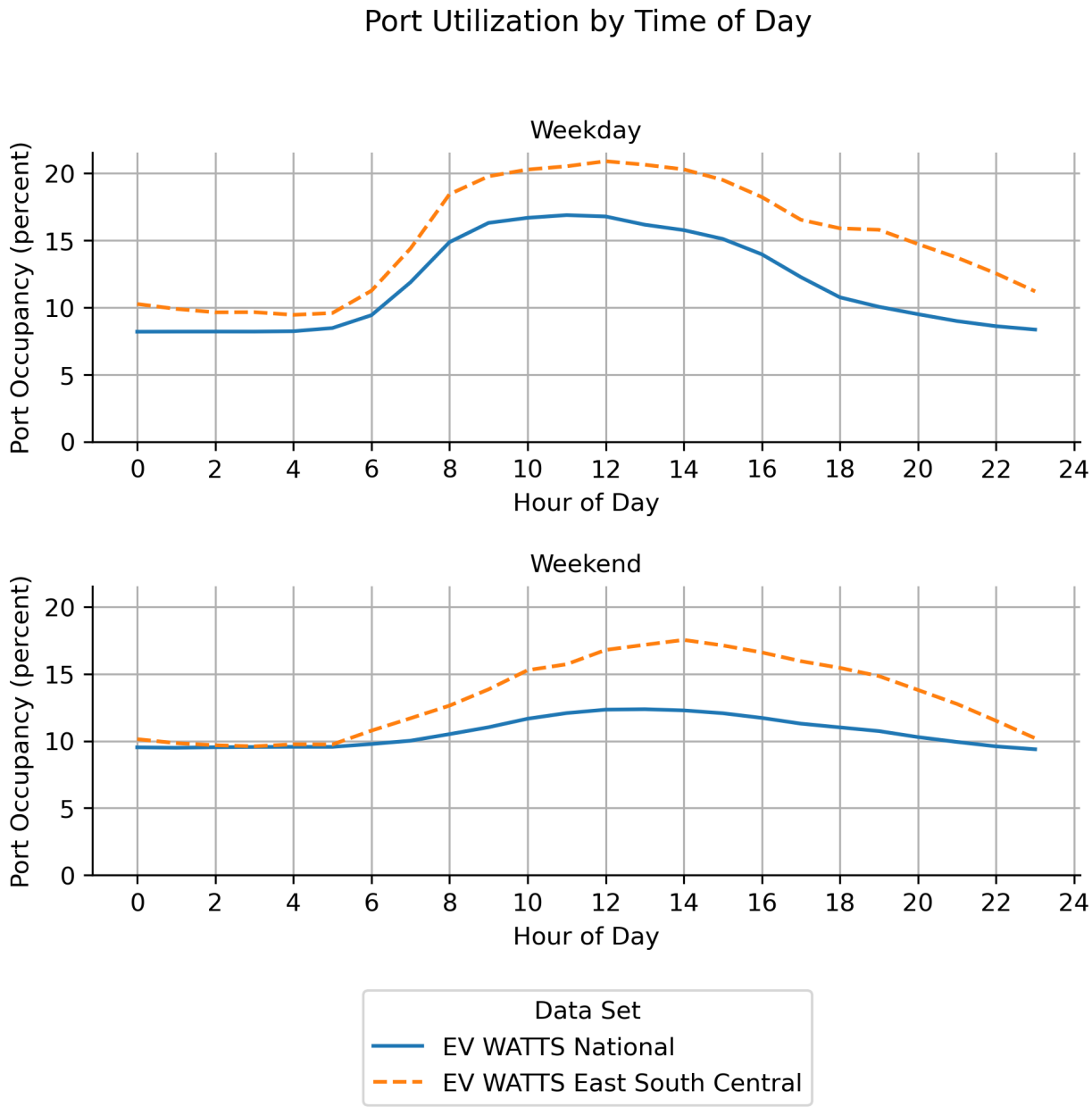
The national and regional EV WATTS datasets have been filtered to contain the same types of venues. This will allow for direct comparison between the regional and national charging station data. It is important to note, that while the charging venues may be the same, the use cases at these venues may be different, which may result in different usage patterns.


EV WATTS East South Central - Daily Charging Sessions
Charging Sessions per Port
1.0
0.8
0.6
0.4
0.2
Charge Level
L2
Jan-2020
Jul-2020
Jan-2021
Jul-2021
Jan-2022
Jul-2022
Jan-2023
Jul-2023
Jan-2024

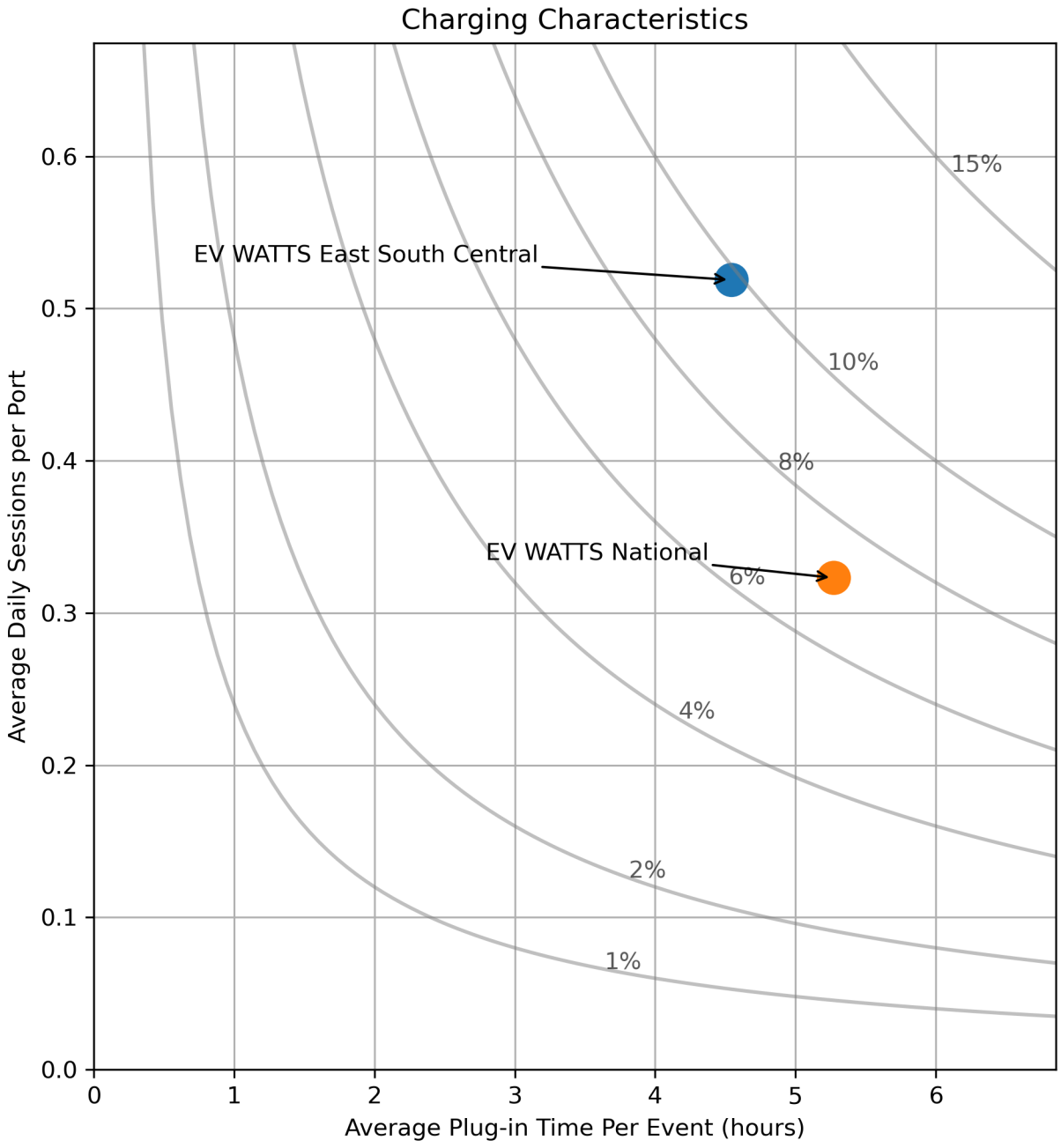

EV WATTS National - Daily Charging Sessions
Charging Sessions per Port
0.7
0.6
0.5
0.4
0.3
0.2
Charge Level
L2
Jan-2020
Jul-2020
Jan-2021
Jul-2021
Jan-2022
Jul-2022
Jan-2023
Jul-2023
Jan-2024

Utilization

Utilization or occupancy is when an electric vehicle (EV) is plugged into a charging port. Few stations are used both day and night on both weekdays and weekends, so less than 25% occupancy is typical. Higher station utilization usually results in EV drivers searching out other stations that are less likely to be in use.

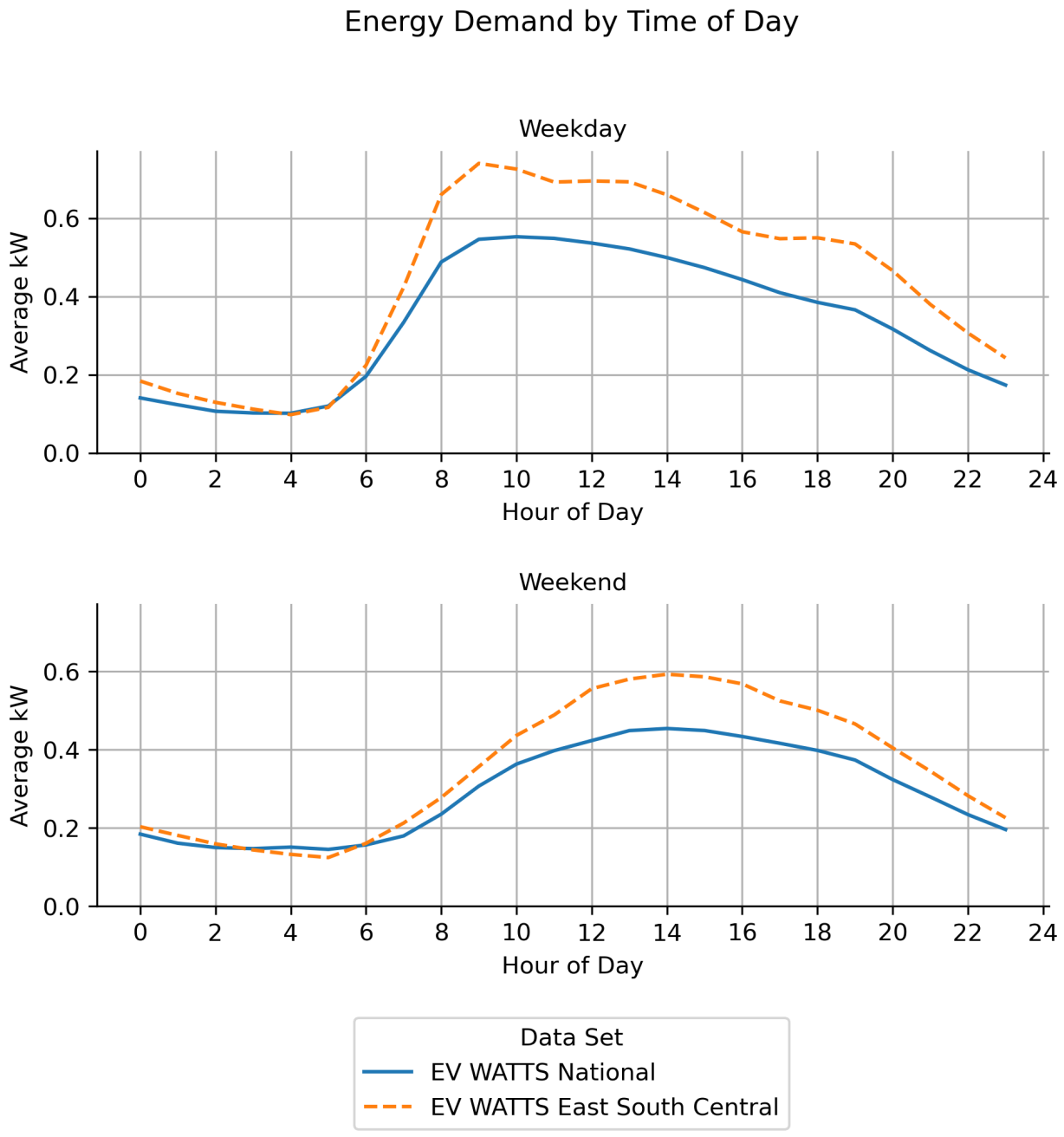


The average plug-in time plotted against the average number of daily charging events shows utilization characteristic differences. The isolines on the following chart with percentages represent an average port occupancy rate.



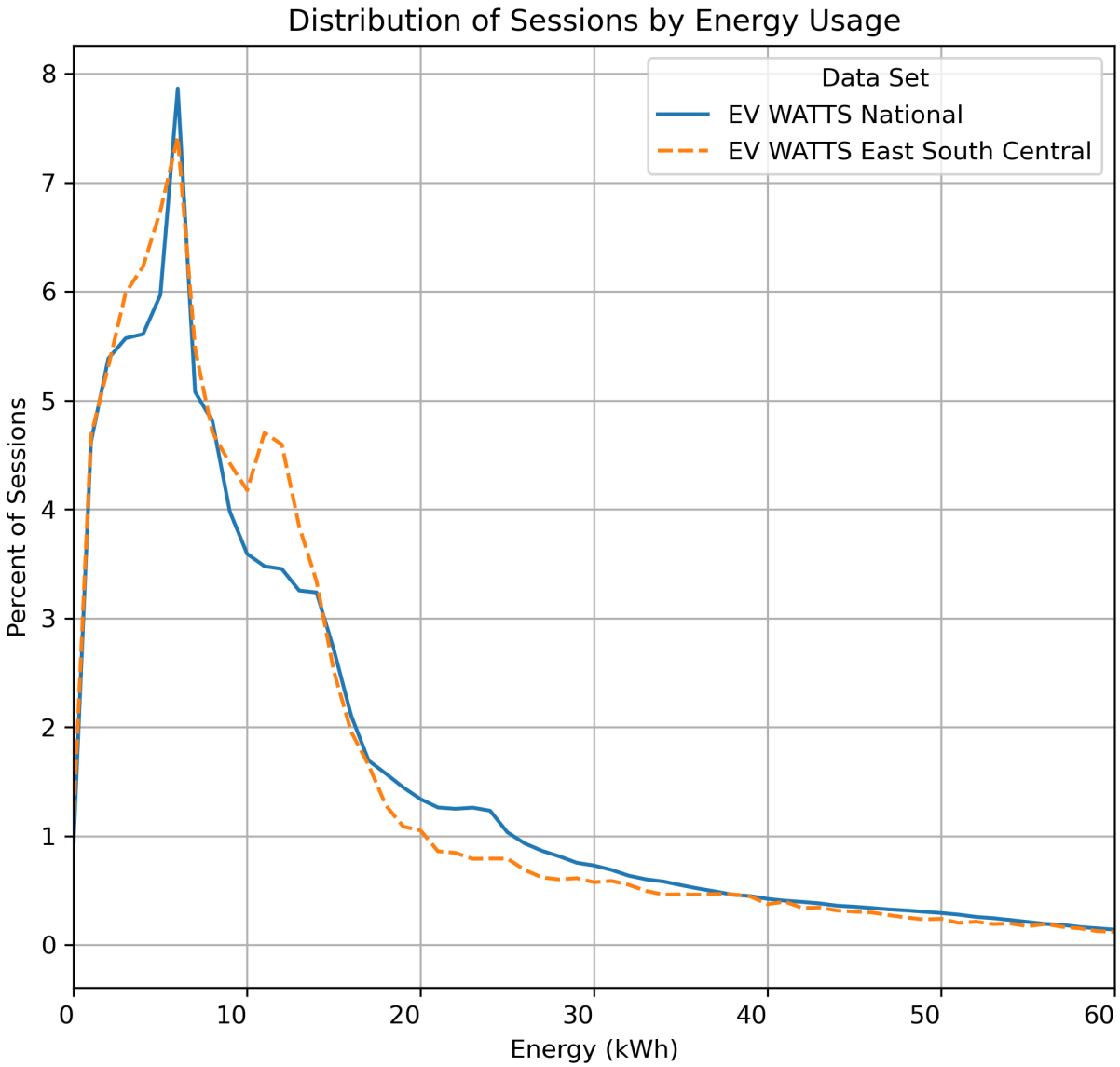
Energy

Electricity consumption indicates the impact of regional charging patterns on the overall grid (averaged across all stations for comparison purposes).



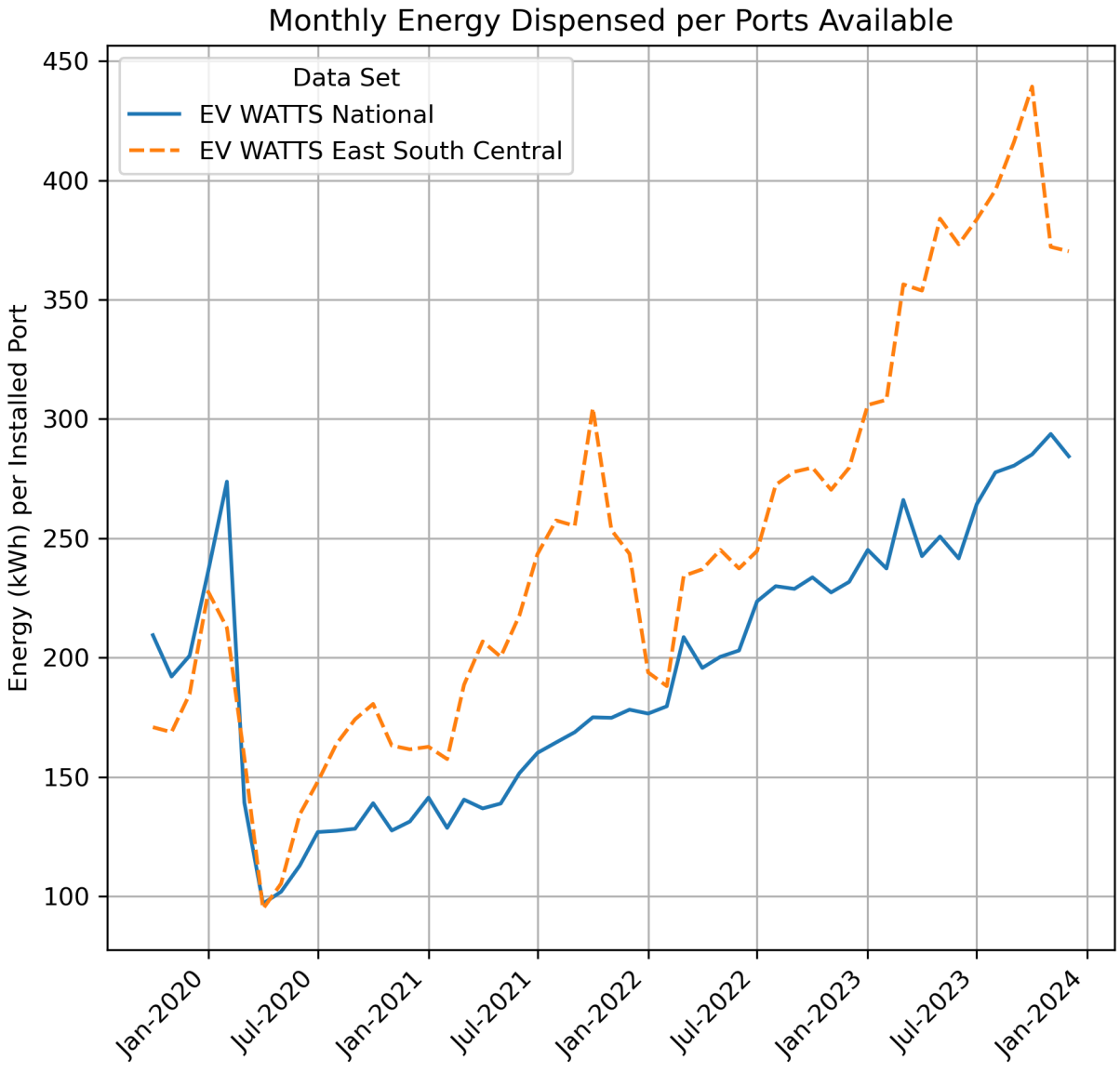
The median amount of energy (kWh) per charging session.

Data Set	Median Port Energy (kWh)
EV WATTS National	9.5
EV WATTS East South Central	9.0



The average weekly energy dispensed per port.

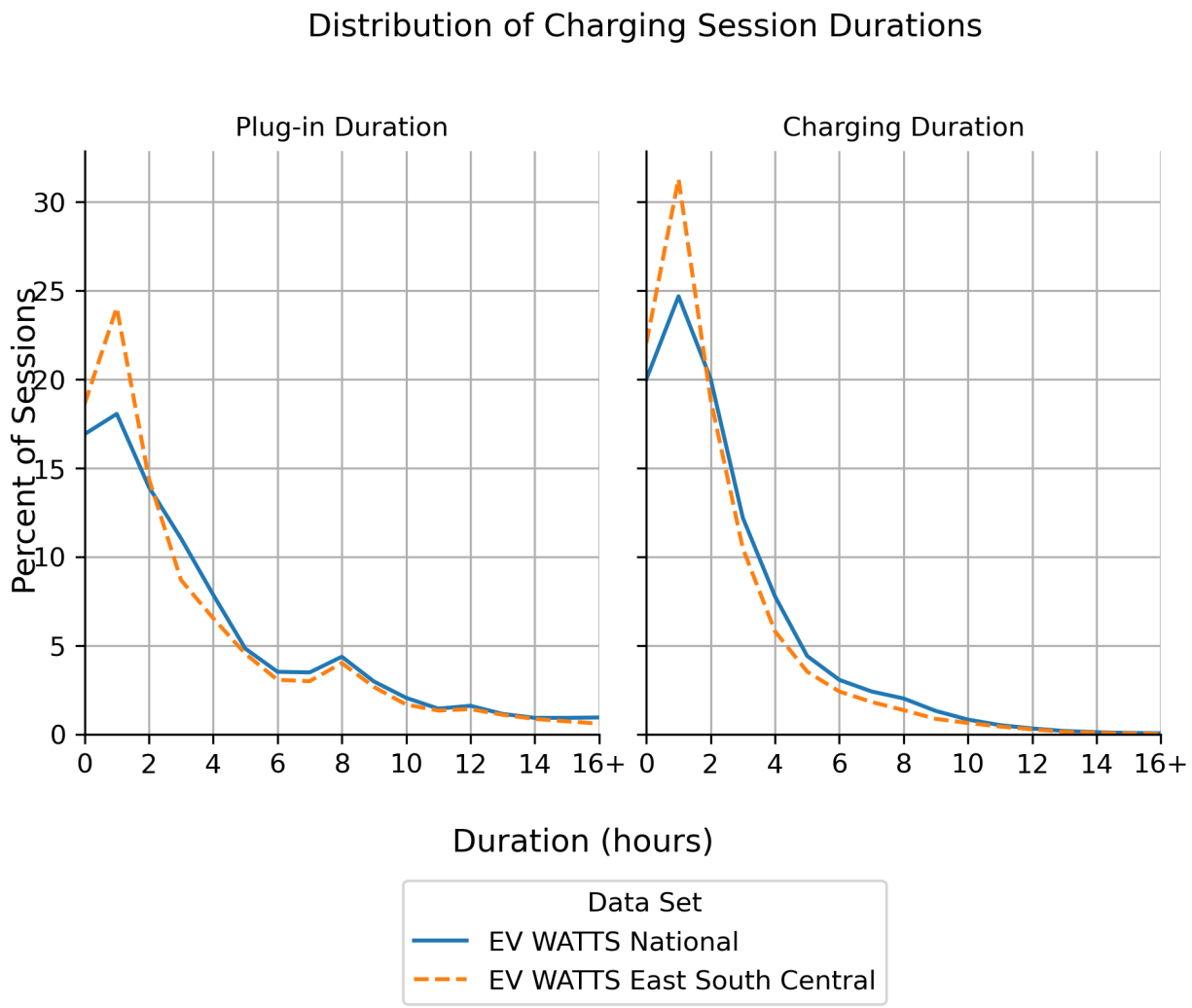
Data Set	Median Port Energy (kWh)
EV WATTS National	44.4
EV WATTS East South Central	55.5



Duration

Each session has a plug-in duration or period when the station is occupied as well as an active charging duration. The difference between those represent an opportunity to optimize station use.

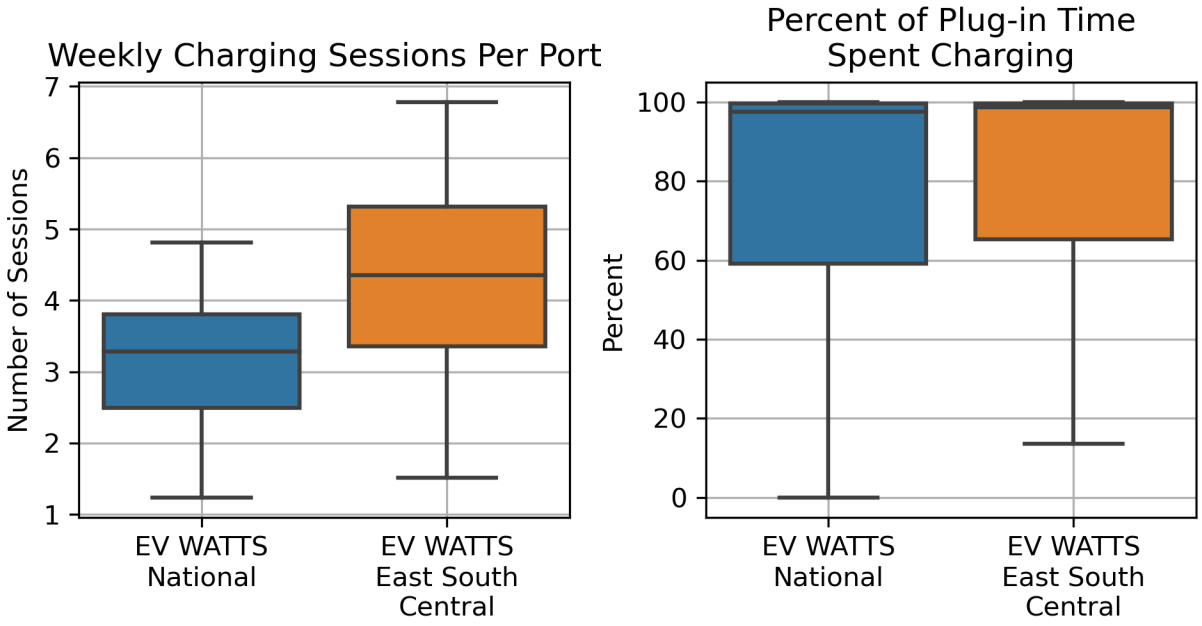
Data Set	Median Plug-in Duration (hours)	Median Charging Duration (hours)
EV WATTS National	3.1	2.2
EV WATTS East South Central	2.4	1.9



Range in Utilization and Time Spent Charging

Individual charger performance can vary greatly among a group of chargers. A lower percentage of plug-in time spent charging reveals more opportunity to move the fully charged vehicle so the station can be used by others.

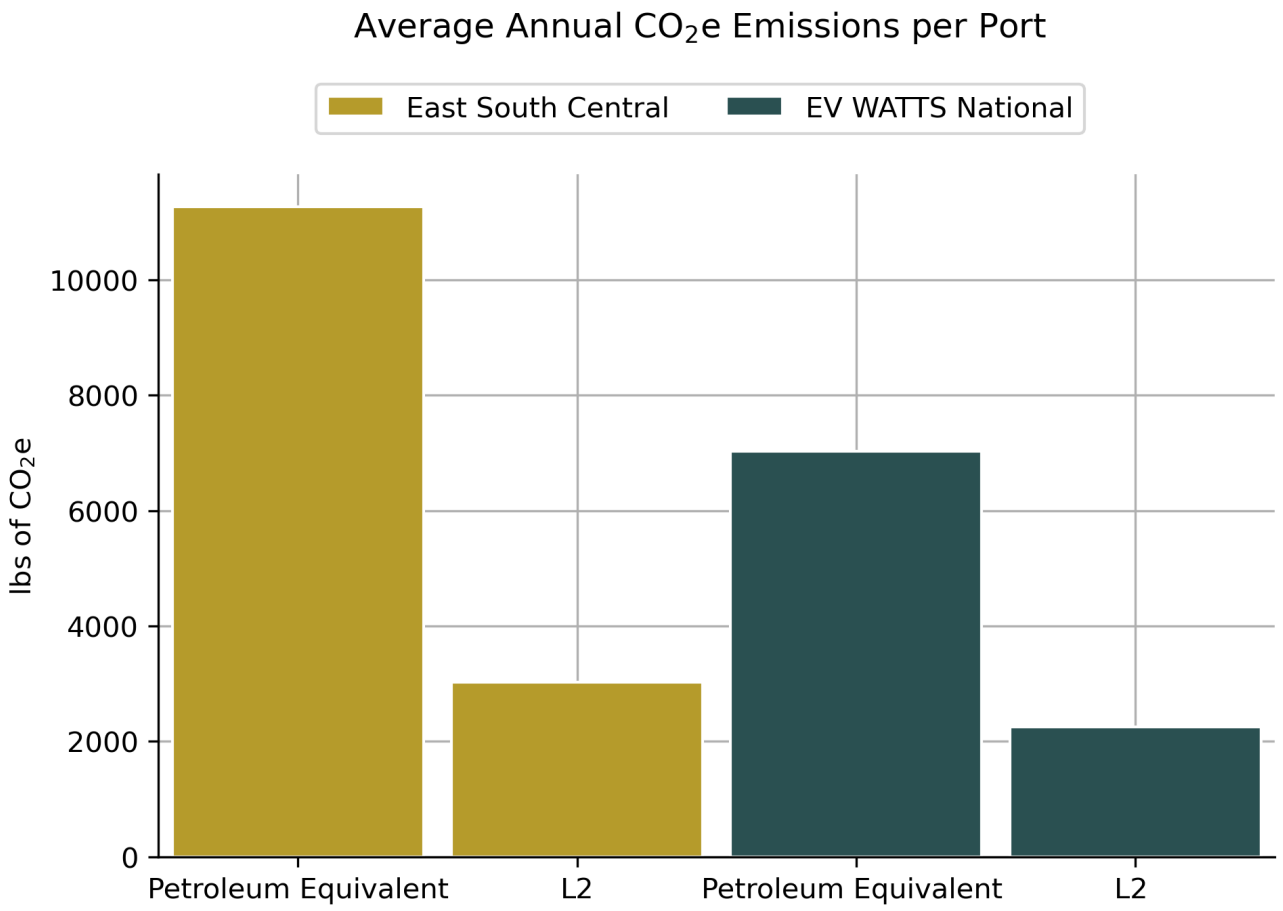
Data Set	Median Weekly Charging Sessions	Median Plug-in Time Spent Charging (percent)
EV WATTS National	3.3	97.6
EV WATTS East South Central	4.4	98.8



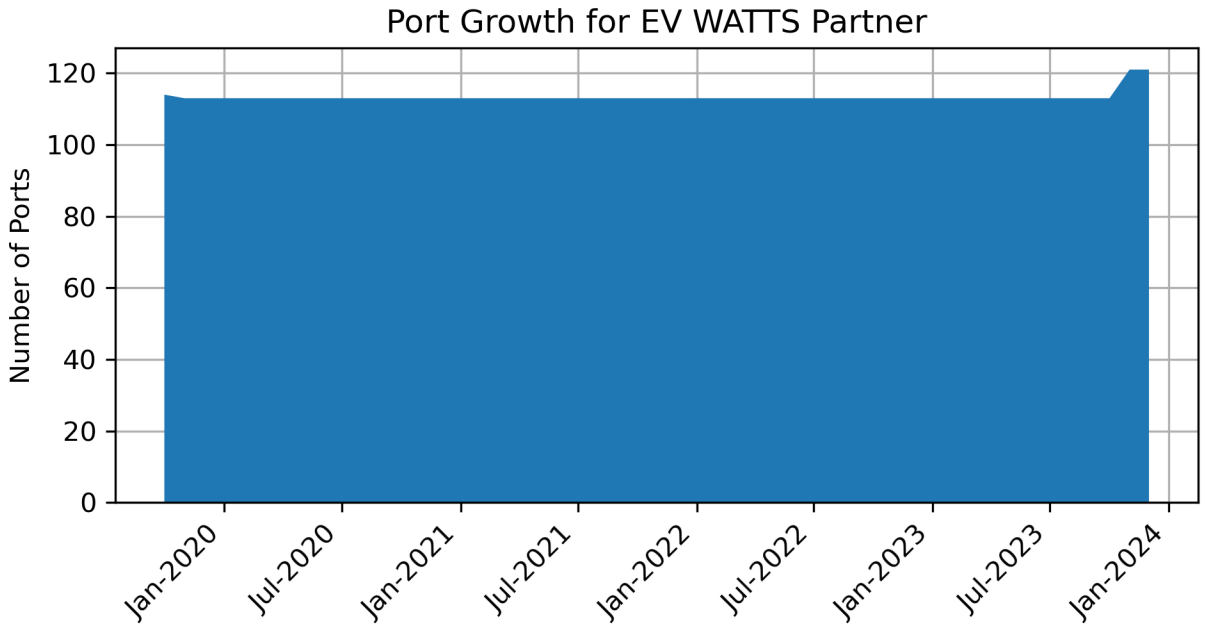
Emissions

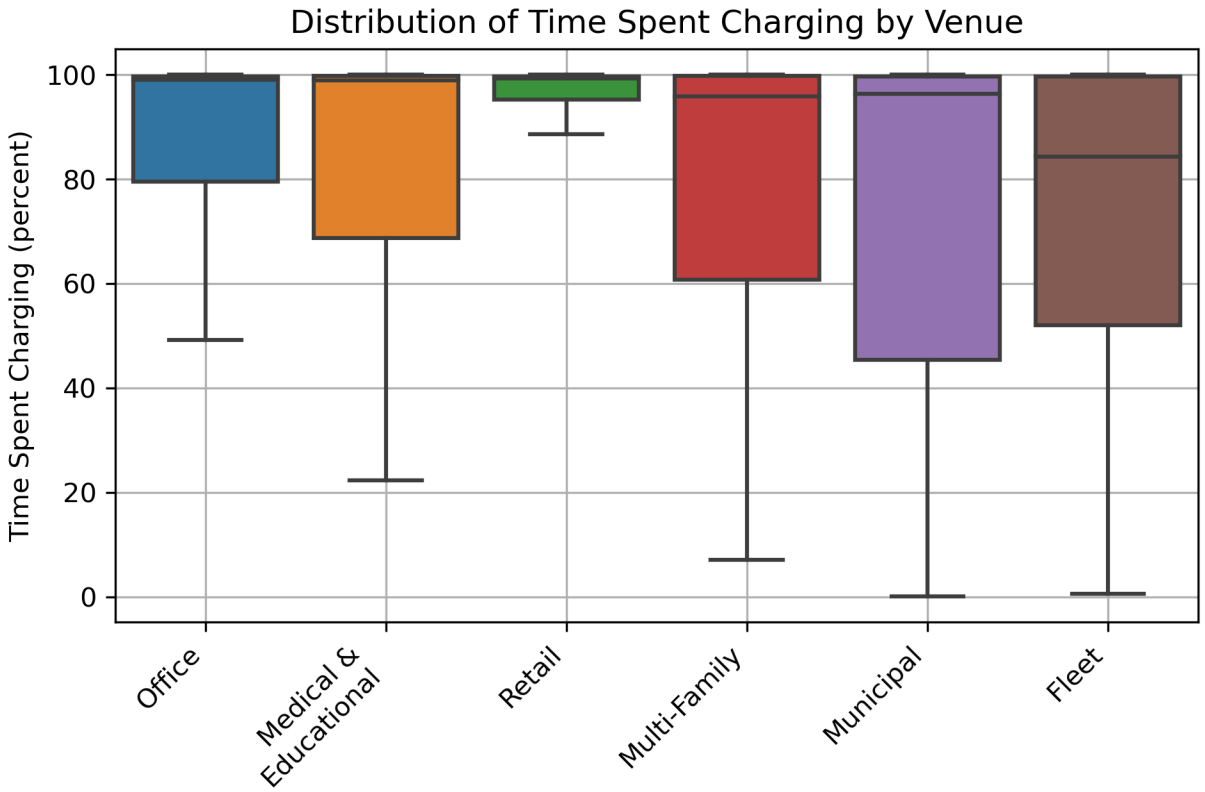
The annual carbon dioxide equivalent (CO_2e) emissions compares port emissions with a representative petroleum equivalent pump. The last six months of data are annualized for these calculations, which use a petroleum vehicle fuel economy of 23.4 miles per gallon (DOE, https://afdc.energy.gov/data/10310) and 19.6 pounds of CO_2e per gallon (EPA, https://www.epa.gov/greenvehicles/greenhouse-gas-emissions-typical-passenger-vehicle). An EV efficiency of 0.32 kWh per mile was used along with eGRID2021 emission tables per state (EPA, https://www.epa.gov/egrid).

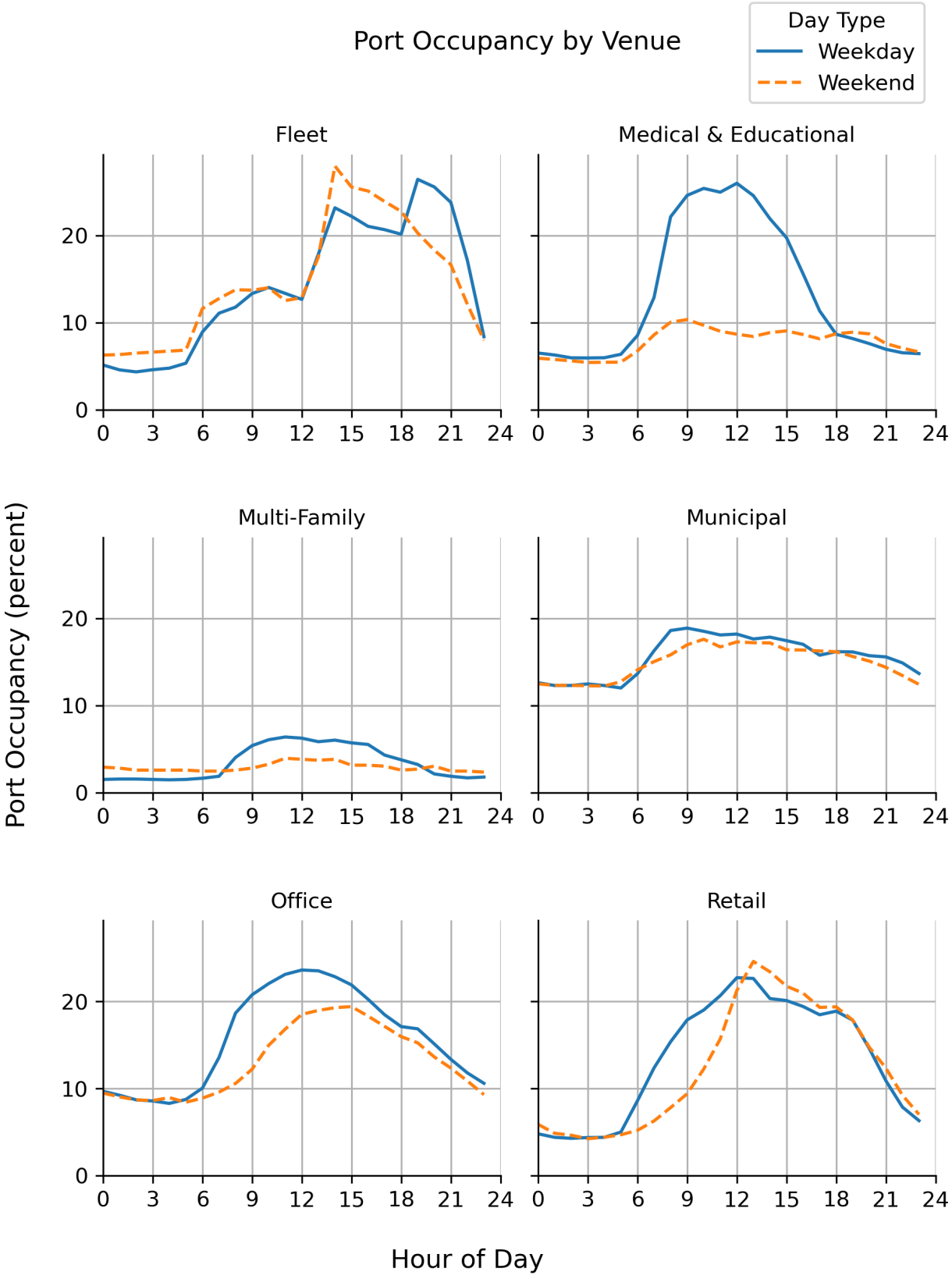
Annualized Totals: East South Central	L2
Number of Ports	128
Total Miles	1,631,246
Total kWh	521,999
Petroleum Reduced (gallons)	69,711
Emissions Savings (lbs of CO_2e)	999,562

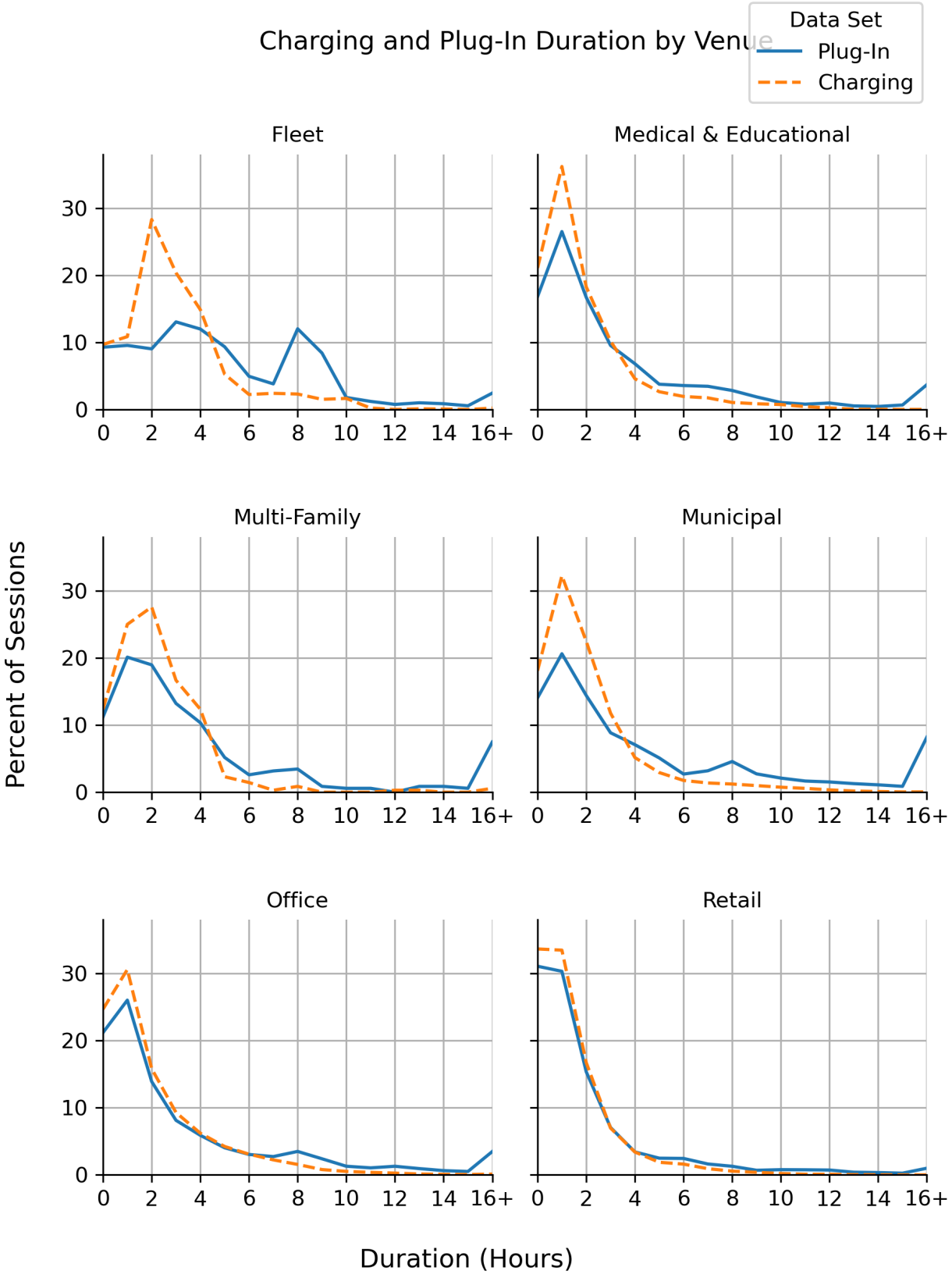


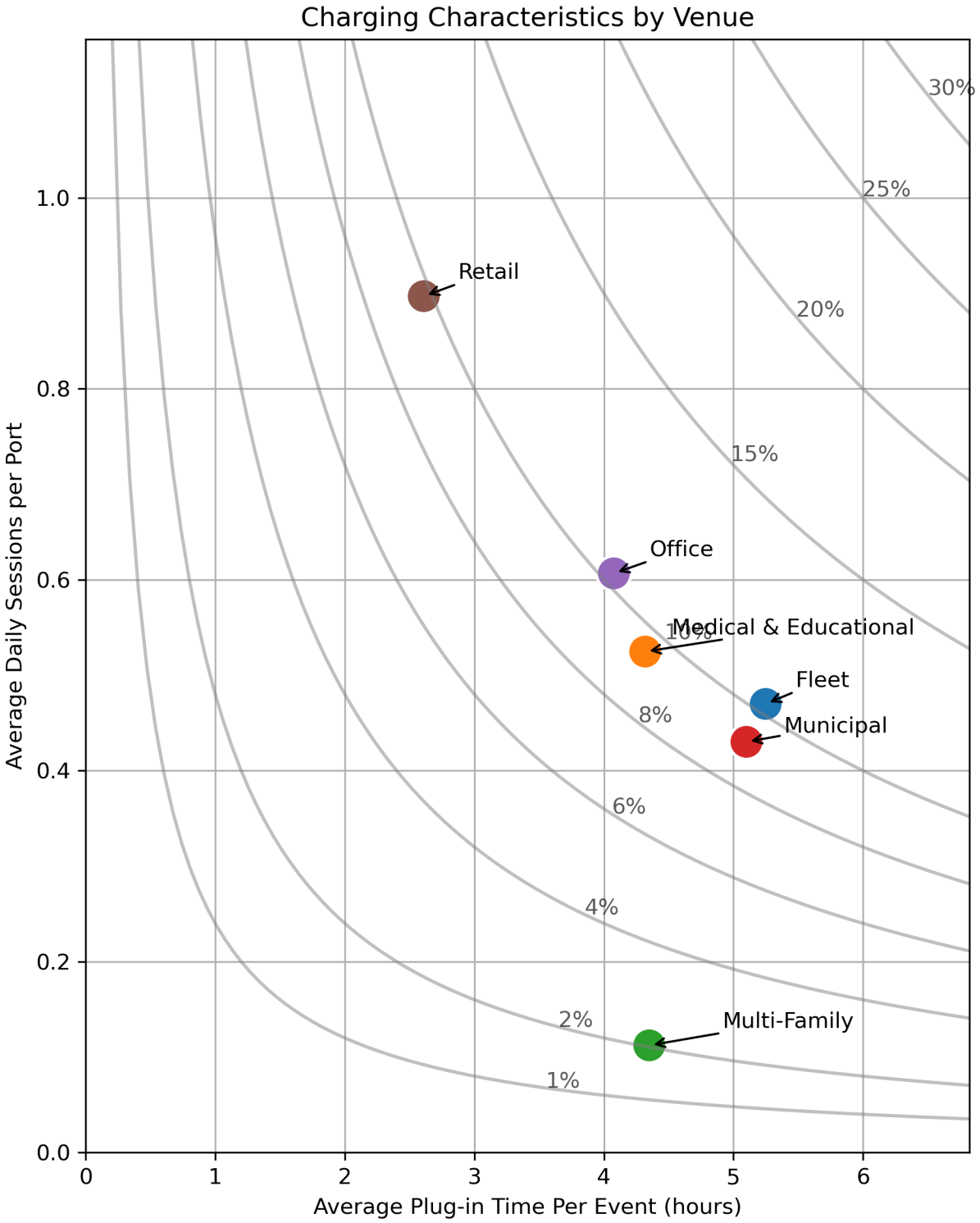
Region Specific Dataset Charts






Port Occupancy by Venue
Day Type
Weekday
Weekend
Fleet
Medical & Educational
Multi-Family
Municipal
Office
Retail
Port Occupancy (percent)
Hour of Day
0
10
20
0
3
6
9
12
15
18
21
24


Charging and Plug-In Duration by Venue
Data Set
Plug-In
Charging
Fleet
Medical & Educational
Multi-Family
Municipal
Office
Retail
Percent of Sessions
Duration (Hours)
0
10
20
30
0
2
4
6
8
10
12
14
16+


Charging Characteristics by Venue
Average Daily Sessions per Port
Average Plug-in Time Per Event (hours)
0.0
0.2
0.4
0.6
0.8
1.0
0
1
2
3
4
5
6
30%
25%
20%
15%
10%
8%
6%
4%
2%
1%
Retail
Office
Medical & Educational
Fleet
Municipal
Multi-Family