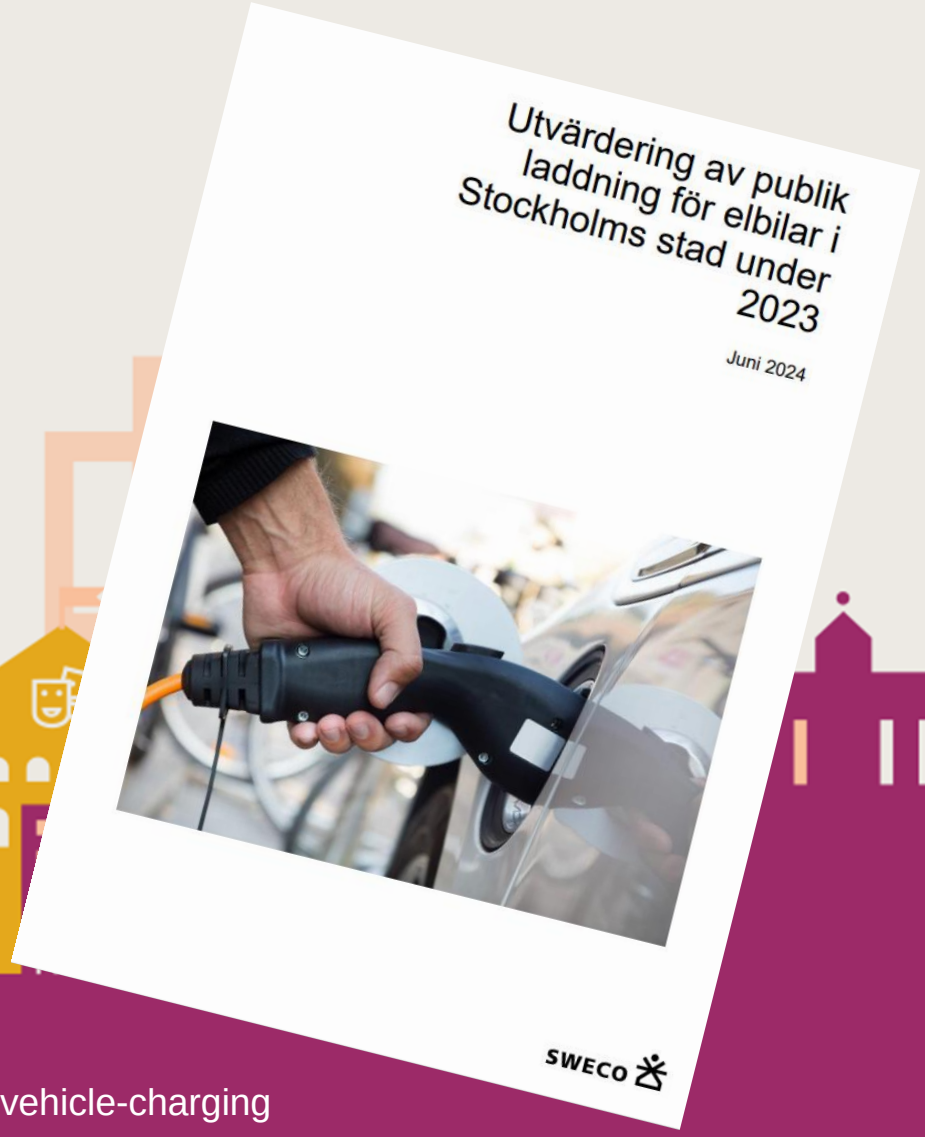
Annual report on electric vehicle charging

Paul Fenton, City of Stockholm

Interreg Europe

Co-funded by the European Union

REFOCUS



https://www.interregeurope.eu/good-practices/annual-report-on-electric-vehicle-charging

Key climate and transport objectives of Stockholm

2030 Climate Positive

2030 Zero emission inner city

2030 30% reduced car traffic (from 2017)

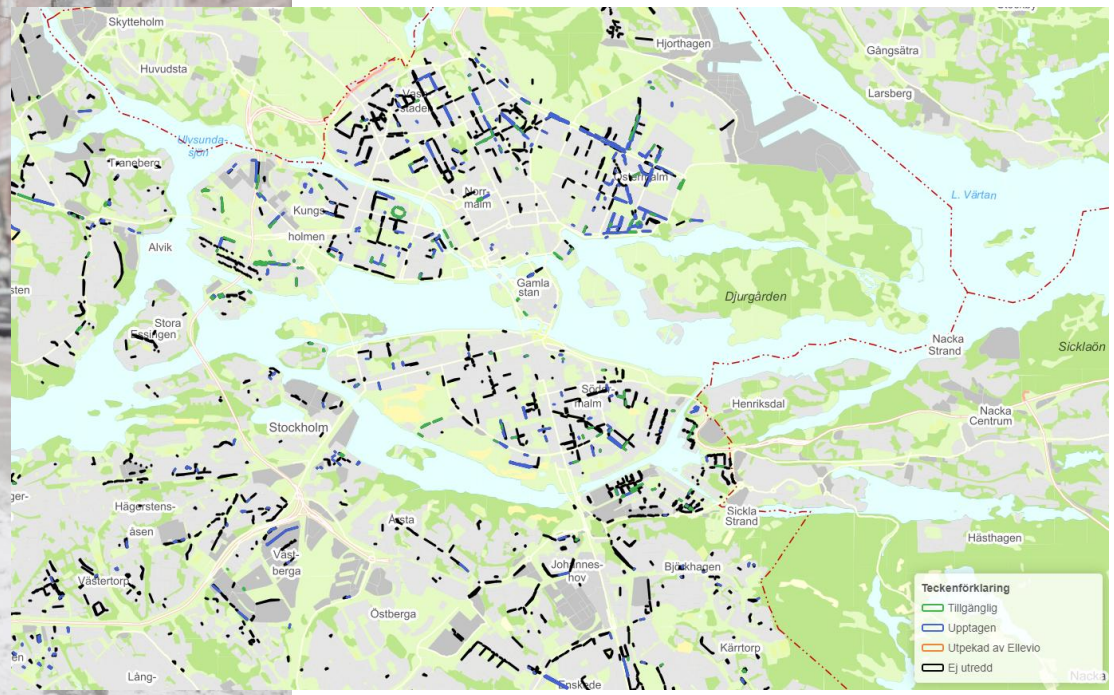
2030 Fossil fuel free organisation

2040 Fossil fuel free city

On-street charging

Access right agreements

- 10 years, no fee
- Fast charging standards 50/150 kW CHAdeMO and CCS
- Normal charging: Typ 2, 3,7 – 32 kW
- Colour: Grey (RAL 7022) or Metallic (RAL 9006)
- In operation 95 % of the time
- No advertisements
- Charing operator charge for the electricity
- Give data to the city



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Annual report on electric vehicle charging

- Compulsory data sharing from public and private stakeholders

- Enables City and stakeholders to:
  - monitor progress and continually assess use patterns;
  - facilitate decision-making and improve related processes, e.g. planning, permitting, etc.

- Commissioned by the City
  - Cost has increased with time, as more data is available and more stakeholders are involved;
  - working hours are required to collect and process data;
  - The 2021 report cost €15000, for 2022 €17000, and for 2023 €20000.

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2023 – 770,000 charging sessions

	Normal charging, street	Normal charging, parking garage	Fast charging, street	Total
2018	84	279	26	389
2019	131	507	35	673
2020	169	864	44	1077
2021	190	1761	47	1998
2022	590	3489	56	4135
2023	1160	5746	58	6964

Number of charging units providing data between 2018-2023

- Around 20% of all public charging points in Sweden (end 2023)
- 72% of all charging points in Stockholm region

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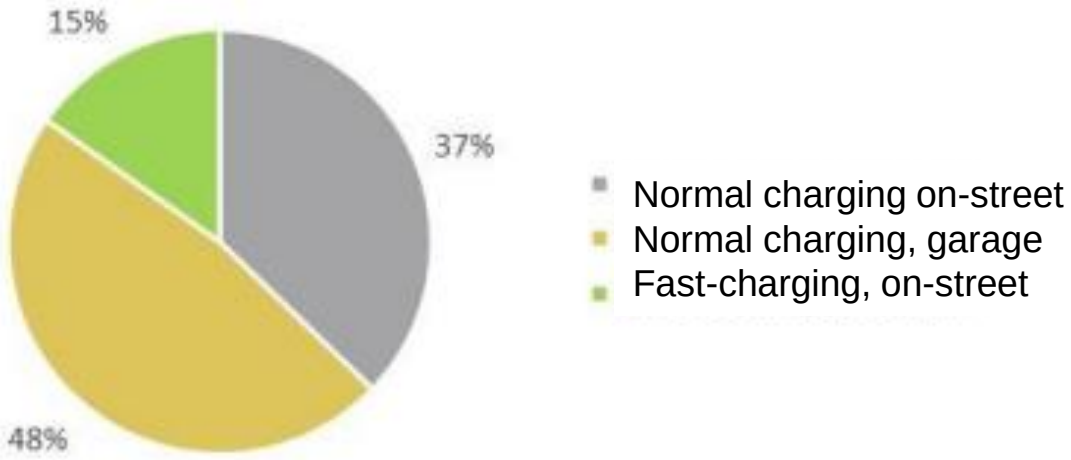
Normal charging in garages - Stockholm Parkering AB



Share of charging sessions per charging category, 2023

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2023: over 200 charging streets i Stockholm (now over 250!)

(in 2023 around 1500 charging points – now over 2500!)

- Chargey
- E.ON
- JB Charge
- Mer
- Milepost
- Quello
- Recharge
- Vattenfall
- VCG

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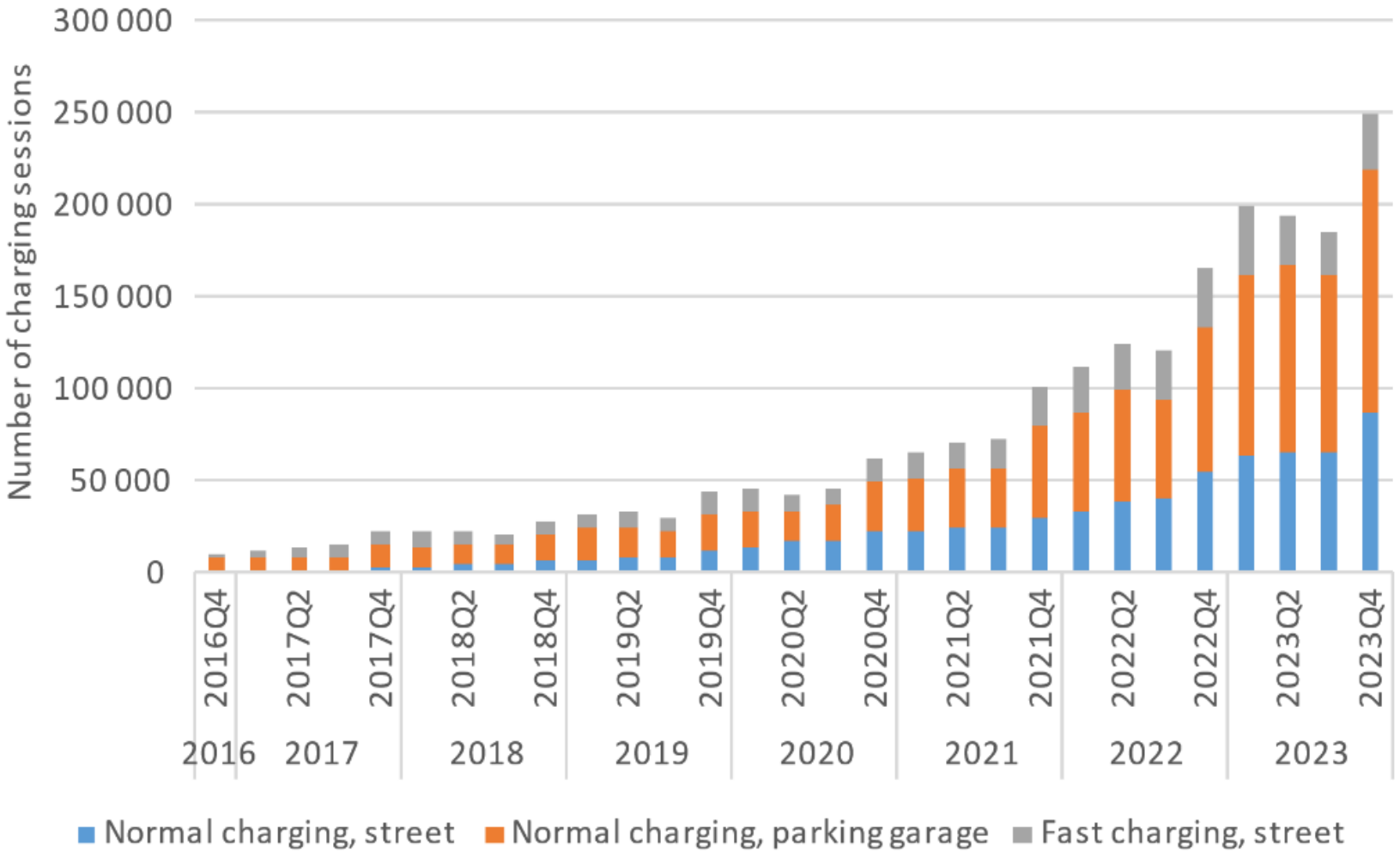
Number of charging sessions per category, 2016 - 2023



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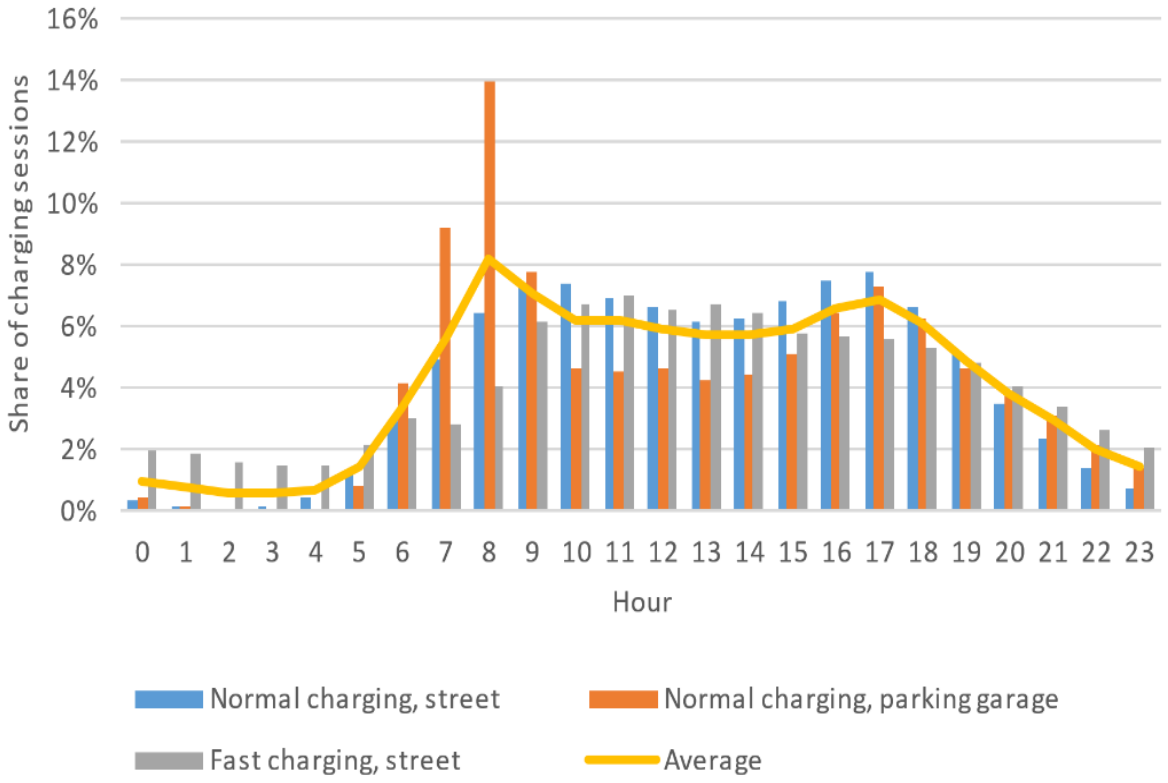
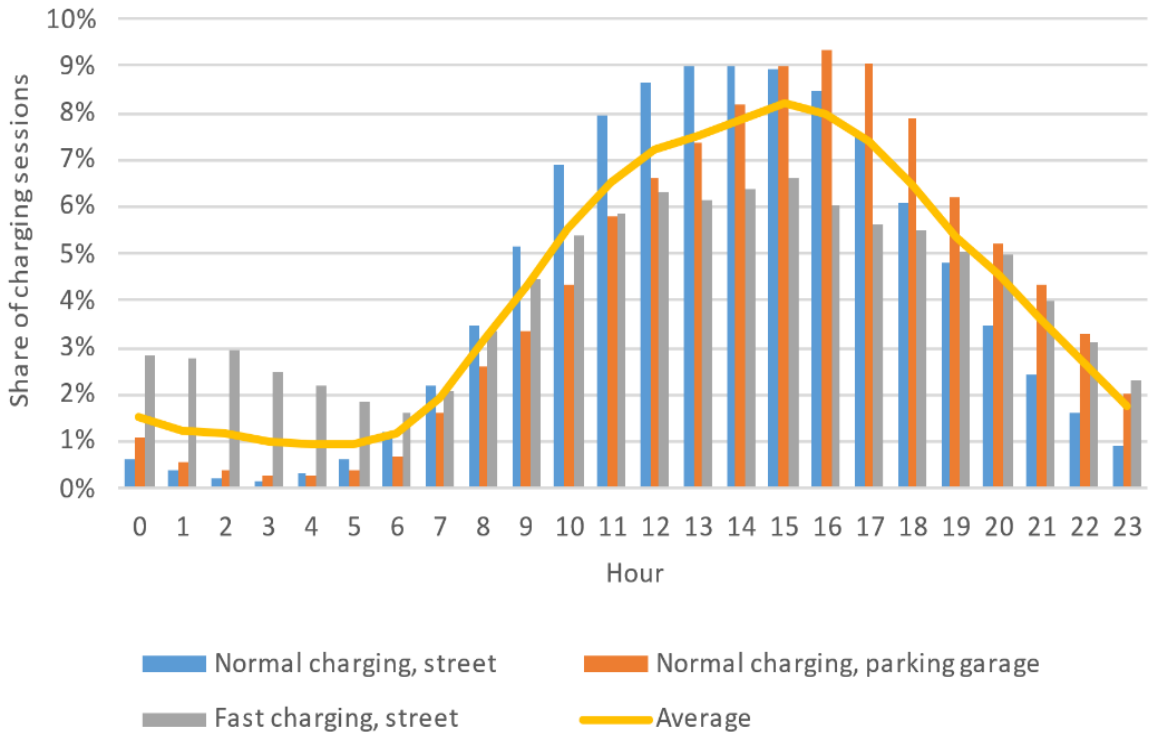
Most charging is done during daytime on weekdays



Share of charging sessions in 2023 that started at a specific time of day on weekdays for each charging category.



Share of charging sessions in 2023 that started at a specific time of day on weekends for each charging category.

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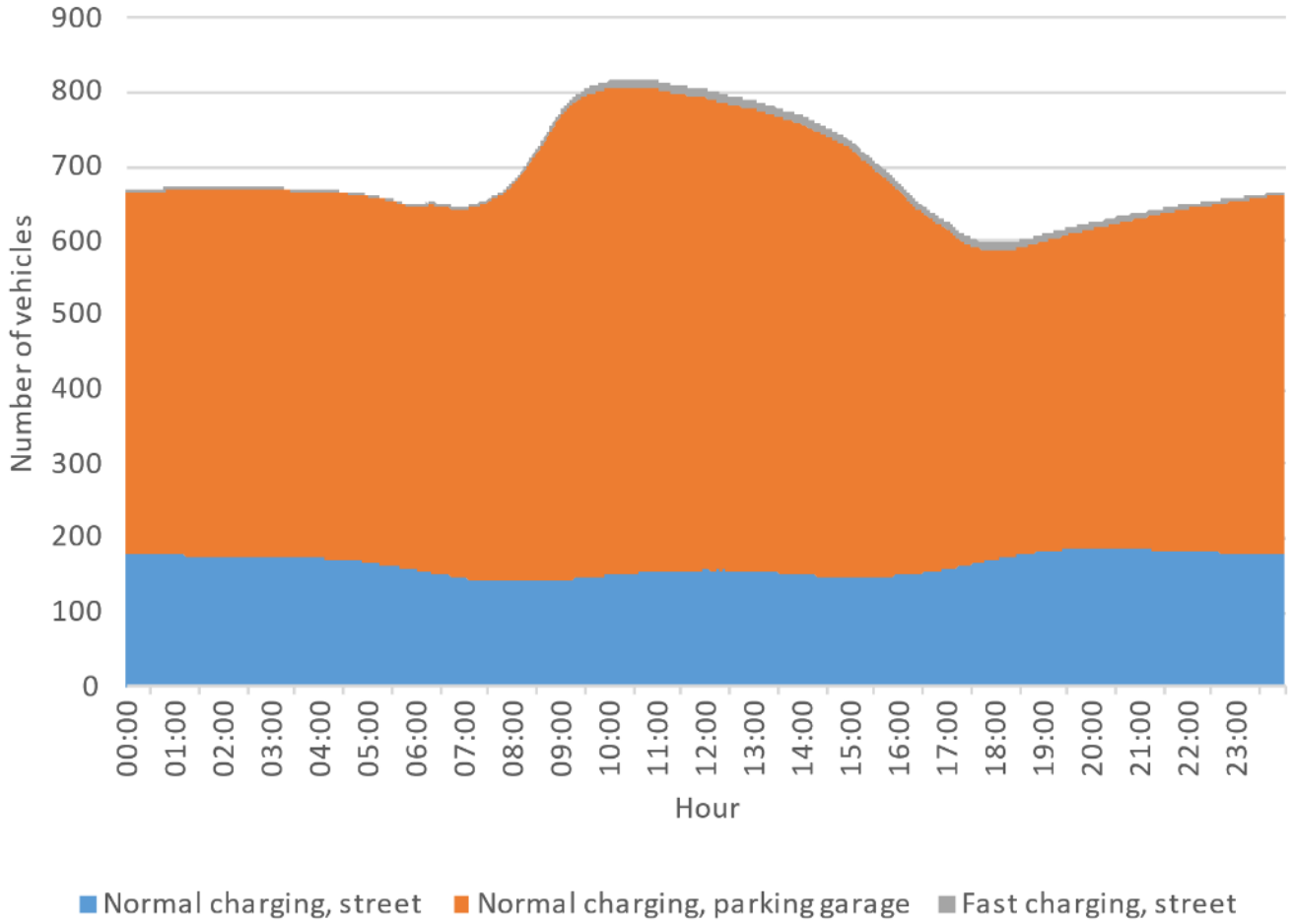
Around 600 vehicles charging simultaneously (max 1,459)

- Number of vehicles charging simultaneously during an average day
- Max = 20% of chargers were being used at the same time (Dec 2023)
- 0.6 charging sessions/day for on-street normal chargers
- Most popular normal chargers have 2.3 sessions/day
- Most popular fast chargers have 14.5 sessions/day



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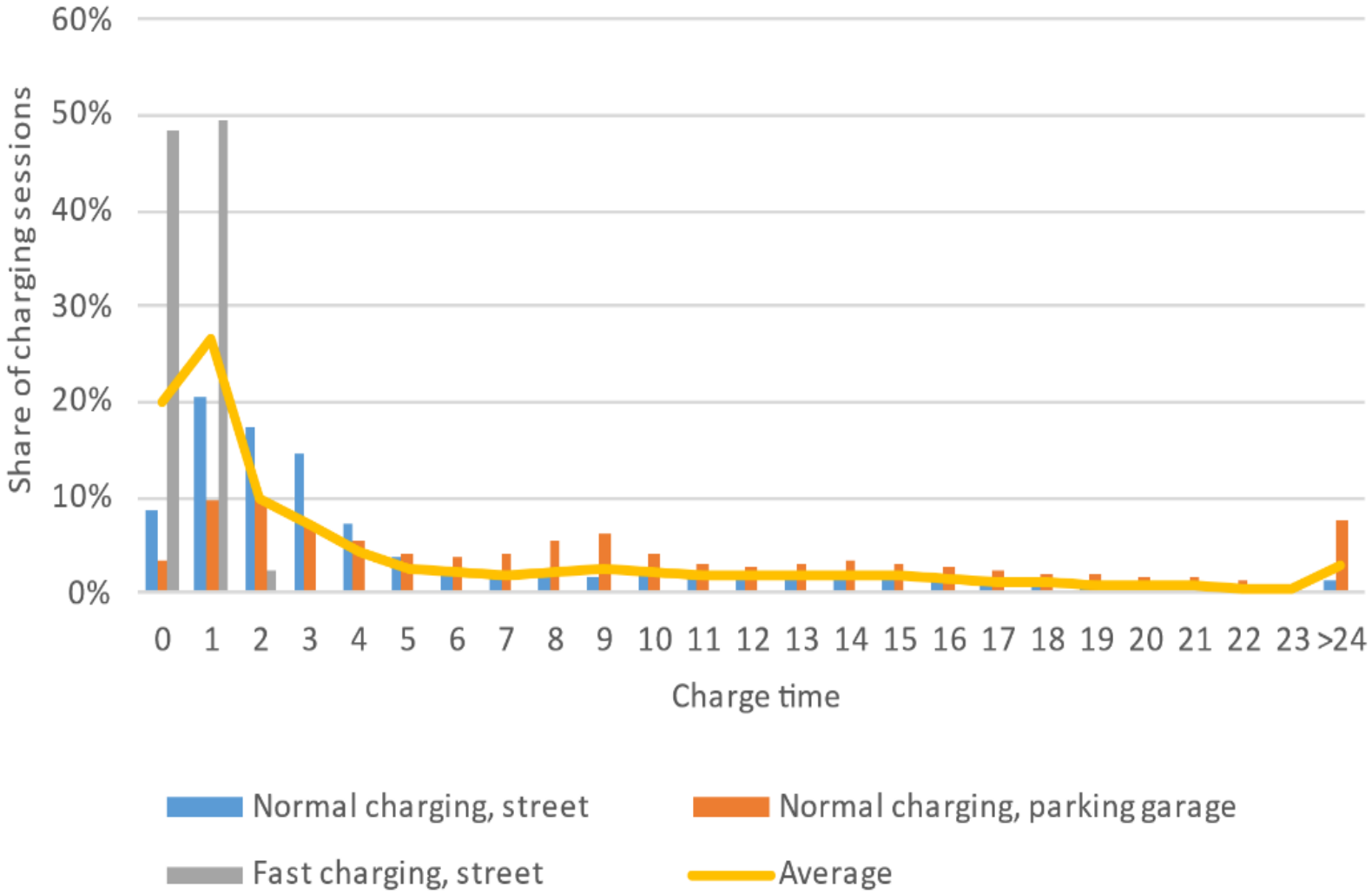
The majority of charging sessions are under 3 hours

- Max 3 h on-street daytime
- Exception: Valhallavägen 24 h
- Fast charging max 30 min
- Longest sessions in garages
- Average charging time varies from 2 – 17 h depending on garage



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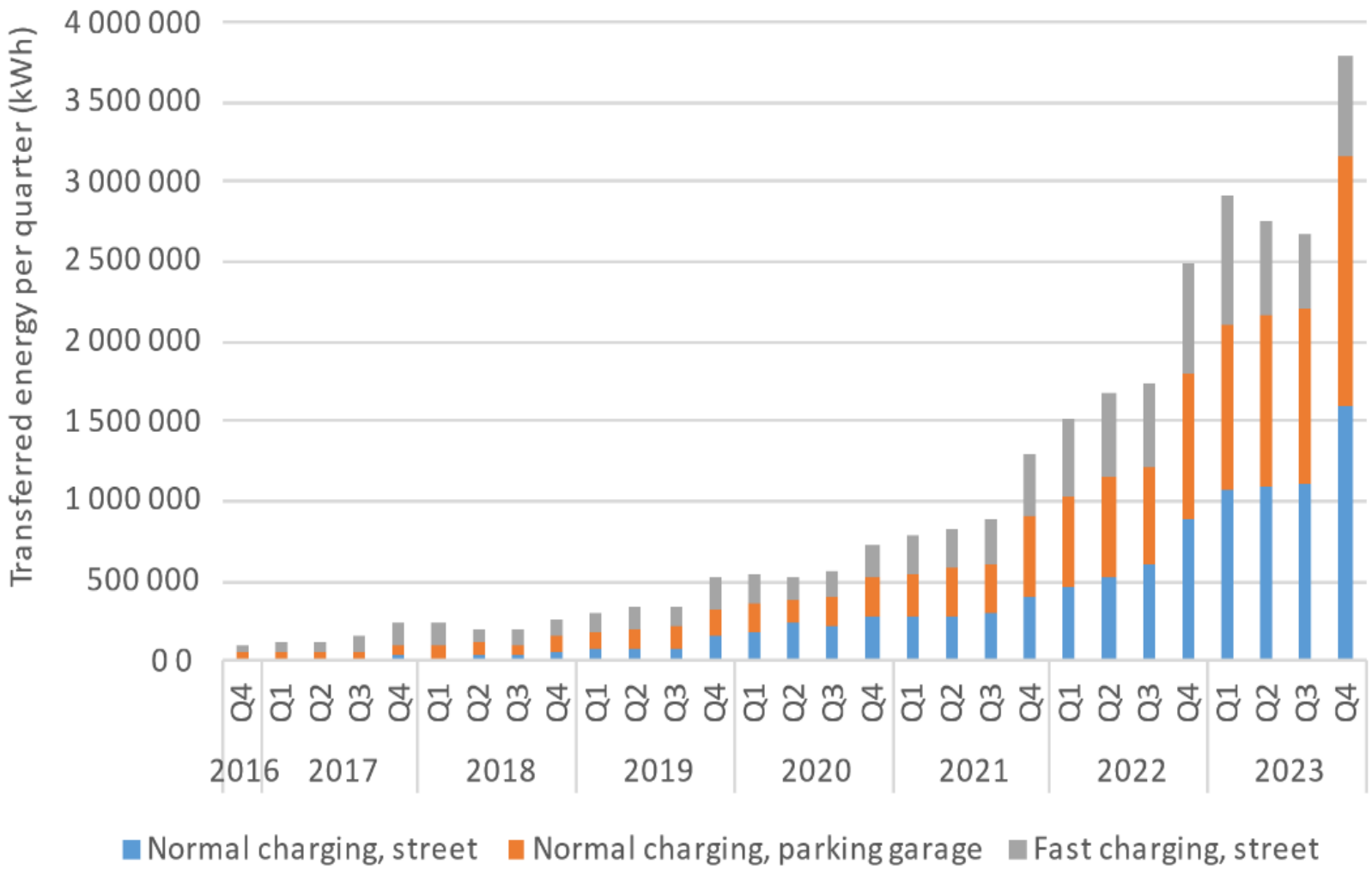
Energy transfer per quarter, 2016 - 2023

- Majority of charging sessions lower than 10 kWh
- 16 kWh average transfer per session
- Average transfer per day is 209 kWh for fast chargers
- Average energy transfer has increased during the last three years



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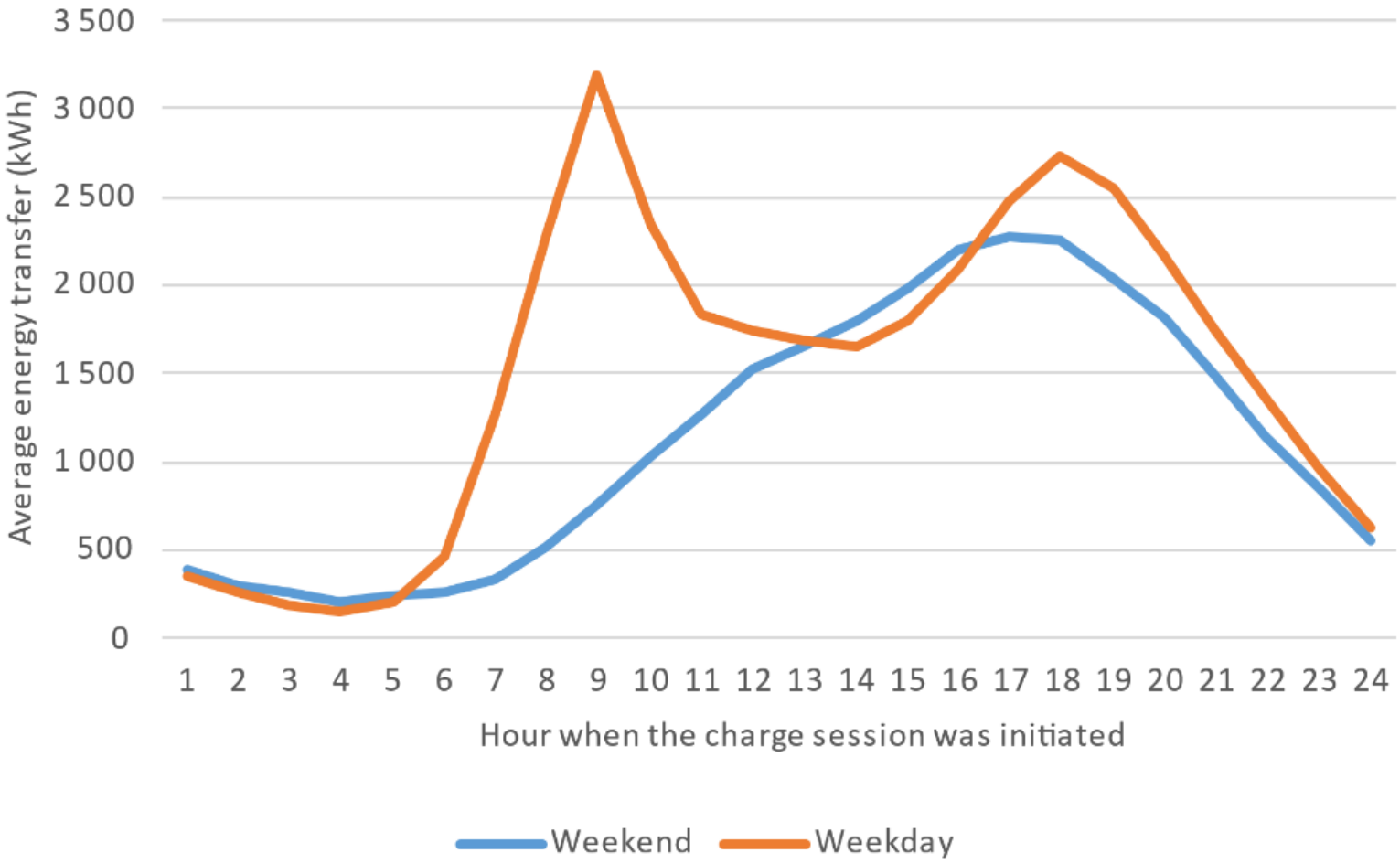
Average energy transfer per day

- All public charging points
- Differences between weekdays and weekends



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How much charging is required?

- 20 % of charging points were used simultaneously in 2023
- A 2022 study showed on-street charging points were occupied around 50 % of time

Summer 2022	Normal charging, street	Fast charging, street	Total
Parked cars	56 %	31 %	53%
Parked cars that were also charging	42 %	22 %	39 %

- Not all cars using charging points are charging!
- Public charging stimulates the electric vehicle market

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Lessons

- Plan for data collection
  - Make it a condition to grant access and permits
  - Allocate resources to monitoring and evaluation
  - Make data public and if possible open
  - Try to align data to fulfil multiple objectives
    - To inform planners
    - To inform service providers and stakeholders
    - To inform end-users
    - To inform politicians

  Report on progress – public charging without large public investment is possible !

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Thank you!

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