

# Sustainable transportation in City of Lappeenranta

18.11.2021

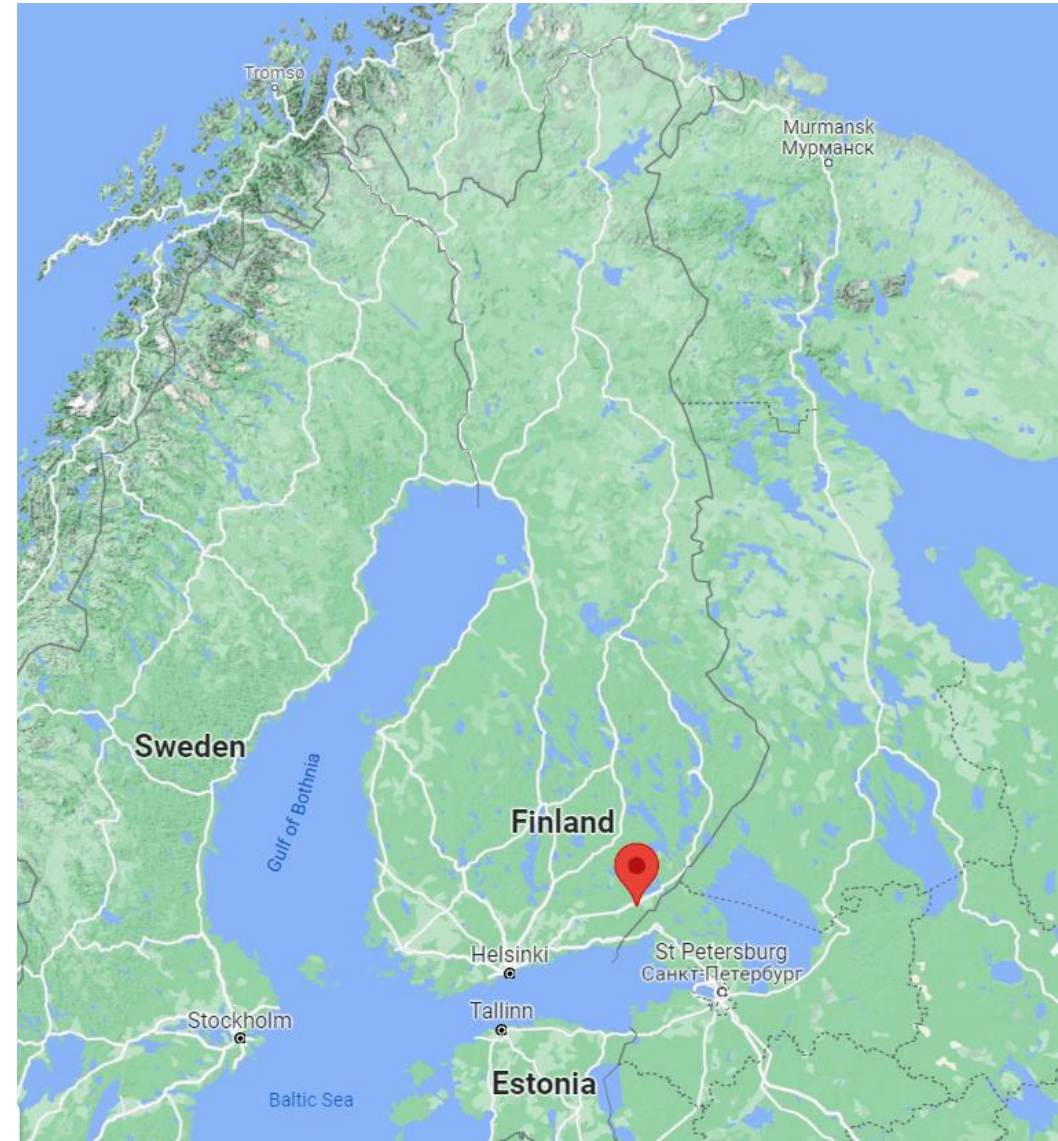
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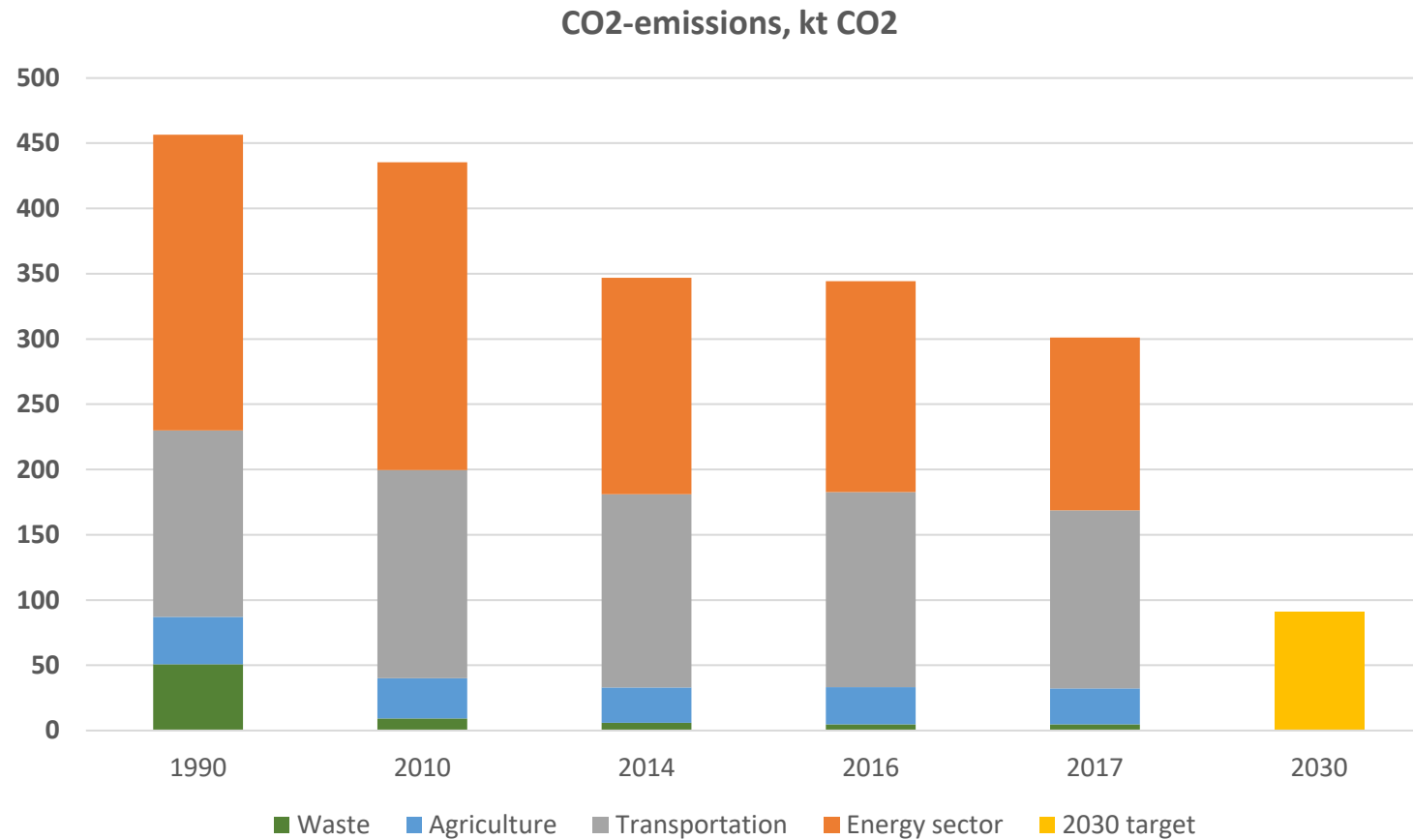
# City of Lappeenranta

- Population: 73 000

EU Green Leaf Award winner 2021



# CO2-emissions



1990 457 kt  
2030 target - 80%  
= 91 kt



# Plan, decision and action

- Lappeenranta aims to be carbon neutral in 2030
- CO<sub>2</sub>-emission reduction of 80 % and 20% carbon sinks and compensations
- City council 2017
  - environmental criterias and lifecycle cost calculations for transportation procurements
  - City purchases only light vehicles that use renewable energy (biogas and electricity)
  - cars using fossil fuels only possible if no other viable option available.
  - City encourages also other companies and partners to purchase clean vehicles

## AUTOT

### Lappeenranta hankkii jatkossa kaasu- ja sähköautoja – diesel- ja bensamalleja voidaan ottaa käyttöön enää "vain erityisyistä"



24.3. 11:27 Lappeenrannan kaupunki, kaupungin konserniyhtiöt ja Etelä-Karjalan sosiaali- ja terveyspiiri (Eksote) haluavat jatkossa hankkia pääosin uusiutuvalla energialla käyviä autoja, eli kaasu- ja sähköautoja.



# Results

- Since 2017 city, companies owned by city and regional social and health care district have purchased or leased over 50 new biogas cars and several electric cars.
- Yearly emission reduction over 200 tons of CO<sub>2</sub>
- Cost reduction: not calculated, but in most cases total cost of ownership has been significantly lower than for gas/diesel cars. Estimated fuel cost savings 80 000 eur/year
- 2021 regional waste management company opened biogas plant
  - local biogas from biowaste and municipal waste water
  - biogas price 1,2 eur/ kg (gasoline equivalent price of 0,77 eur/l). Current gasoline price is 1,8 eur/l (6,8 eur/gallon)



# Efficient use of the fleet

- Most of the cars used only 8 am – 4 pm and not used on the weekend.
- More efficient use of the fleet? Sharing between departments? Sharing with citizens?
- Two models:
  - 1) Sharing vehicles owned by city
  - 2) Getting cars as a service from car sharing company

# Sharing city owned vehicles

- Car sharing companies didn't have model ready for cities and municipalities (2016-2017)
- Lappeenranta decides to pilot sharing city owned cars together with car sharing company, Bloxcar.fi
- First city in Finland
- 5 cars, one van and a trailer

## **Results:**

- Media coverage
  - Overall positive
  - Backlash from local rental companies
  - Rental process (handing out the keys, communication) takes time.
  - Service was phased down in 2018 and replaced with another service

# Electric cars as a service?

- City rents cars for office hours, 8 am – 4.30 pm.
- On Evenings and on weekends service provider has to provide rental service for citizens
- Procurement process started at fall 2017.
  - Information requests, market dialogue with possible service providers.
- Service started 15.5.2018 with four Renault Zoe electric cars

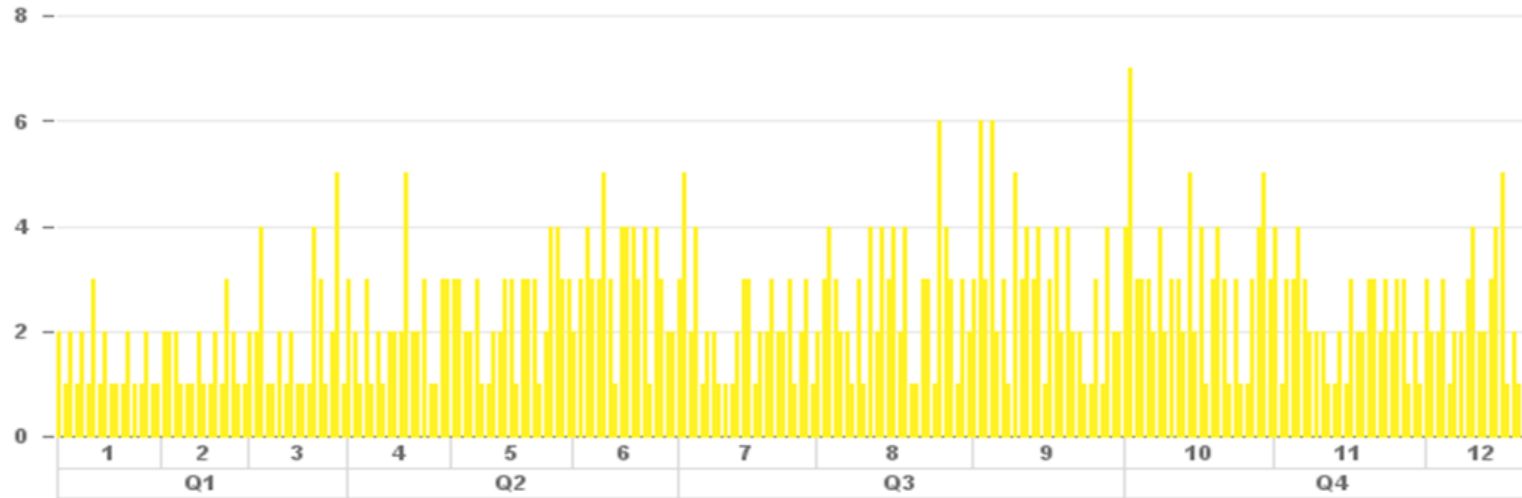
<https://www.energioloikka.fi/en/the-city-of-lappeenranta-was-awarded-shared-electric-cars/>





# Electric cars as a service?

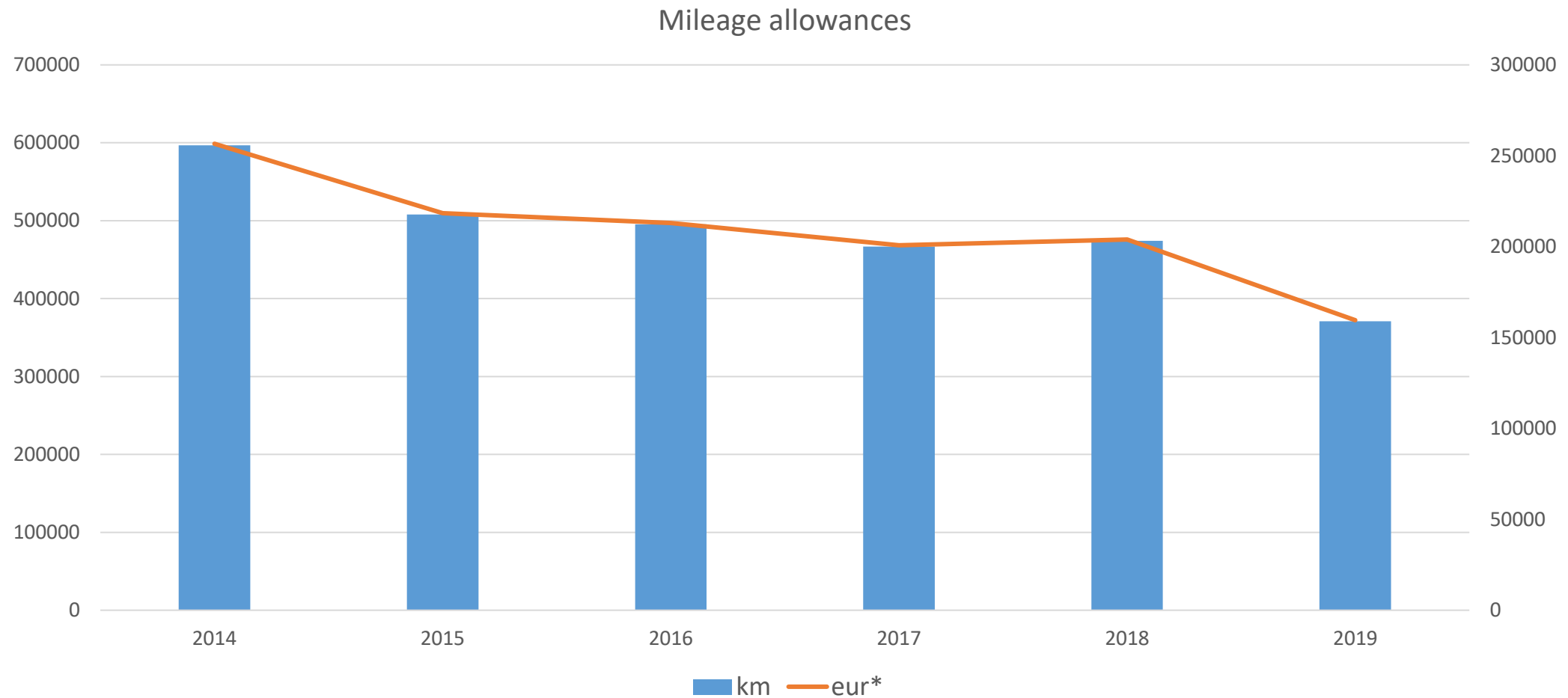
Bookings per day



- Cars are shared between departments. Four shared cars replaced six old gasoline or diesel powered cars
- Total cost 520 eur/car/month, including everything (cleaning, repairs & maintenance, electricity, insurance)

	Rentals	Hours
City	266	963
Private	40	207
All	306	1170

# Mileage allowances



	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
1:00	0%	0%	0%	0%	0%	0%	0%
2:00	0%	0%	0%	0%	0%	0%	0%
3:00	0%	0%	0%	0%	0%	0%	0%
4:00	0%	0%	0%	0%	0%	0%	0%
5:00	0%	0%	0%	0%	0%	0%	0%
6:00	0%	0%	0%	0%	0%	0%	0%
7:00	15%	20%	25%	20%	15%	0%	0%
8:00	20%	25%	30%	25%	20%	0%	0%
9:00	25%	30%	35%	30%	25%	0%	0%
10:00	30%	35%	40%	35%	30%	0%	0%
11:00	35%	40%	45%	40%	35%	0%	0%
12:00	40%	45%	50%	45%	40%	0%	0%
13:00	35%	40%	45%	40%	35%	0%	0%
14:00	30%	35%	40%	35%	30%	0%	0%
15:00	25%	30%	35%	30%	25%	0%	0%
16:00	20%	25%	30%	25%	20%	0%	0%
17:00	15%	20%	25%	20%	15%	0%	0%
18:00	15%	20%	25%	20%	15%	0%	0%
19:00	5%	10%	15%	10%	5%	0%	0%
20:00	0%	5%	10%	5%	0%	0%	0%
21:00	0%	0%	5%	0%	0%	0%	0%
22:00	0%	0%	0%	0%	0%	0%	0%
23:00	0%	0%	0%	0%	0%	0%	0%
0:00	0%	0%	0%	0%	0%	0%	0%
<b>Daily AVG</b>	<b>13%</b>	<b>16%</b>	<b>19%</b>	<b>16%</b>	<b>13%</b>	<b>0%</b>	<b>0%</b>
<b>Weekly AVG</b>	<b>11%</b>						

Neuwirt, G., Enabling the MaaS Ecosystem, Ibiola Mobility Solutions GmbH, esitys 29.6.2017, [Viitattu 17.8.2018]. Saatavissa: <https://www.fluidtime.com/wp-content/uploads/Symposium-2017/Fluidtime-Symposium-2017-presentation-Gerold-Neuwirt.pdf>

# City bike system

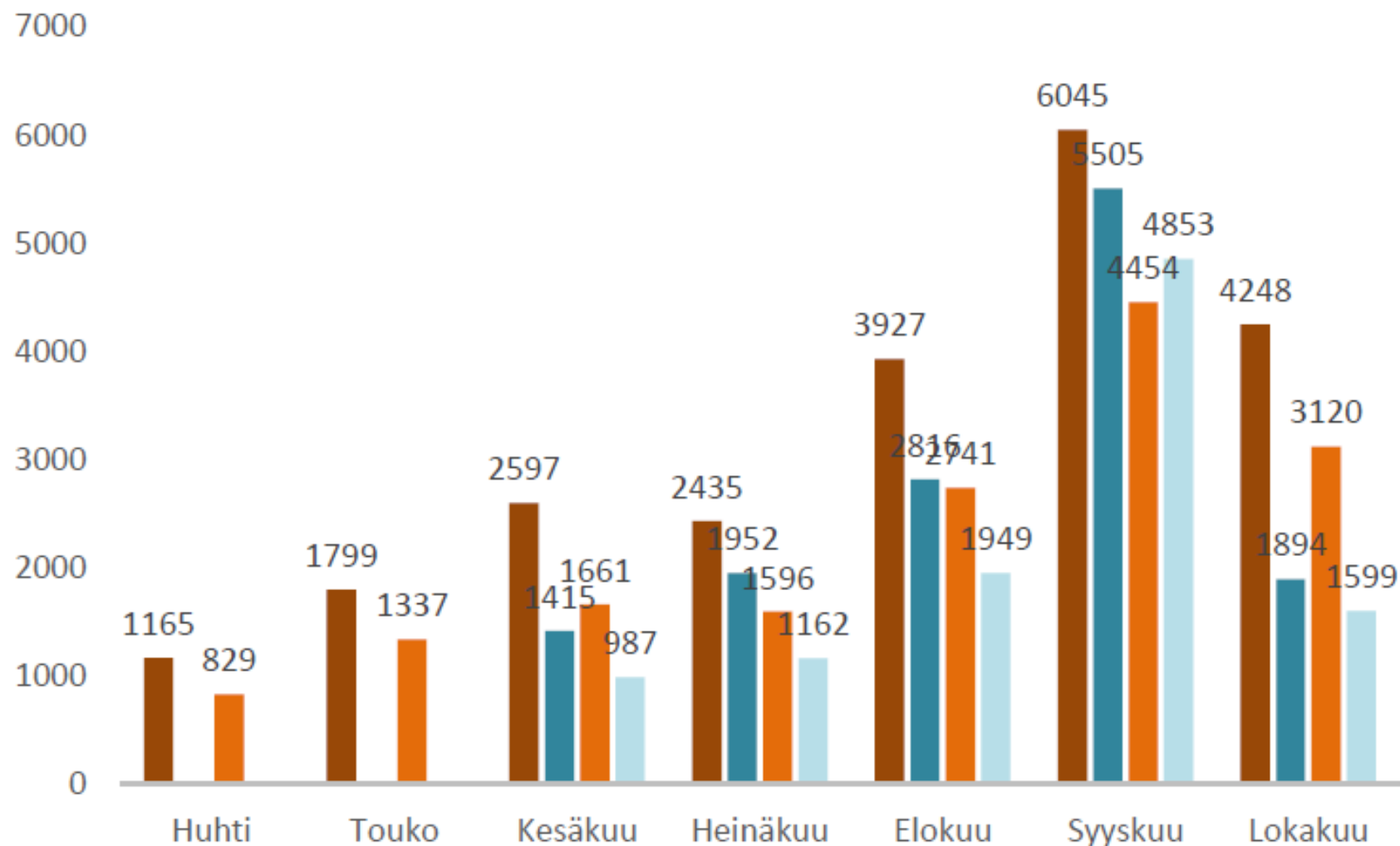
- City bike systems have been traditionally expensive to set up and viable only for bigger cities.
- We had very limited budget for setting up the system (60 000 eur for 3 years)
- Some innovative approach was needed
  - Negotiations with big companies, university and neighbour city, Imatra
  - City of Lappeenranta completed the tendering process.
  - Winner Kaakau Oy made separate agreements with partner
  - System of 85 – 100 bikes.
  - Monthly membership 9 eur.
  - City's payments in 2019 were slightly under 1 eur/trip





# Käyttömäärät / kk

Matkat M 2019 Vuokraukset V 2019



# In the future?

1. Encouraging companies and organizations for car sharin
2. Parking space developement for shared cars
  - Electric car charging and parking permits
3. Biogas vs electric cars
  - Clean vehicle directive: only electric cars are clean.
4. Remote work gets more common. How does it affect the demand?



More information at  
[www.greenreality.fi/en](http://www.greenreality.fi/en)

**Thank you!**

  
**LAPPEENRANTA**  
THE CLIMATE CAPITAL OF FINLAND

