

Electric Vehicle Deployment: Parking Matters

High Level Meeting, 6th July 2022
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Trondheim

Agenda

1 EV incentives in Norway

2 SUMP and parking issues

3 Impact on Public Space

4 Parking management

Incentives for EVs in Norway:

1

Buy free of VAT

No annual vehicle tax. X)

Free of cost second-hand registration

Free passing on toll roads X)

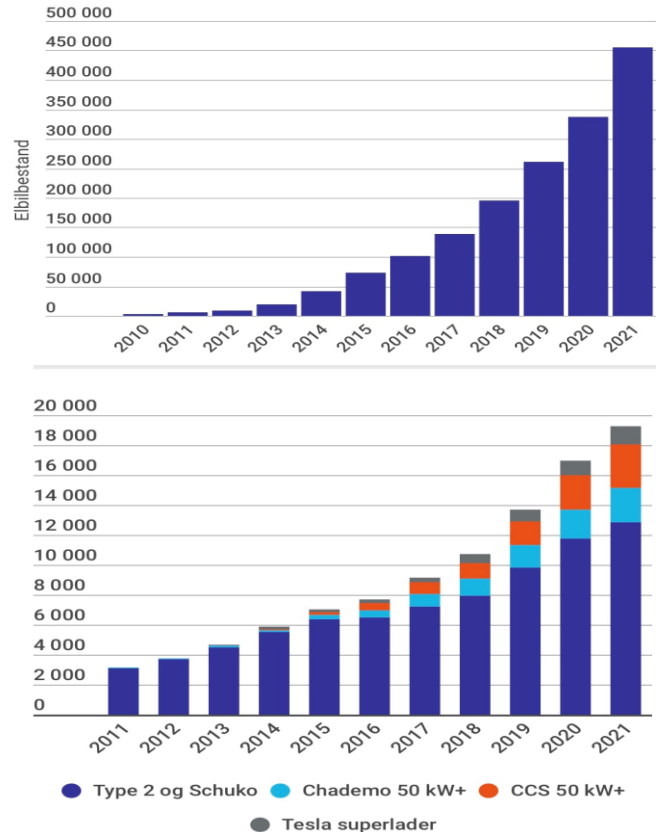
Access to public transport lanes

No parking fee for regulated public on-street parking X)

Free charging on public parking spaces for Evs

X) Later changed or in the process of

Market response to EV incentives



The Urban Challenge

- Fast growing fleet of EVs
- Type 2 AC charger dominant
- More frequent utilization per point
- Fast & superfast DC take the market
- Type 2 charging goes off-street

Public Supercharge and Residents Normal Charge



2

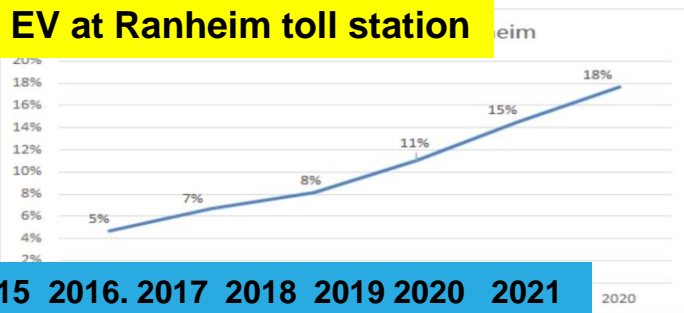
SUMP & PARKING issues

- Zero growth of city traffic by car
- Modal split towards PT, Bike and Pedestrians
- Avoid commuting to work by car
- Carefull reduction of on-street parking
- Increase the use of the off-street parking capacity
- Incentives for zero emission vehicles
- Reduction of emmissions and noice from traffic

The Traffic Index, share of EVs and NO₂ pollution: *Multiple co-relations are likely!*

20
15
8
7
5
0

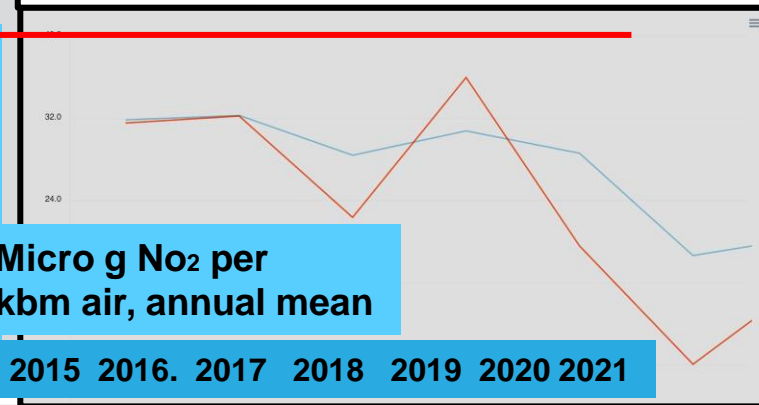
% EV at Ranheim toll station



2015 2016. 2017 2018 2019 2020 2021

40
32
24
16
8

Micro g No₂ per
kkm air, annual mean



2015 2016. 2017 2018 2019 2020 2021

Graf: Miljøpakken

Traffic index Public Roads Trondheim, 32 sites, cars

% change

2016-2017		0.3
2017-2018		-0.3
2018-2019		1.3
2016-2019		1.2
2019-2020	jan-des	-6,7
2020-2021	jan-mar	-5,0
2019-2021	jan-mar	-11,4

Graf: NILU

Impact on Public Space

3

Balance the car ownership

EVs to replace the family size fossils

Re-allocate and balance parking spaces to implement electromobility.

Residents in favour of giving up some space for EV charging opportunity.

EV parking matters

- Free parking is an attractive incentive but not sustainable
- EV energy efficiency
- Power supply is not sufficient
- Mobility hubs with EV option is part of early stage planning
- EV family size now replace fossile ones and take only a margin of more space



Photo: Trondheim parking



Parking Matters: Watch the space available

On-street parking Central Business Area

PARKERING PÅ GATEPLAN I MIDTBYEN

	Antall høst 2011	Antall høst 2016	Antall høst 2017	Antall høst 2018	Antall høst 2019	Antall høst 2020
Offentlig parkering på gateplan mot avgift med maks tid* Total	1 331	1155	1015	977	983	984
Handicapparkering HC	78	49	51	51	64	71
Elbil EV	6	6	6	20	22	29

* Inklusive avgiftsplassene i boligsonene.

EV parking + charging: Business Matters

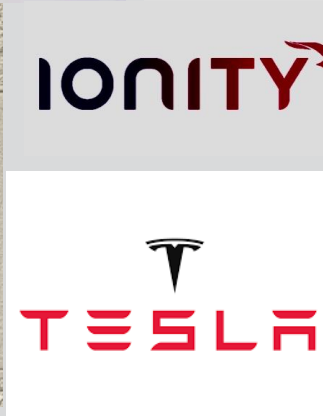
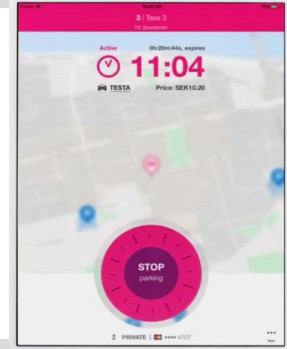
- The growing demand of charging goes beyond the regular municipal on-street parking service.
- Do not challenge private sector on the price of charging. Private sector dominate the charging services
- Experience: 22kW charging attractive part of residential parking regulation in urban areas when lack of access to private spaces



Photo: Birger Elvestad

Vehicle and Grid value chain: Fierce Competition

Main navigation



The magnitude of wireless user interfaces for payments, APP's memberships and loyalty programmes is escalating. Standards required.

Parking Management issues

4

Guidance to the last available charging space

Enforcement issues combining P&C

Pricing structures combining P & C

Location of fast charging stations

Location of car sharing spaces + charging

A never ending task

The dynamics of EV parking + charging: Quick change of regulations, standards and demand



Photo: Birger Elvestad

- 2017: New national parking regulation:
- *Always 1 available charging space, but no obligation above 6 % of total spaces*
- 2018 – 2021 (Park4SUMP period) exponential growth of EVs
- Charging and parking gradually split. EV development required separate charging stations due to fast or ultra fast DC 50 kW – 350 kW

EV parking goes off-street

**Off-street parking space
for charging: 22kW**

**Euro 30 per month
added to the
subscription fee for a
parking space**



Photo: Birger Elvestad

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