Electric transport in Norway

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- Background/history
- Charging infrastructure

NORWAY

40 % of areal mountains

5 million inhabitants

Associated with EU

100 % renewable electricity

Main industries:

Oil and gas, Fish, Aluminum & metallurgic industries, shipping & offshore services, turism.

Status electric cars

- Almost 3 million cars in Norway
- More than 400.000 are electrical

September 2021:

91 % of all new private cars was electric

52 % of all new company was cars electric

2025:

All new cars must be electric / 0-emission

Energy consumption:

0,2 kWh/km , when all electric => 9,4 TWh in total

Status electric bus

Public transport:

Public tender – companies operate

Many renewable energy sources tested

40 % of city busses in Oslo electric

+ Først kunne de ikke lades, så kunne de ikke kjøres med kjetting – problemene står i kø for nye elbusser

130 year-around ferry routs

“Bastø Electric” the biggest electric ferry:

- 139 meters
- 200 cars + 24 trucs
- 4,3 Mwh batteries
- 9 MW charger

Saves 2-million-liter diesel annually

Harbour, air-port and regional grid operatior copperate:

Stavanger – Norway oil-capital

- Prepare for electrical ships and air-planes
- Manage and distribute available capacity

The Norwegian “Th!nk” electric car 1991 - 2011

Support for electrical cars established 20 year ago

- Excepted from value added tax and other taxes
- Free toll road
- Free parking
- Drive in bus-lane

The support has lasted up to today and made electrical cars and petrol completable in purchase price but cheaper to use.

- The cost of tax exception has become huge
- Taxes expected to increase from 2022

Home charging

<u>First generation, small cars:</u>

- 3kW – 220 V, 10 A. Ordinary electrical socket
- Range 50 km – mostly used in cities
- Municipalities started to dedicate parking with charging possibilities

<u>Today, big cars:</u>

Home charging still most common.

- 7 – 22 kW
- Smart home charger

Most homes has standard 32 – 50 A installed

More complicated in apartment buildings

Private parking:

- Access to changing regulated by law
- Public grants for charging infrastructure
- Smart charging – load-sharing

Street parking:

- Places dedicated for changing (7 kW)
- Public regulation - Private operators.

Highway charging

Commercial market :

- Super – chargers (50 – 150 kW)
- Commercial market
- Many providers, including petrol-stations

- Challenge to find good space (many stakeholders)
- Need strong electrical grid
- Attractive – people eat & shop wile charging

Improvement points:

- Not understandable price structure
- Different app’s and payment systems
- Not always in function
- Some with spots on the map & sometimes queue on tourist destinations

Electrification & climate

Norway's target like to EU:

Target 50-55 % reduction in 2030

Status 2021:

Minimal reduction since 1990

Challenge:

Growth in transport use and oil & gas production balance reduction in other sectors.

Solution:

Emission free transport (and oil and gas production) is important part Norway's climate change mitigation strategy.

Thank you!

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