Welcome to Norway the World’s EV capital
Program

• **Introduction**
  Petter Haugneland, Norwegian EV Association

• **Perspectives on Norway’s Supercharged Electric Vehicle Policy**
  Erik Figenbaum, Institute of transport economics

• **Carrot and whip – How does Norway do it?**
  Sveinung Kvalø, Cowi

• **The bumpy road towards better charging infrastructure**
  Erik Lorentzen, Norwegian EV Association

• **How did the car dealers cope, and who are the customers?**
  Anita Svanes, Volkswagen and Marina Maneas Bakkum, Nissan

• **Electric London Taxis in Oslo?**
  Phil Henrick, LEVC, formerly known as the London Taxi Company

• **TU TALK; live podcast**
  Jan Moberg, CEO, Teknisk Ukeblad Media and Odd Richard Valmot, Journalist, Teknisk Ukeblad Media
Norwegian market shares BEVs and PHEVs

Source: OFV

Europe
Top selling BEV models 2017

- VW e-Golf
- BMW i3
- Tesla Model X
- Tesla Model S
- Nissan LEAF
- Renault ZOE
- Hyundai IONIQ
- Mercedes-Benz B-Klasse
- Opel Ampera-e
- VW e-Up
- Kia Soul

Source: Ofv.no
Over 200,000 EVs in Norway!

Source: OFV and NPRA
Norway’s 2025-goal

• National Transport Plan for 2018–2029:

“The Government has established targets for new zero-emission vehicles. All new passenger cars and light vans sold in 2025 shall be zero-emission vehicles. All new urban buses sold in 2025 shall be zero emitters or use biogas”.

Perspectives on Norway’s Supercharged Electric Vehicle Policy
Perspectives on Norway’s supercharged electric vehicle policy

Nordic EV Summit Oslo/Himkok 31.01.2018

Erik Figenbaum, Chief Research Engineer
Institute of Transport Economics, Norway
Market shares by technology

Fleet at end of 2017
139,474 (5.1%) BEVs
67,577 (2.5%) PHEVs
Multi-level perspective (Geels) – Theoretical concept

GLOBAL LANDSCAPE

Disturbances/Pressure

REGIME

New technology regime

Window of opportunity

NICHE MARKETS

REGIME

Disturbances/Pressure

GLOBAL LANDSCAPE

Multi-level perspective (Geels) – Theoretical concept

GLOBAL LANDSCAPE

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New technology regime

Window of opportunity

NICHE MARKETS
A multi-level perspective on BEVs in Norway

- **Global autoindustry, climate policies, oil industry, energy prices, EU policies etc.**
- **Policies, incentives**
  Control of which vehicles are attractive to import/sell/buy
- **ICEV REGIME**
  Established actors (importers, dealers etc. and driving practices)
- **New actors developing and testing new technologies/practices**

**GLOBAL LANDSCAPE**

**NATIONAL GOVERNANCE**

**REGIME**

**NICHE MARKETS**
A multi-level perspective on BEVs in Norway

Source: Adapted from: Figenbaum, E. Perspectives on Norway’s supercharged electric vehicle policy, Environmental Innovation and Societal Transitions, 17. nov. 2016, http://dx.doi.org/10.1016/j.eist.2016.11.002
A multi-level perspective on BEVs in Norway

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A multi-level perspective on BEVs in Norway

Developed enabling technologies+vehicles

Stable policies – Strong incentives.

Weak, no vehicle production

Bottom-up experimentation

ICEV-actors grabbing opportunity

Establishment of mass market

27 year time span

GLOBAL LANDSCAPE

NATIONAL GOVERNANCE

NORWEGIAN ICEV REGIME

NICHE MARKETS

Household ICEV ownership peaked in 2014
There was no master plan

......but it worked

More information:

efi@toi.no   www.toi.no   www.mozees.no
Sveinung Kvalø

Cowi

Carrot and whip – How does Norway do it?
Norwegian EV policies

Sveinung André Kvalø
Senior adviser e-mobility, COWI
World leading market share for EVs

Zero emission
Plug-in hybrid
POLICY DEVELOPMENT

CARS FOR SALE

Sources: OFV, Elbil på norsk (2013)
The Registration Tax (or The Think Twice Tax)

Examples:

- Volkswagen e-Golf 115hp
  - Price before taxes: 33 200 USD
  - Registration tax: 0 USD
  - Value added tax: 0 USD
  - Price including taxes: 33 200 USD

- Volkswagen Golf 1,2 TSI 110hp Comfortline
  - Price before taxes: 24 000 USD
  - Registration tax: 7 600 USD
  - Value added tax: 6 000 USD
  - Price including taxes: 37 600 USD

- Volvo XC60 T6 Momentum R-design aut (3000 ccm, gasoline)
  - Price before taxes: 43 600 USD
  - Registration tax: 73 800 USD
  - Value added tax: 10 900 USD
  - Price including taxes: 128 300 USD
Type approval vs. actual emissions

Source: Norwegian state budget 2018

Source: International Council on Clean Transportation
A closer look at Volkswagen Golf's sales in Norway

![Graph showing sales per month from 2011 to 2017 for different types of Volkswagen Golf: Diesel, Gasoline, Plug-in hybrid, and Battery electric.]
Thank you!

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Erik Lorentzen

Norwegian EV Association

The bumpy road towards better charging infrastructure
The bumpy road towards better charging infrastructure

Erik Lorentzen, Head of Analysis and Consultancy
Norwegian EV Association
erik@elbil.no
www.elbil.no
How often do you charge...

Source: Norwegian EV owner survey 2017
2015: A national plan

- Public tenders for national fast charging network
- Every 50 km on main roads
- Finished by end of 2017
Challenges

• Access to charging at home

• Reliable equipment

• And...
Next step: Larger and faster
Pricing and payment systems

• Handfull operators with different payment systems
• Payment by RFID tags, SMS, mobile phone apps
• EV Association distributes universal RFID tag to members
• Pay per the minute
Charging – to sum it up

• Home charging is the backbone
• Initial support crucial
• Volume means business
• Large scale next
Nordic EV Summit in Oslo

• 1. – 2. February 2018: www.nordicevs.no
  • Will the grid collapse?
  • Large scale fast charging
  • Smart charging systems in large charging networks
Anita Svanes

Møller/Volkswagen

Marina Maneas Bakkum

Nissan
Phil Henrick

LEVC, formerly known as the London Taxi Company

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