The Penetration of Electric Mobility

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Due to growing environmental problems more and more countries try to set climate goals and advanced strategies regarding their transportation sector. Germany, Norway and China have a wide range of different ways to achieve their goals.

Germany

Motivation

- **Paris Agreement,** strict European Climate Targets, International Zero-Emission Vehicle Alliance
- Economy depends on the vehicle market

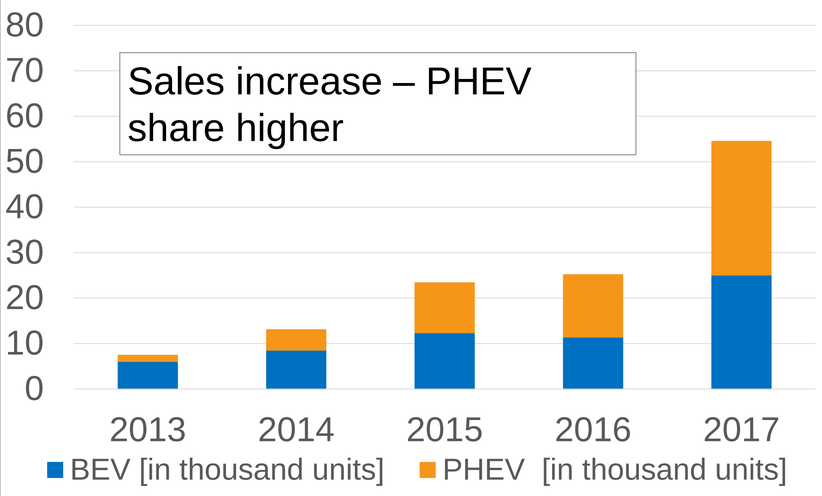
Strategies

- Goal of **German National Platform Electric Mobility:** lead market, leading supplier
- **Tax incentives**: 4.000€ for BEVs; 3.000€ for PHEV's; no Owner-Ship-Tax
- The **German Electric Mobility Law** enables EVs to have special rights in the normal road traffic.

Development

- many problems in terms of low-price classes and charging infrastructure
- Monetary measures not successful
- **1 Mio. EV's by 2020 won't be reached**

Sales of EV's in Germany



Source: Kraftfahrt- Bundesamt

Norway

Motivation

- Ambitious climate policy goals
- Transport sector causes 30% of total greenhouse gas emissions
- Reduction goal **2020: 85g CO2/km**

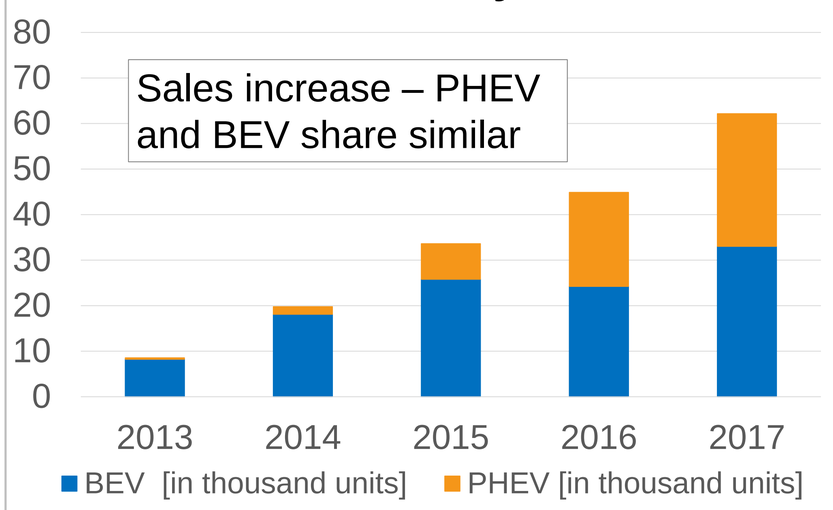
Strategies

1990/93 no import tax, free parking & charging
1996/97 reduced registration tax rate, low road tax, toll road exempt.
1998 imposed taxable benefit on Company cars
2001/05 VAT exemption and permanent bus lane access
2013 halved taxes on company cars

Development

- Financial incentives are more important than local incentives
- cost saving: 734€/year per vehicle
- **Number of EV's increased quickly**

Sales of EV's in Norway



Source: EAFO

China

Motivation

- EV's offer a technological restart → experience in the electronics sector
- vehicle stock is rising → High local **emission concentrat.**
- Very few cities reach the standard for good air quality

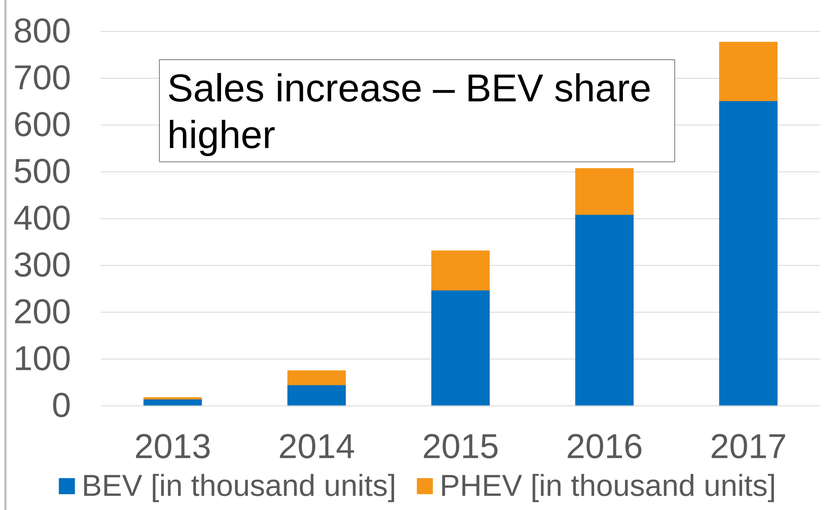
Strategies

- economy plan "**Made in China 2025**" → 80 Million EV's in 2030
- **Exclusive purchase premiums** for domestic manufacturers
- Subsidies depend on electric range
- **license lottery/** driving bans regulate the usability of conventional vehicles

Development

- 2014 – 2017: sales increased **tenfold**
- Domestic manufacturers dominate the market

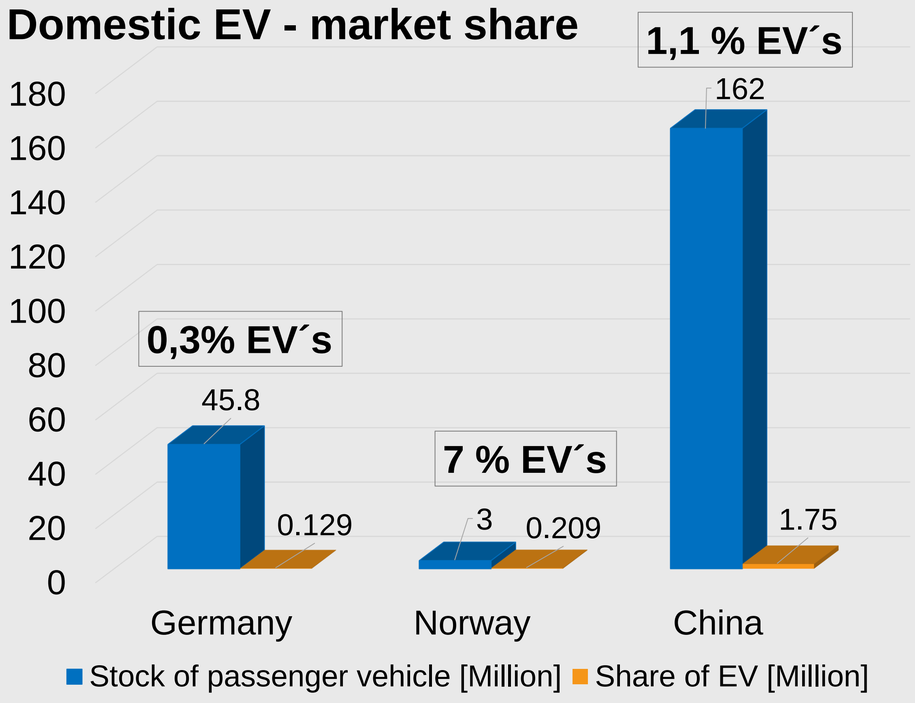
Sales of EV's in China



Source: China Assoc. of Automobile Mfr.

Comparison

Domestic EV - market share



Source: Statistics Norway (ed.), 2017; Kraftfahrt-Bundesamt (ed.), 2017; Statista (ed.), 2017

- **Germany**: only **0,3 %** of the car fleet of 46 Million are electrified
  - Low purchase premium (fixed amount), EV's more expensive than conventional cars, **15 EV's per charging station**
  - Germany's economic power is depending on the future technologies
- **Norway**: highest relative proportion **(7%)** → smallest car fleet
  - EV's 25% cheaper compared to conventional vehicles, **20 EV's/station**
  - electric-mobility completes the image of an emission-free country
- **China**: highest absolute number with **1,75 Million** EV's
  - Retail price of EV's halved by governmental incentives, **9 EV's/station**
  - Chinese manufacturers used the new technologies as a chance

→ **Amount of charging stations is not directly coupled with success of EV's, prices are more important, all countries have different motives**

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