

# Perspectives on Norway's Supercharged Electric Vehicle Policy

Electromobility: Challenging issues  
University Paris Dauphine  
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Research in motion

# The Institute of Transport Economics

- An independent, interdisciplinary non-profit research foundation
- Employees: 105
- Oslo, Norway

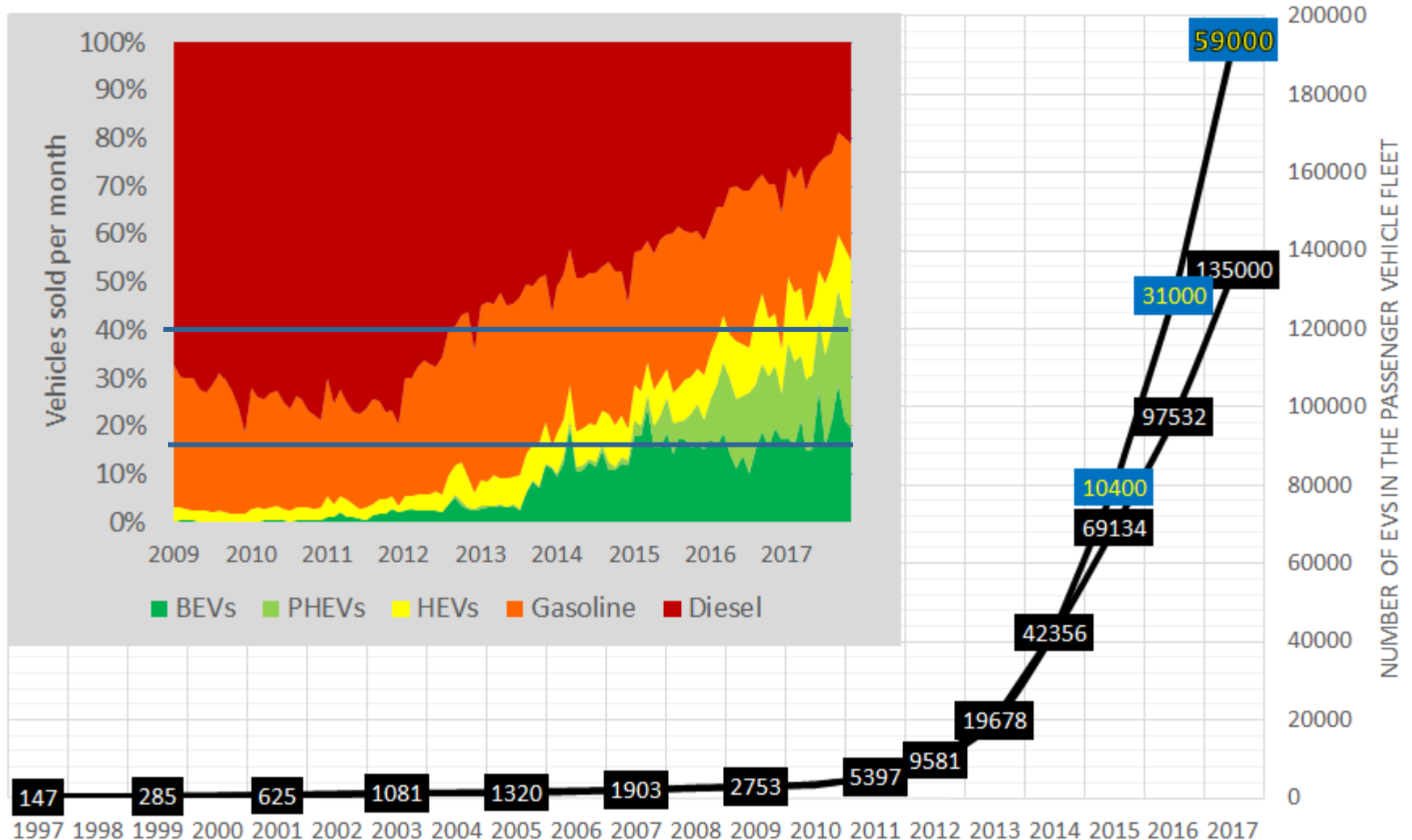
## Mission:

- Develop and disseminate transportation knowledge with scientific quality and practical application

## Research Staff

Engineers	16
Economists	29
Geographers	5
Psychologists	6
Sociologists	12
Political Scientists	9
Mathematicians	2
Other	10

# Market shares and fleet development



# Vehicle Taxation, VW Golf example

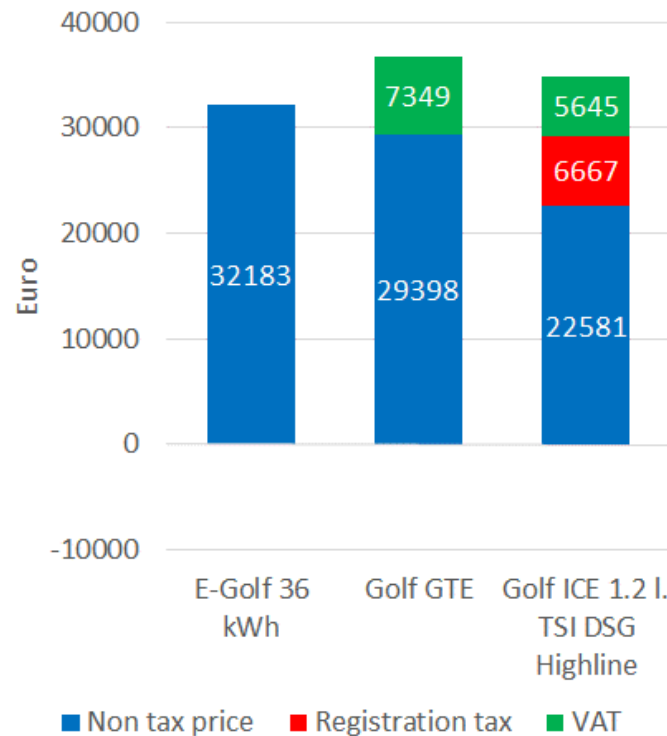
## High registration taxes since the 1960s

- Based on Weight, CO<sub>2</sub>-emission, NO<sub>x</sub>-emission
- Progressive

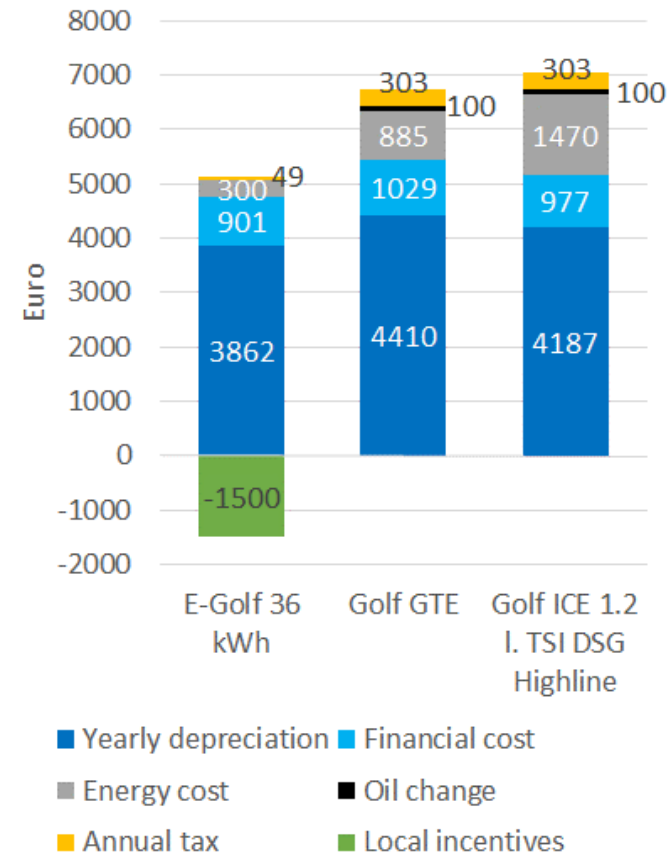
## BEVs

- Exempted from the registration tax since 1990
- Exempted from VAT (25%) since 2001
- Reduced annual tax since 2005

Purchase prices

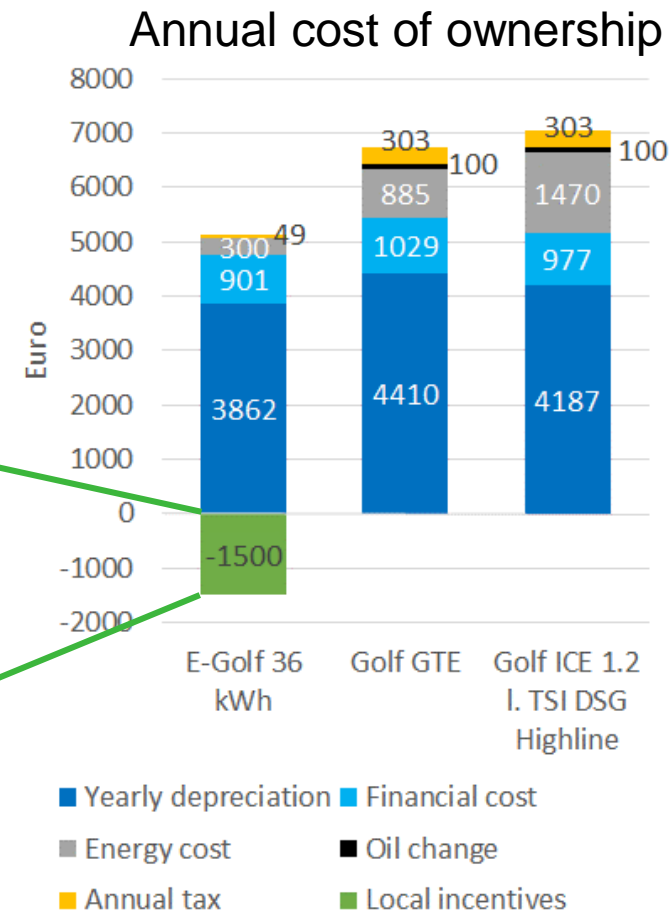
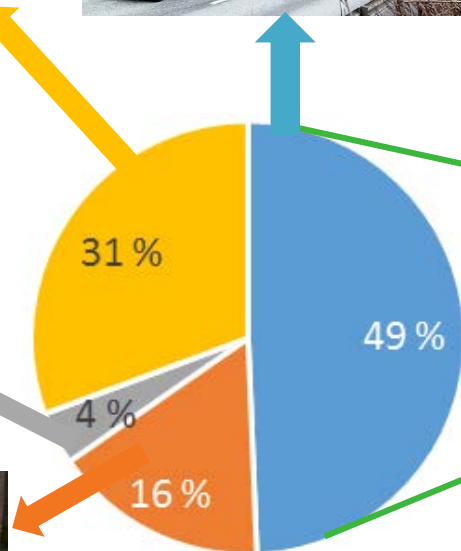


Annual cost of ownership



# Annual costs VW Golf

## Average value of local incentives

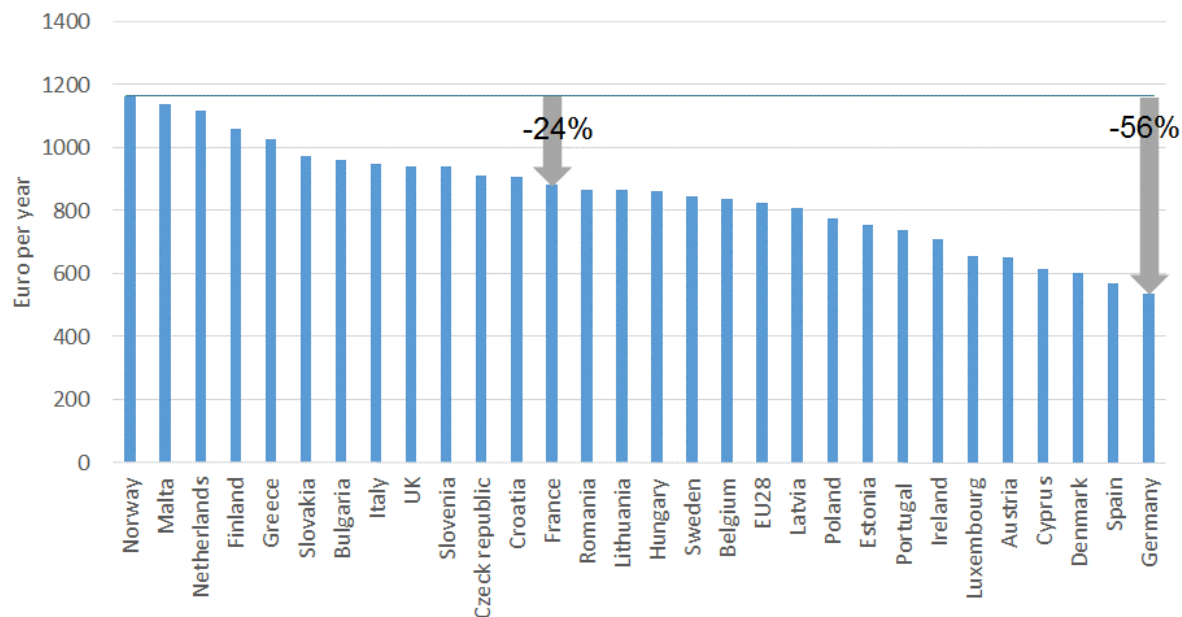


Source: Norwegian PEV consumer survey. 3111 BEV owners, 2065 PHEV owners, 3080 ICEV owners. March 2016, Institute of Transport Economics.

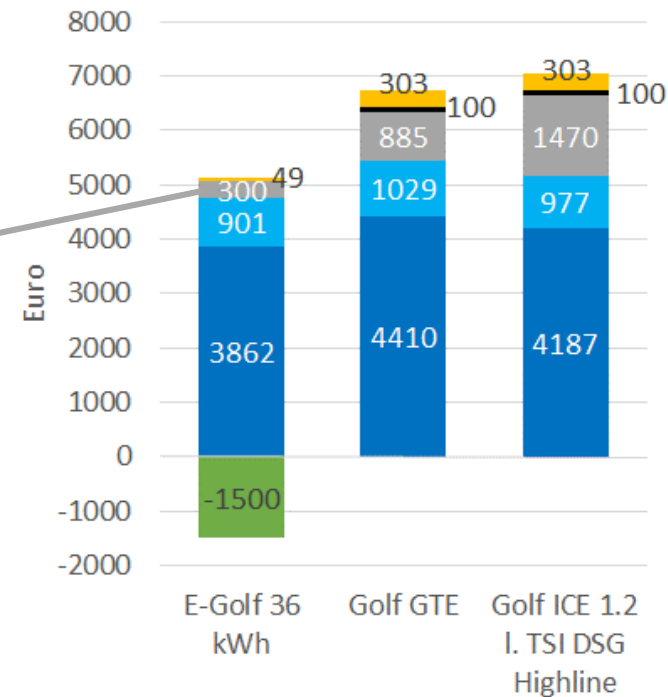
# Annual costs VW Golf

## Average value of local incentives

Energy cost saving with BEV over Diesel vehicle, 15000 km/year



Annual cost of ownership



- Yearly depreciation
- Financial cost
- Energy cost
- Oil change
- Annual tax
- Local incentives





# Reducing range challenges

94% of current BEV owners charge at home

75% of households can park on own land, 14% less than 100 meters away

## National fast charge support program

- 2011-ongoing
- Tenders:
- Cover all main-roads in Norway
- Two multistandard 50 kW chargers/50 km

## Fast charging in cities: Left to market

### Private initiatives fast charging:

- Kiwi - Food store chain
- Ikea – Furnitures
- McDonalds – Fast food chain

### Ultra fast charging coming in 2018:

- Ultra-fast charging – Ionity with CircleK
- 150 kW chargers – Existing operators

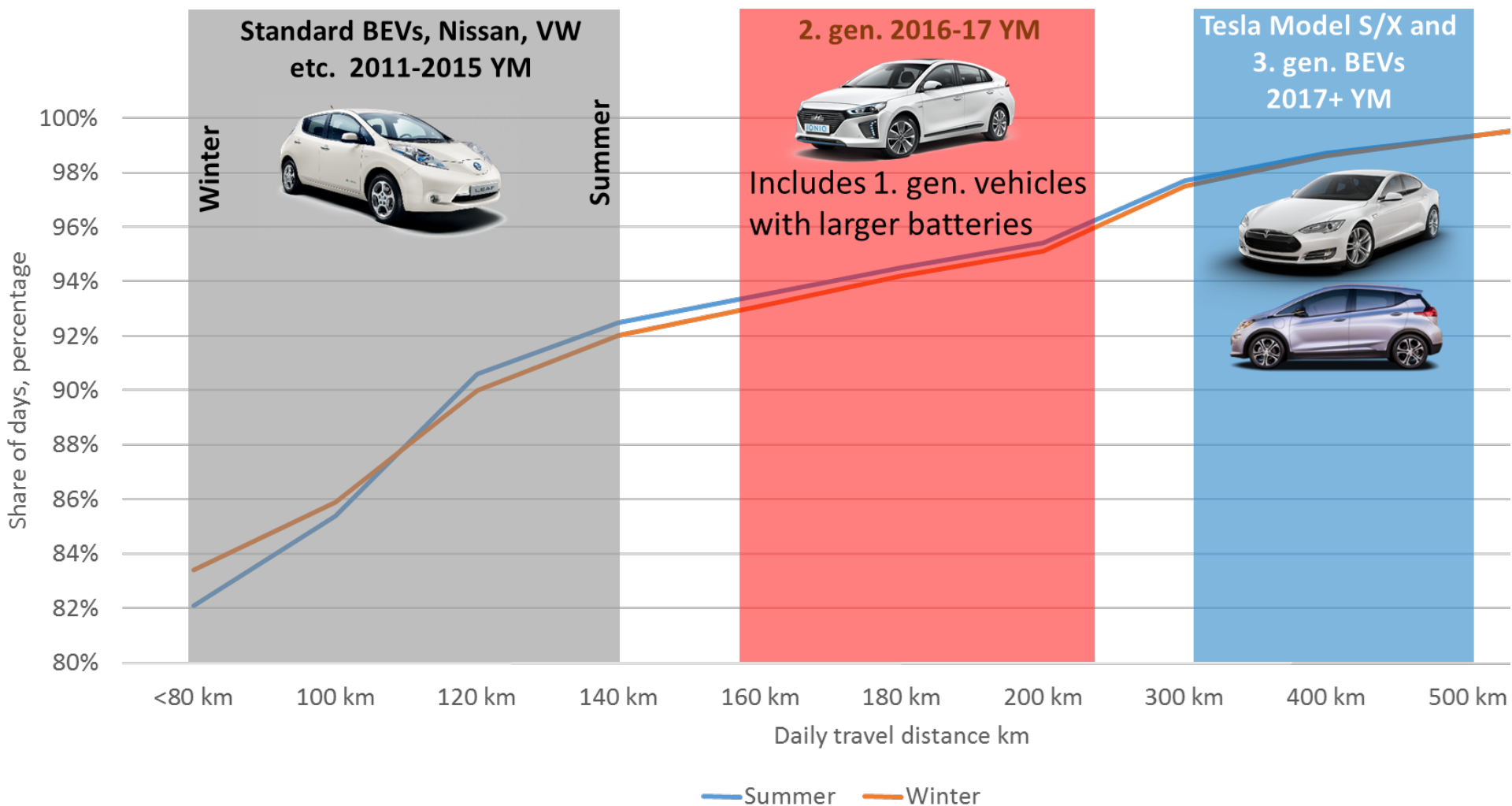


## Local/regional charger support

- Some local/regional support
- National program 2009 -14
- Support for people living in flats
- Two BEV charge garages in Oslo

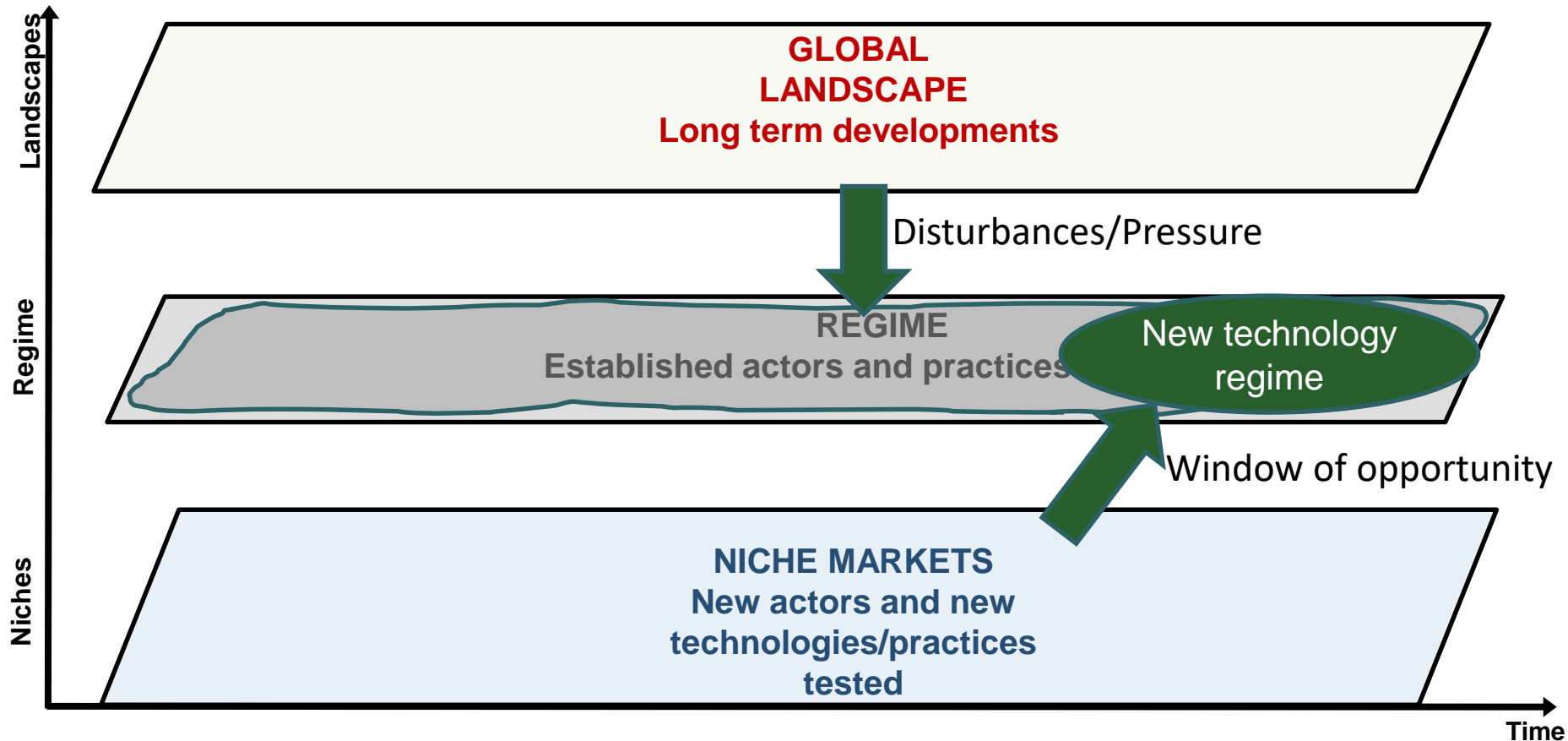
# Increasingly compatible

National travel survey data – 98% of vehicles driven < 300 km/day

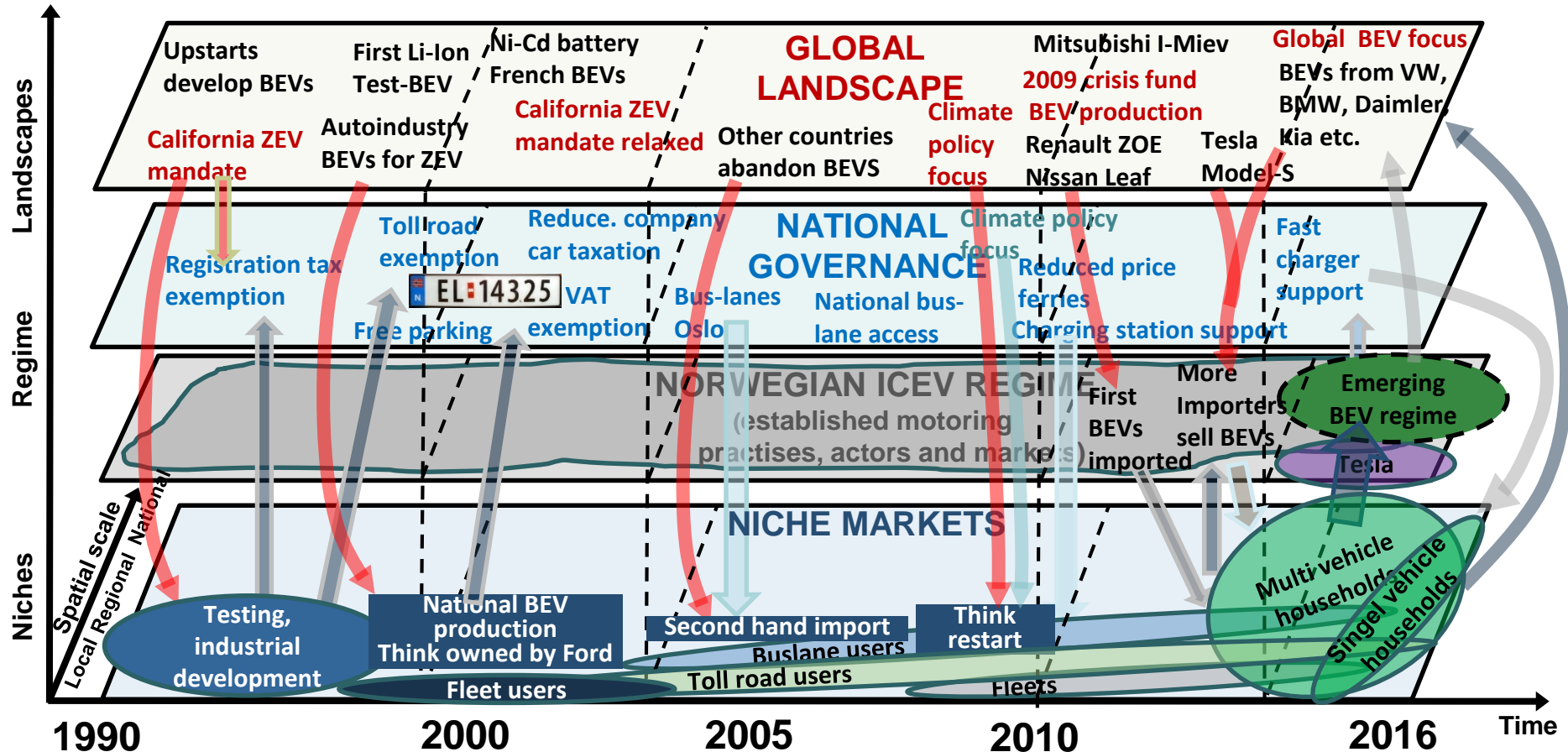




# Multi-level perspective (Geels)– Theoretical concept



# A multi-level perspective on BEVs in Norway



	1990	1995	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
BEV percentage of total fleet	0.03	0.03	0.05	0.06	0.06	0.07	0.08	0.09	0.11	0.12	0.15	0.23	0.4	0.8	1.6	2.7%	4%			
BEV percentage of new vehicle sales													0.3	1.4	2.9	5.6	12	18%	16%	

# The Norwegian incentive package became so large....

....to get people out of these....



.....and into these.....



...but now works much more efficiently...

...getting people out of these....

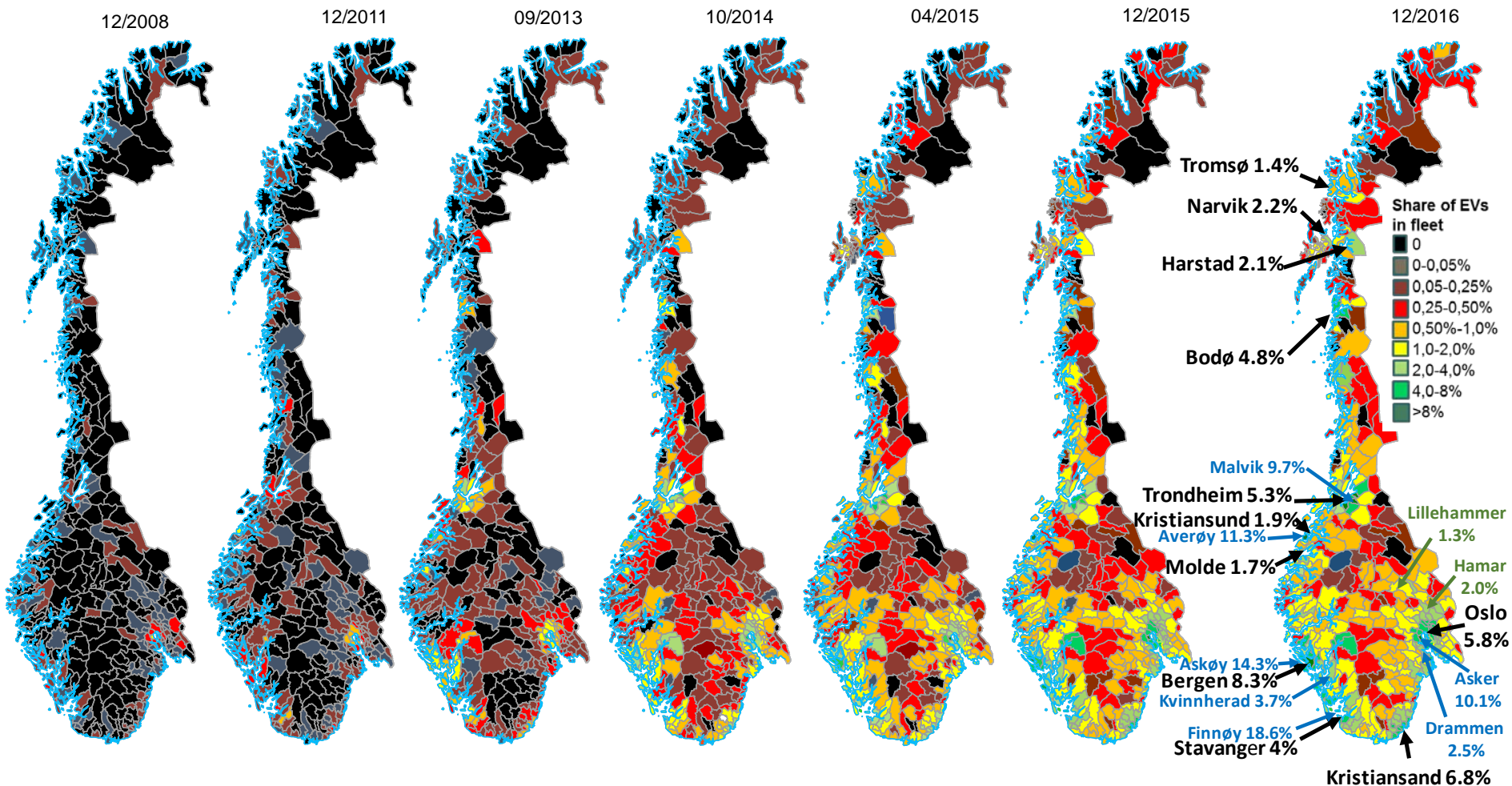


.....and into these.....





# BEV adoption areas: Started in cities/suburbia and where free toll roads an advantage, now everywhere





# Who owns BEVs in Norway?



## **85% are consumers**

- Younger than average buyers
- 79% multi-vehicle households
- Families with children <18y
- Large transportation needs
- Long distances to work
- Live in cities or outskirts
- Have parking with electricity

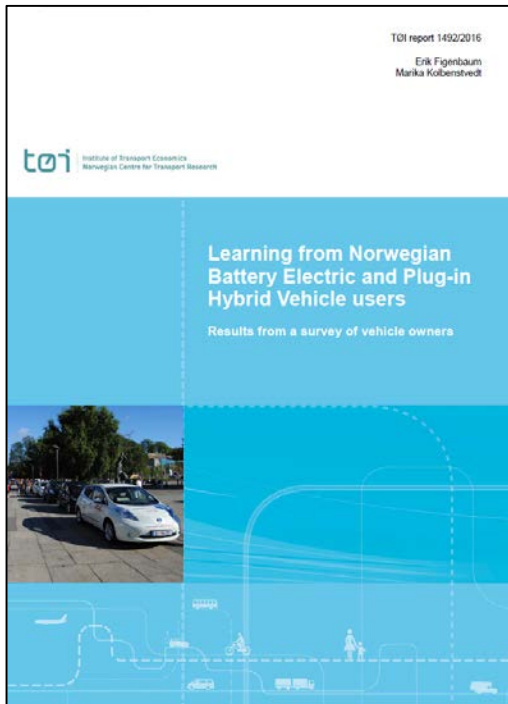
## **Motives**

- Vehicle matching needs
- Reduced user costs
- Incentives
- Environment

## **Convinced:**

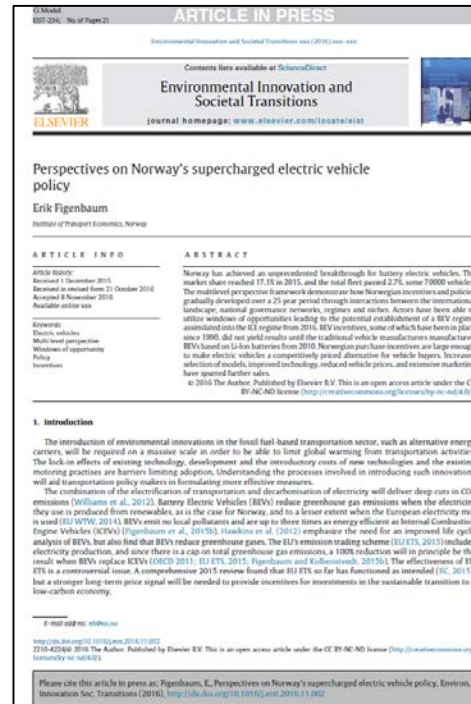
- 88% will buy again, 1% will not

# More information:



[www.toi.no](http://www.toi.no)

[efi@toi.no](mailto:efi@toi.no)



<https://www.toi.no/staff/figenbaum-erik-article31076-27.html>

