WHERE THE GLOBAL FLEET COMMUNITY CONNECTS

JUNE 4-6, 2019

HILTON MIAMI DOWNTOWN
MIAMI, FL
Market Report: Vehicle Acquisition Trends in European Fleet Management

Marc Odinius
Managing Director
Dataforce GmbH
Ferrari 308 GTSi QV
Pontiac Firebird Trans Am
PASSENGER CAR MARKETS AROUND THE GLOBE
Shares of the global Total Market 2018

86 mio. car sales

- 33% (Asia)
- 21% (North America)
- 18% (Europe)
- 1% (Australia)
Shares of the global True Fleet Market 2018

15 mio. new car registrations

- 36% (North America)
- 15% (Europe)
- 11% (Asia)
- 2% (Australia)

[Map showing shares of the global True Fleet Market 2018]
Passenger car markets in comparison

True Fleet share 2018

USA 7.7%
China 10.6%
EU-15* 27.5%
Australia 30.3%

*EU-15: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Italy, Netherlands, Norway, Poland, Spain, Sweden, Switzerland, UK

Volume

China
USA
Japan
Germany
United Kingdom
France
Brazil
Italy
Canada
Russia
Spain
Mexico
Australia
Argentina
Turkey
Belgium
Poland
Netherlands
Sweden
Austria
Switzerland

GLOBAL FLEET CONFERENCE

BROUGHT TO YOU BY
automotive FLEET
WORKTRUCK
FLEETEUROPE
GLOBAL FLEET
Passenger car markets in comparison

Share of Dealer Registrations in 2018

*EU-15: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Italy, Netherlands, Norway, Poland, Spain, Sweden, Switzerland, UK
Share of Dealer registrations by country
Passenger car registrations 2018

Dealers’ Total Market Share
- Germany: 19.9%
- Austria: 16.4%
- Australia: 12.8%
- Czech Republic: 10.7%
- France: 9.8%
- Poland: 9.6%
- Netherlands: 7.9%
- Switzerland: 7.8%
- EU-15: 6.7%
- Italy: 5.8%
- Spain: 5.4%
- Finland: 5.3%
- United Kingdom: 4.9%
- Belgium: 1.8%
- France: 1.6%
- Czech Republic: 1.5%
- Australia: 1.4%
- USA: 0%

Dealer registration volume (in thd.)
- Germany: 684
- Austria: 182
- Australia: 684

Maximum dealership registration ratio from one brand inside the Top 10
- Germany: 29.5%
- Austria: 26.8%
- USA: 43.0%
- EU-15: 16.6%
Markets in comparison

Top 10 True Fleet Brands

USA
- No. of brands share > 0.5%: 26
- Top 10 Market Share: 74.0%

China
- No. of brands share > 0.5%: 40
- Top 10 Market Share: 51.0%

EU-15
- No. of brands share > 0.5%: 28
- Top 10 Market Share: 69.4%

Australia
- No. of brands share > 0.5%: 21
- Top 10 Market Share: 83.0%
Markets in comparison
Top 10 True Fleet Brands

USA
No. of brands share > 0.5%
26

Germany
No. of brands share > 0.5%
23

Italy
No. of brands share > 0.5%
24

France
No. of brands share > 0.5%
19

Top 10 Market Share
USA: 74.0%
Germany: 83.3%
Italy: 69.3%
France: 84.2%
What are the chances for success?

ALTERNATIVE FUEL TYPE DEVELOPMENT
Market shares of fuel types
Passenger car registrations 2018

<table>
<thead>
<tr>
<th>Fuel Type</th>
<th>True Fleets</th>
<th>Private</th>
</tr>
</thead>
<tbody>
<tr>
<td>Petrol</td>
<td>53%</td>
<td>75%</td>
</tr>
<tr>
<td>Diesel</td>
<td>45%</td>
<td>24%</td>
</tr>
<tr>
<td>Electric</td>
<td>5%</td>
<td>0%</td>
</tr>
<tr>
<td>Hybrid</td>
<td>2%</td>
<td>0%</td>
</tr>
<tr>
<td>CNG/ LPG</td>
<td>1%</td>
<td>0%</td>
</tr>
</tbody>
</table>
Market shares of fuel types
Passenger car registrations 2018

True Fleets
- Petrol: 52%
- Diesel: 39%
- Electric: 9%
- Hybrid: 2%
- CNG/ LPG: 1%

Private
- Petrol: 14%
- Diesel: 26%
- Electric: 66%
- Hybrid: 2%
- CNG/ LPG: 1%
Development of Diesel in Detail
Passenger car registrations since January 2016

Total Market  True Fleets  Private

Jan/16  Jul/16  Jan/17  Jul/17  Jan/18  Jul/18  Jan/19
68%  49%  48% -19 %-points
60%  44%  32% -18 %-points
49%  38%  23% -16 %-points
0%  20%  40%  60%  80%  100%

GLOBALFLEET CONFERENCE
BROUGHT TO YOU BY automotive FLEET WORKTRUCK FLEETEUROPE GLOBALFLEET
The Development of Hybrids

Passenger car registrations
The Development of BEVs
Passenger car registrations

[Graph showing the increase in BEV registrations from 2004 to 2018 for True Fleets and Private segments]
Market shares of fuel types
Passenger car registrations 2018

True Fleets
- Petrol: 39%
- Diesel: 52%
- Electric: 5%
- Hybrid: 2%
- CNG/LPG: 2%

Private
- Petrol: 26%
- Diesel: 66%
- Electric: 4%
- Hybrid: 2%
- CNG/LPG: 2%
Market shares of fuel types
Passenger car registrations 2018

True Fleets
- 53% Petrol
- 45% Diesel

Private
- 24% Electric
- 75% CNG/LPG
Market shares of fuel types

Passenger car registrations 2018

- True Fleets:
  - Petrol: 52%
  - Diesel: 39%
  - Electric: 7%
  - Hybrid: 2%
  - CNG/ LPG: 0%

- Private:
  - Petrol: 66%
  - Diesel: 26%
  - Electric: 4%
  - Hybrid: 3%
  - CNG/ LPG: 0%
Fuel type shares
Total Market registrations 2018

<table>
<thead>
<tr>
<th>Country</th>
<th>Petrol</th>
<th>Diesel</th>
<th>Alternative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Norway</td>
<td>59.5%</td>
<td>36.1%</td>
<td>4.4%</td>
</tr>
<tr>
<td>Sweden</td>
<td>56.6%</td>
<td>37.1%</td>
<td>6.3%</td>
</tr>
<tr>
<td>Finland</td>
<td>56.6%</td>
<td>37.1%</td>
<td>6.3%</td>
</tr>
<tr>
<td>Italy</td>
<td>56.6%</td>
<td>37.1%</td>
<td>6.3%</td>
</tr>
<tr>
<td>Netherlands</td>
<td>56.6%</td>
<td>37.1%</td>
<td>6.3%</td>
</tr>
<tr>
<td>Spain</td>
<td>56.6%</td>
<td>37.1%</td>
<td>6.3%</td>
</tr>
<tr>
<td>EU-15</td>
<td>56.6%</td>
<td>37.1%</td>
<td>6.3%</td>
</tr>
<tr>
<td>Denmark</td>
<td>56.6%</td>
<td>37.1%</td>
<td>6.3%</td>
</tr>
<tr>
<td>France</td>
<td>56.6%</td>
<td>37.1%</td>
<td>6.3%</td>
</tr>
<tr>
<td>UK</td>
<td>56.6%</td>
<td>37.1%</td>
<td>6.3%</td>
</tr>
<tr>
<td>China</td>
<td>56.6%</td>
<td>37.1%</td>
<td>6.3%</td>
</tr>
<tr>
<td>Switzerland</td>
<td>56.6%</td>
<td>37.1%</td>
<td>6.3%</td>
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<tr>
<td>Belgium</td>
<td>56.6%</td>
<td>37.1%</td>
<td>6.3%</td>
</tr>
<tr>
<td>Austria</td>
<td>56.6%</td>
<td>37.1%</td>
<td>6.3%</td>
</tr>
<tr>
<td>USA</td>
<td>56.6%</td>
<td>37.1%</td>
<td>6.3%</td>
</tr>
<tr>
<td>Germany</td>
<td>56.6%</td>
<td>37.1%</td>
<td>6.3%</td>
</tr>
<tr>
<td>Poland</td>
<td>56.6%</td>
<td>37.1%</td>
<td>6.3%</td>
</tr>
<tr>
<td>Czech Republic</td>
<td>56.6%</td>
<td>37.1%</td>
<td>6.3%</td>
</tr>
<tr>
<td>Australia</td>
<td>56.6%</td>
<td>37.1%</td>
<td>6.3%</td>
</tr>
</tbody>
</table>
Market shares of fuel types
Passenger car registrations 2018

True Fleets
- Petrol: 94%
- Diesel: 94%

Private
- Petrol: 94%
- Diesel: 94%
Market shares of fuel types
Passenger car registrations 2018

True Fleets
- Petrol: 78%
- Diesel: 13%
- Electric: 13%
- Hybrid: 13%
- CNG/ LPG: 13%

Private
- Petrol: 96%
- Diesel: 4%

Legend:
- Petrol
- Diesel
- Electric
- Hybrid
- CNG/ LPG
True Fleet Volume of Hybrids and BEVs

True Fleet registrations 2018

[Bar chart showing the True Fleet registrations for different countries around the world, with China leading in hybrids and electric vehicles.]
BEV Models Ranking 2018
Share of total True Fleet BEV Volume

EU-15

<table>
<thead>
<tr>
<th>Model</th>
<th>Share</th>
</tr>
</thead>
<tbody>
<tr>
<td>RENAULT ZOE</td>
<td>17.4%</td>
</tr>
<tr>
<td>NISSAN LEAF</td>
<td></td>
</tr>
<tr>
<td>BMW I3</td>
<td></td>
</tr>
<tr>
<td>TESLA MODEL S</td>
<td></td>
</tr>
<tr>
<td>VW GOLF</td>
<td></td>
</tr>
<tr>
<td>TESLA MODEL X</td>
<td></td>
</tr>
<tr>
<td>JAGUAR I-PACE</td>
<td></td>
</tr>
<tr>
<td>SMART FORTWO</td>
<td></td>
</tr>
<tr>
<td>HYUNDAI IONIQ</td>
<td></td>
</tr>
<tr>
<td>SMART FORFOUR</td>
<td></td>
</tr>
</tbody>
</table>

USA

<table>
<thead>
<tr>
<th>Model</th>
<th>Share</th>
</tr>
</thead>
<tbody>
<tr>
<td>TESLA MODEL 3</td>
<td>28.1%</td>
</tr>
<tr>
<td>CHEVROLET VOLT</td>
<td></td>
</tr>
<tr>
<td>CHEVROLET BOLT</td>
<td></td>
</tr>
<tr>
<td>TESLA MODEL S</td>
<td></td>
</tr>
<tr>
<td>TESLA MODEL X</td>
<td></td>
</tr>
<tr>
<td>NISSAN LEAF</td>
<td></td>
</tr>
<tr>
<td>BMW I3</td>
<td></td>
</tr>
<tr>
<td>KIA SOUL</td>
<td></td>
</tr>
<tr>
<td>HONDA CLARITY</td>
<td></td>
</tr>
<tr>
<td>TOYOTA MIRAI</td>
<td></td>
</tr>
</tbody>
</table>
BEV Models Ranking 2018
True Fleet Volume

EU-15
- RENAISS ZOE: 13,718
- NISSAN LEAF
- BMW i3
- TESLA MODEL S
- VW GOLF
- TESLA MODEL X
- JAGUAR I-PACE
- SMART FORTWO
- HYUNDAI IONIQ
- SMART FORFOUR

USA
- TESLA MODEL 3: 4,303
- CHEVROLET VOLT
- CHEVROLET BOLT
- TESLA MODEL S
- NISSAN LEAF
- BMW i3
- KIA SOUL
- HONDA CLARITY
- TOYOTA MIRAI
Detailed look at Tesla within BEV segment
True Fleet passenger car registrations, share of BEV volume

EU-15

USA

0%
75%


Model S  Model X  Model 3
Total PC market registrations for EU-15
Passenger car registrations – Tesla Models

![Bar chart showing Tesla Model 3, Model S, and Model X registrations from 2014 to 2019 for EU-15.]
What do we need for success?

RULES & REGULATION - POLITICS
What do we need for success?

OFFERING
What do we need for success?

MINDSET
What do we need for success?

RULES & REGULATION - POLITICS
Bans of Petrol and Diesel Sales

Amount of worldwide climate laws

Examples of countries introducing Petrol and Diesel sales bans
EV Regulations and Sales Subsidies

Excerpt of countries

- Exemptions for zero-emission vehicles affecting acquisition, tax benefits ownership, company cars
- Exemptions from 25% VAT (purchase and leasing)
- no charges on toll roads
- Clean vehicle rebate
- Federal Tax Credit

Governmental and municipal purchase subsidies (major subsidy cuts of 50% from January 2019)
Number of charging stations

- USA: 67,000
- Europe: 125,000
- China: 300,000
- Australia: 1,000
What do we need for success?

OFFERING
Powertrain study 2018: Ratings of BEVs
Answers of German Fleet Managers

- Car convenience: 2.5
- Driver's acceptance: 2.4
- Operational costs: 2.4
- Charging duration: 2.3
- Charging management: 2.1
- Acquisition costs: 2.1
- Charging infrastructure: 2.0
- Model diversity: 1.8
- Range: 1.6

(Graph showing ratings from 1 to 3 for various factors)
A BLUEPRINT FOR ALTERNATIVE FUEL TYPES?
The development of SUV’s market share
USA passenger car registrations, Total Market

![Graph showing the development of SUV's market share over the years from 2011 to 2018. The SUV market share gradually increases from 2011 to 2018, while other market segments remain relatively stable.](image-url)
The development of SUV’s market share
USA passenger car registrations, True Fleets

[Graph showing the market share of SUVs, Pickups, PC Compact, PC Medium, PC Small, PC Medium-Large, MPV over the years 2011 to 2018.]
The development of SUV’s market share
EU-7 passenger car registrations, True Fleets
The development of SUV’s market share
EU-7 passenger car registrations, True Fleets


22 26 85 136

SUV  PC Small  PC Compact  PC Medium

GLOBALFLEET CONFERENCE
Number of models with alternative fuel types

EU-7 True Fleet registrations, registration volume > 100 per month

75 new BEV models until 2024
What do we need for success?

MINDSET
What range is sufficient for you to go electric

1) Up to 200km
2) 201-300km
3) 301-400km
4) 401-500km
5) 501 +km
6) Not at all
Minimum range of BEVs
Answers of German Fleet Managers within powertrain study 2018

1. 15% of respondents satisfied with a range up to 250 km
2. 50% would be satisfied with range of up to 400-500 km
3. 80% pleased with range up to 600 km
Which fuel type share in 10 years?
Answers of German Fleet Managers within powertrain study 2018

- Petrol: 13%
- Diesel: 23%
- BEV: 31%
- Hybrid: 13%
- Hydrogen: 11%
- Fuelcell: 5%
- CNG / LPG: 4%
CO₂ SCENARIOS
Regulation of CO₂ emissions

Target 2021

95g CO₂

Reality 2018 (Case Study Germany: average CO₂ by market segments)

Characteristics of the market:
- About 60% diesel share in True Fleets
- Decent share of Medium cars, Executive cars, SUVs
2021 CO₂ targets and current values for Germany

- EU Average 95 g/km NEDC
- Penalty: 95 Euro per gram and registered car
- OEM target depending on average vehicle weight

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>Current CO₂</th>
<th>CO₂-target 2021</th>
</tr>
</thead>
<tbody>
<tr>
<td>FCA</td>
<td>91.7</td>
<td>91.1</td>
</tr>
<tr>
<td>Renault-Nissan</td>
<td>92.6</td>
<td>92.1</td>
</tr>
<tr>
<td>PSA</td>
<td>94.3</td>
<td>93</td>
</tr>
<tr>
<td>Toyota</td>
<td>100.3</td>
<td>101</td>
</tr>
<tr>
<td>VW</td>
<td>100.7</td>
<td>96.3</td>
</tr>
<tr>
<td>Daimler</td>
<td>103.5</td>
<td></td>
</tr>
<tr>
<td>Volvo</td>
<td>135</td>
<td>132</td>
</tr>
<tr>
<td>JLR</td>
<td>164</td>
<td>140</td>
</tr>
<tr>
<td>Hyundai-Kia</td>
<td>118</td>
<td>121</td>
</tr>
<tr>
<td>PSA</td>
<td>117</td>
<td></td>
</tr>
<tr>
<td>BMW</td>
<td>124</td>
<td>122</td>
</tr>
<tr>
<td>BMW</td>
<td>124</td>
<td>122</td>
</tr>
<tr>
<td>Toyota</td>
<td>101</td>
<td>122</td>
</tr>
<tr>
<td>PSA</td>
<td>117</td>
<td>124</td>
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<tr>
<td>BMW</td>
<td>124</td>
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</tr>
<tr>
<td>Toyota</td>
<td>101</td>
<td>122</td>
</tr>
</tbody>
</table>

Penalty: 95 Euro per gram and registered car

OEM target depending on average vehicle weight
Diesel down, SUVs up with 2018’s fuel type shares

Case Study Germany

<table>
<thead>
<tr>
<th>Year</th>
<th>PHEV</th>
<th>Hybrid</th>
<th>BEV</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2018</td>
<td>1.2%</td>
<td>1.4%</td>
<td>1.3%</td>
<td>3.9%</td>
</tr>
<tr>
<td>2019</td>
<td>1.2%</td>
<td>1.4%</td>
<td>1.3%</td>
<td>3.9%</td>
</tr>
<tr>
<td>2020</td>
<td>1.2%</td>
<td>1.4%</td>
<td>1.3%</td>
<td>3.9%</td>
</tr>
<tr>
<td>2021</td>
<td>1.2%</td>
<td>1.4%</td>
<td>1.3%</td>
<td>3.9%</td>
</tr>
</tbody>
</table>
14% electrification

Case Study Germany

- BEV: 3.5%
- Hybrid: 6.0%
- PHEV: 4.0%

∑ 13.5%
18% electrification
Case Study Germany
27% electrification
Case Study Germany

- BEV: 5.6%
- Hybrid: 13.6%
- PHEV: 7.8%

∑ 26.9%
45% electrification

Case Study Germany

- BEV: 8.6%
- Hybrid: 24.9%
- PHEV: 11.5%

∑ 45.0%
50% electrification
Case Study Germany

Just 2 years left

Target
- BEV: 13.6%
- Hybrid: 26.7%
- PHEV: 11.5%

Now
- BEV: 1.3%
- Hybrid: 1.4%
- PHEV: 1.2%
WHAT IF ALL CARS WERE BEV?
What if all cars were BEVs

- 115 mio tons $^{CO_2}$
- 281 k tons $^{NOX}$
+ 90,000,000,000 $^{kW/h}$

$= 90$ TerraWatts
What does 90 TWh get you?

You could power 1,363,636,363 of the latest Samsung TV for a year!
What does 90 TWh get you?

You can power 750,000,000 of the latest LG washing machines for a year!
What does 90 TWh get you?

Or we could send Marty McFly back to the future 74,380 times
Additional powersources for 90 TWh
Annual electricity consumption (TWh)

- USA 2017: 4090 TWh
- Germany 2017: 597 TWh
- 2015 total renewable energy production: 196 TWh
- 2010-2015 renewable energy growth: 91 TWh
- 1 Mil BEVs: 2 TWh
- 45 Mil. BEVs: 90 TWh

LAST SLIDES I PROMISE
Confidence of consumers and the industry

EU confidence indicators

Jan-01 Jan-03 Jan-05 Jan-07 Jan-09 Jan-11 Jan-13 Jan-15 Jan-17 Jan-19

-50 -40 -30 -20 -10 0 10 20

Consumer  Industry
True Fleet keeps high level of volume
EU-7 passenger car registrations

- 2019
- 2018
- 2017
- 2016
- 2015
- 2014
- 2013
- 2012
- 2011
- 2010
- 2009
- 2008

0 3,500
Further potential in fleet
EU-7 passenger car registrations (2012 = 100)
Which fuel type share in 10 years?
Answers of German Fleet Managers within powertrain study 2018

- Petrol: 13%
- Diesel: 23%
- BEV: 31%
- Hybrid: 13%
- Hydrogen: 11%
- Fuelcell: 5%
- CNG / LPG: 4%
Thank You

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Looking forward to touch base

WHERE THE GLOBAL FLEET COMMUNITY CONNECTS

JUNE 4-6, 2019
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MIAMI, FL
Title