

Attachments of:

Dutch EV policy in an international perspective

March 2021

PROMOTING
pro **EME**
ELECTRIC MOBILITY EUROPE



Attachments

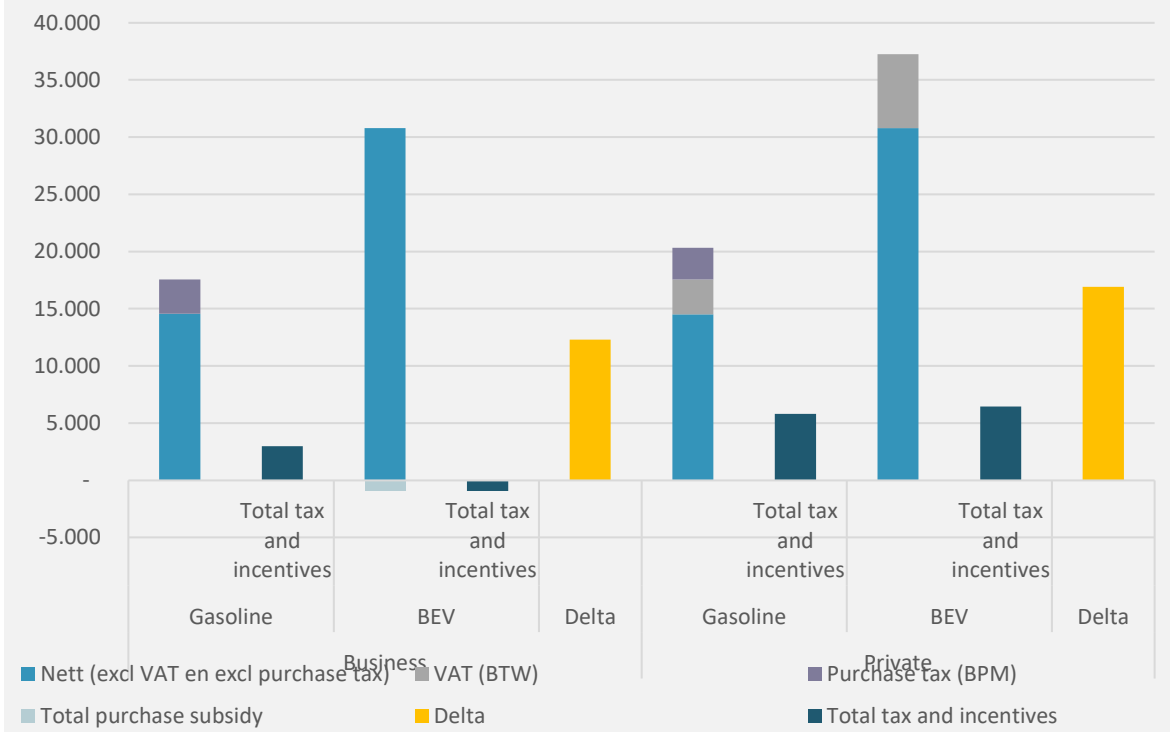
- TCO calculations per country per segment
 - The Netherlands
 - Norway
 - France
 - Germany
- Levelling effects of purchase grants
- Occasion market
- Benefit in Kind (BiK)
- Recharging infrastructure
- Tax burden comparison

Attachment: Purchase and TCO Calculations

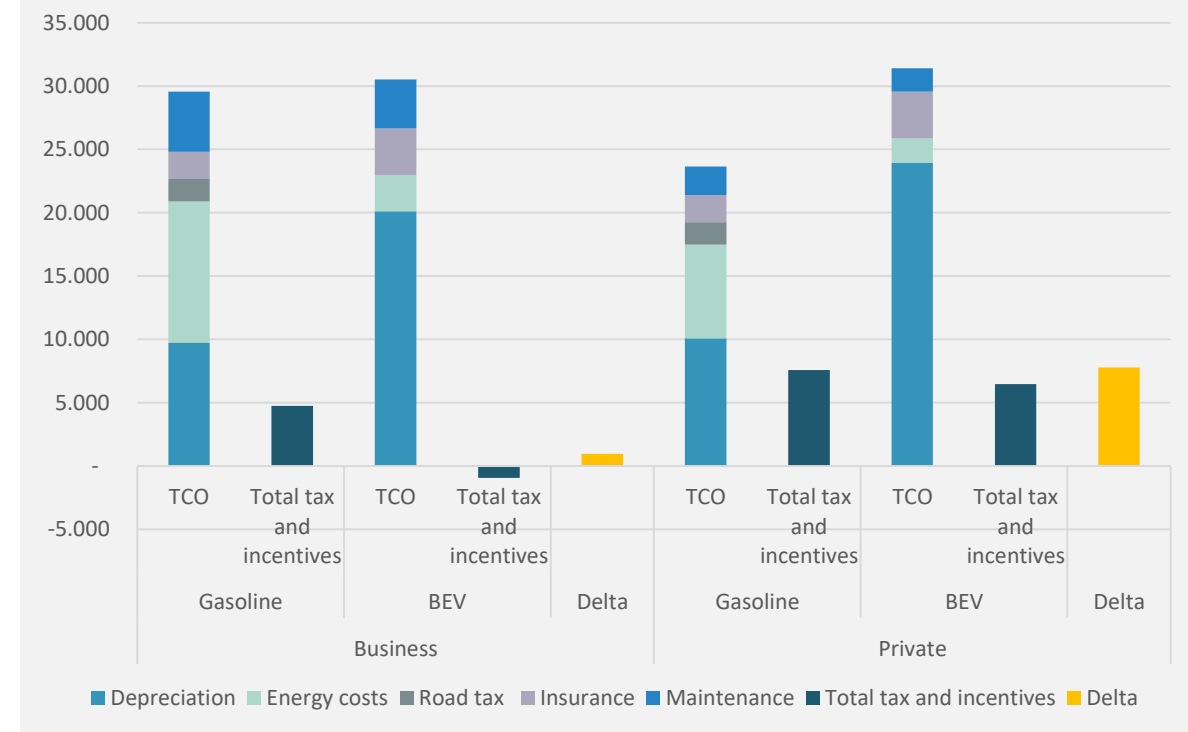
The Netherlands – B Segment



Purchase costs



TCO costs



Observations

- BEVs in the B segment are roughly €12,000 more expensive than the gasoline cars in the business market, and around €17,000 more expensive in the private market.
- The purchase price of the BEVs in the B segment are high because the BEVs sold in this segment are more luxurious than the gasoline cars in this segment.

Observations

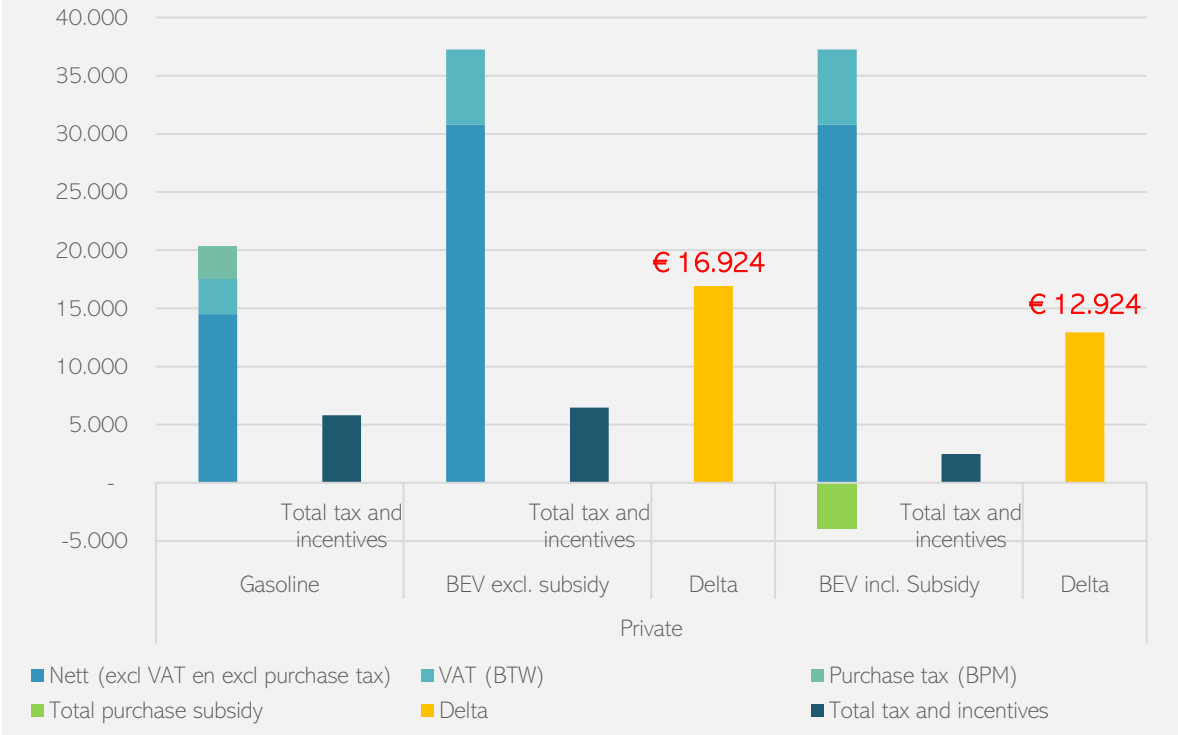
- Despite the higher purchase price and higher depreciation, the TCO for the business market is around €1,000 higher for BEVs than gasoline cars. This is caused by the low energy costs and high depreciation of BEVs compared to gasoline cars.
- For the private market, the higher depreciation is not compensated, the TCO of BEVs is around €7,500 higher than that of gasoline cars. The difference with the business market is the utilization rate, the lower utilization rate for private BEVs makes the saving in energy cost lower.

The Netherlands incl./excl. €4,000 subsidy

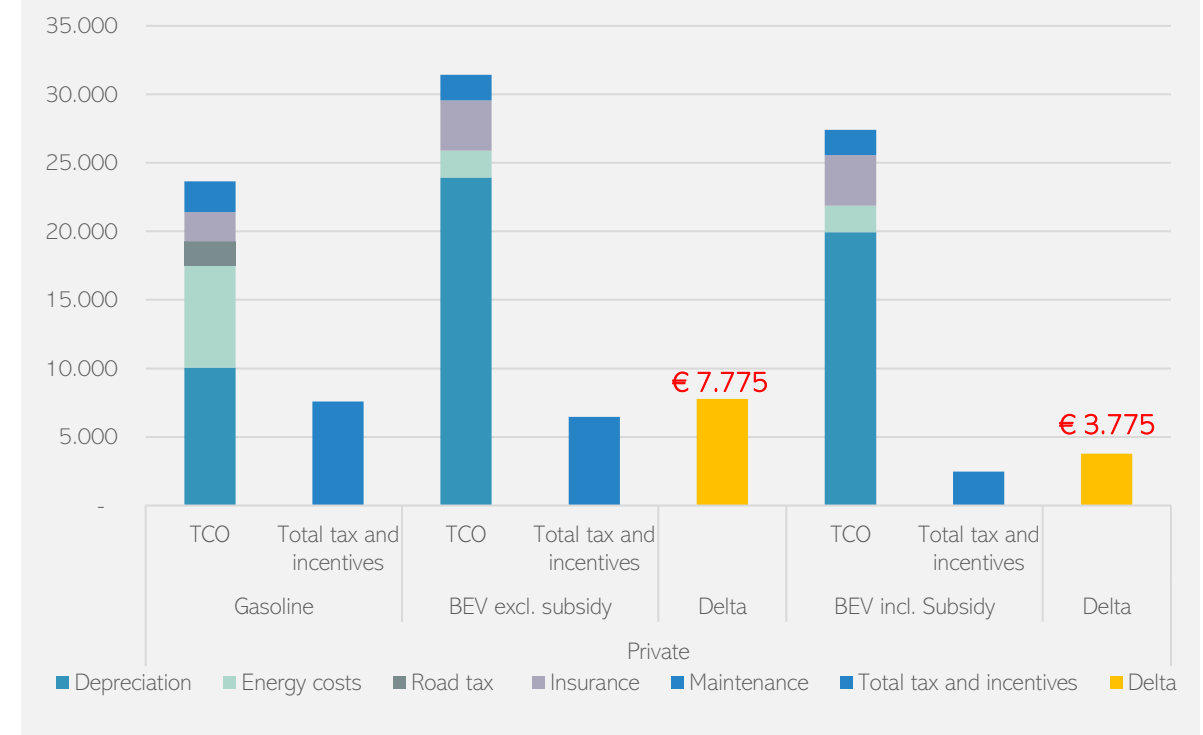
Average Purchase price and TCO from B segment



Purchase costs private



TCO costs private



Observations

- The business market is not influenced by the purchase subsidy since only privately bought BEVs are eligible for it.
- The purchase price will remain negative for BEVs compared to gasoline cars. The subsidy reduces the difference to €12,924.

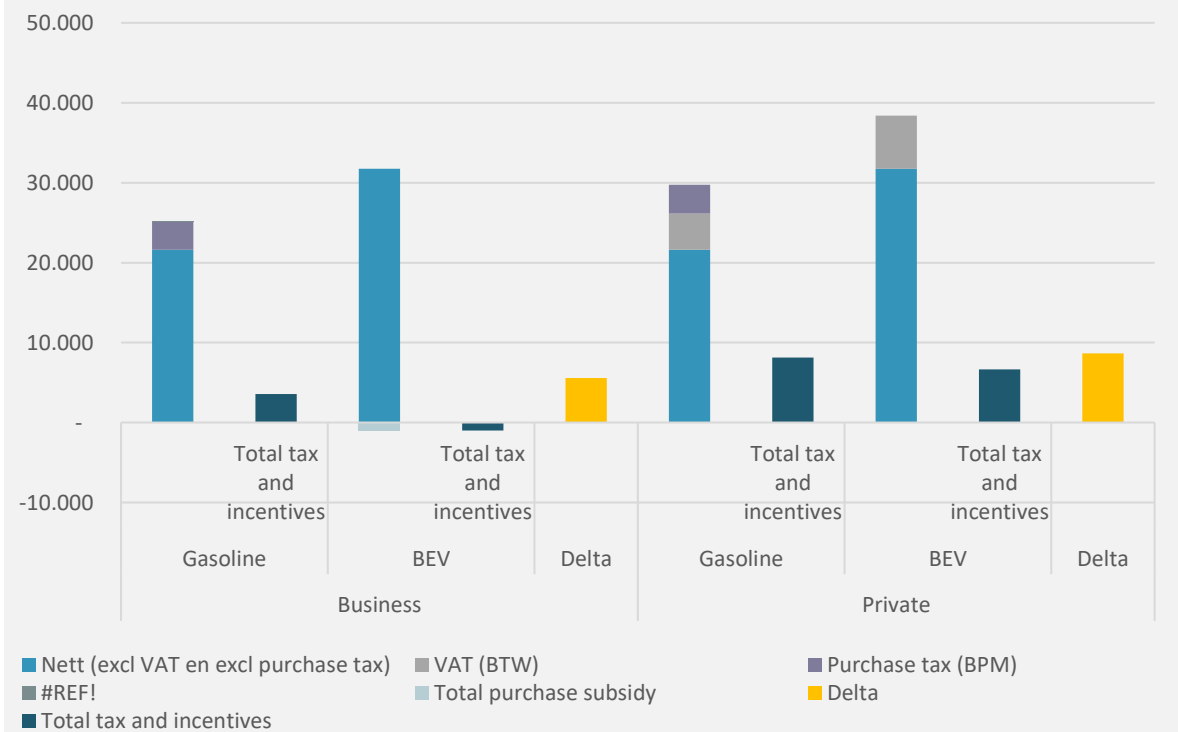
Observations

- The TCO of BEVs is strongly influenced by the subsidy. The subsidy will decrease the negative delta, but this remains negative at €3,775.
- The biggest part in the higher TCO of BEVs is the depreciation. This is caused by the BEVs in the B segment, the price difference between BEVs and gasoline cars is higher than in the C- and D segment.

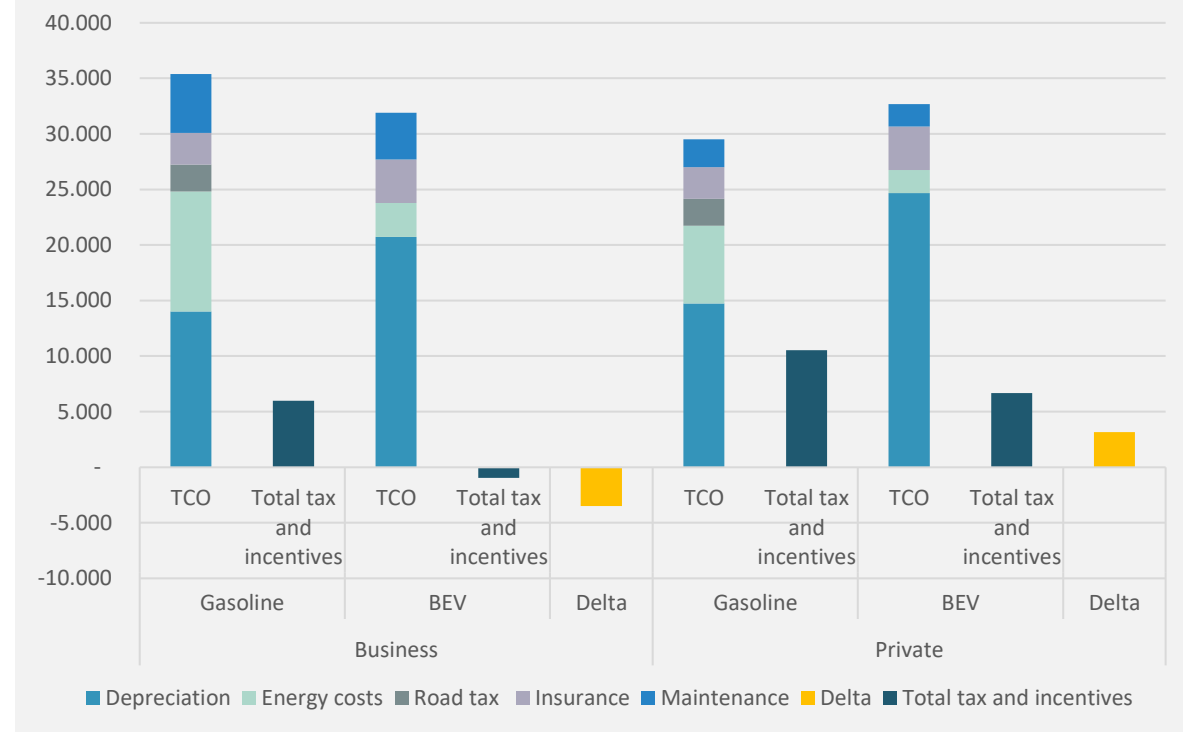
The Netherlands – C Segment



Purchase costs



TCO costs



Observations

- For the business market, the purchase price of BEVs is lowered through the exemption of the purchase tax (BPM) and a purchase incentive (MIA). The results is that BEVs are around €5.500 more expensive in purchase than gasoline cars.
- In the private market, BEVs are €8.500 more expensive than gasoline cars. This difference is higher because the purchase grant of the Dutch government, of €4.000, is excluded.

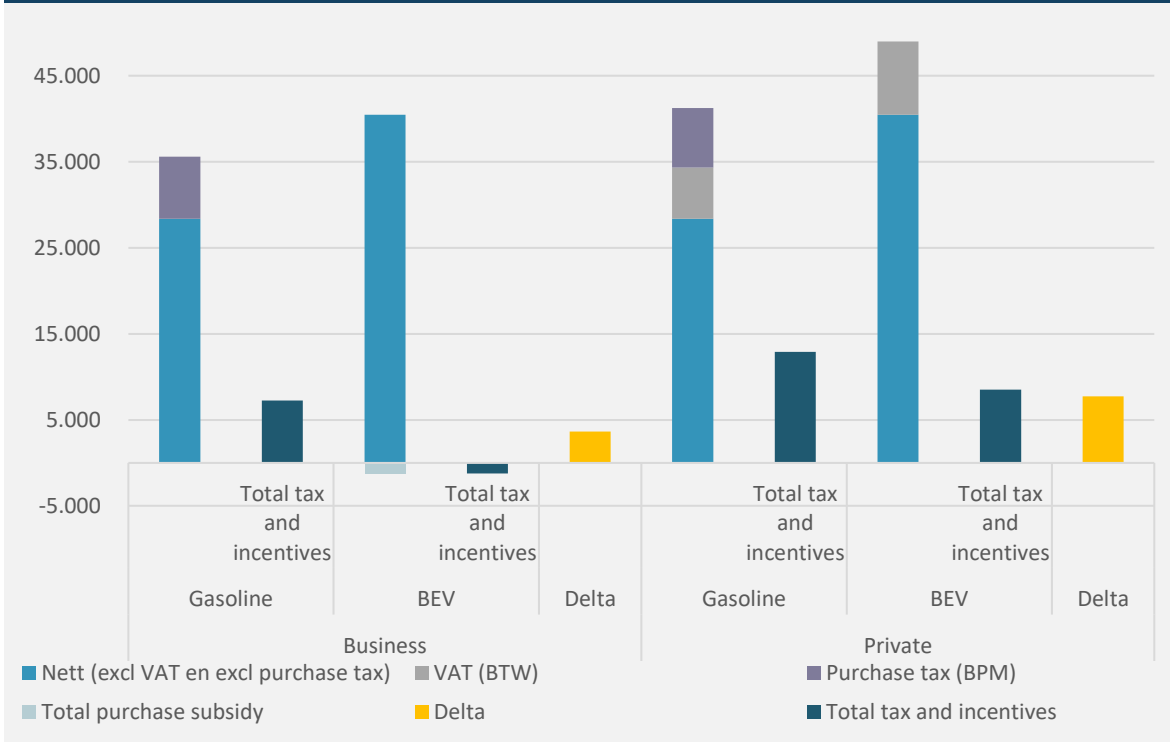
Observations

- In the business market, the TCO is roughly €3.500 lower for BEVs compared to gasoline cars. The depreciation of BEVs is higher, but this is compensated with the lower energy costs of BEVs.
- The same goes for the private market. However, the deficit in depreciation is not compensated fully through the savings in energy costs. The TCO of BEVs is ultimately €3.000 higher than that of gasoline cars.

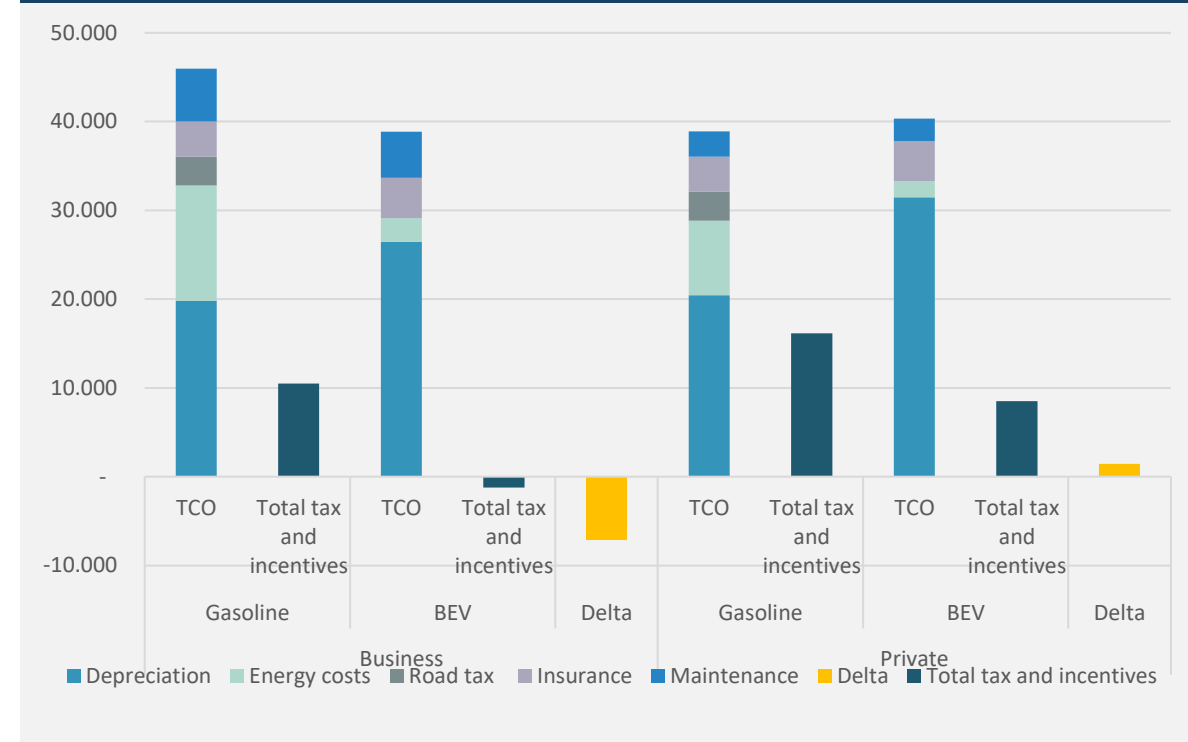
The Netherlands – D Segment



Purchase costs



TCO costs

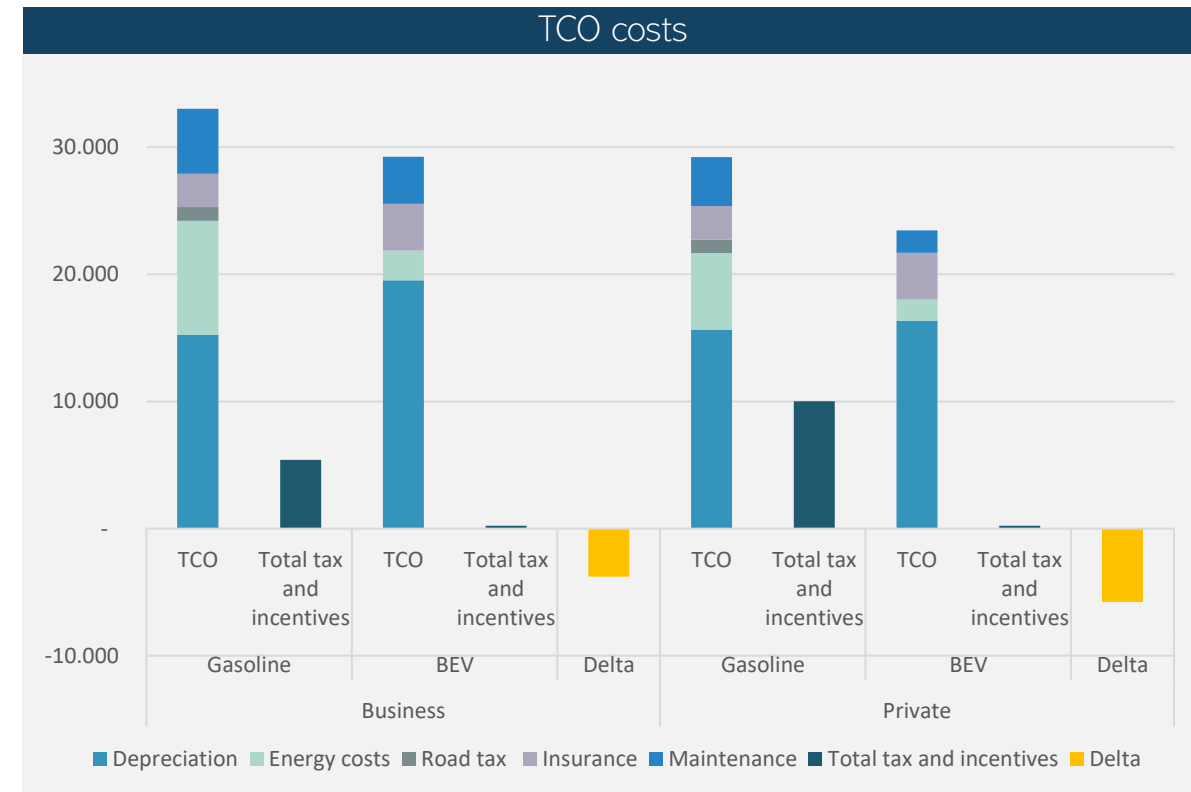
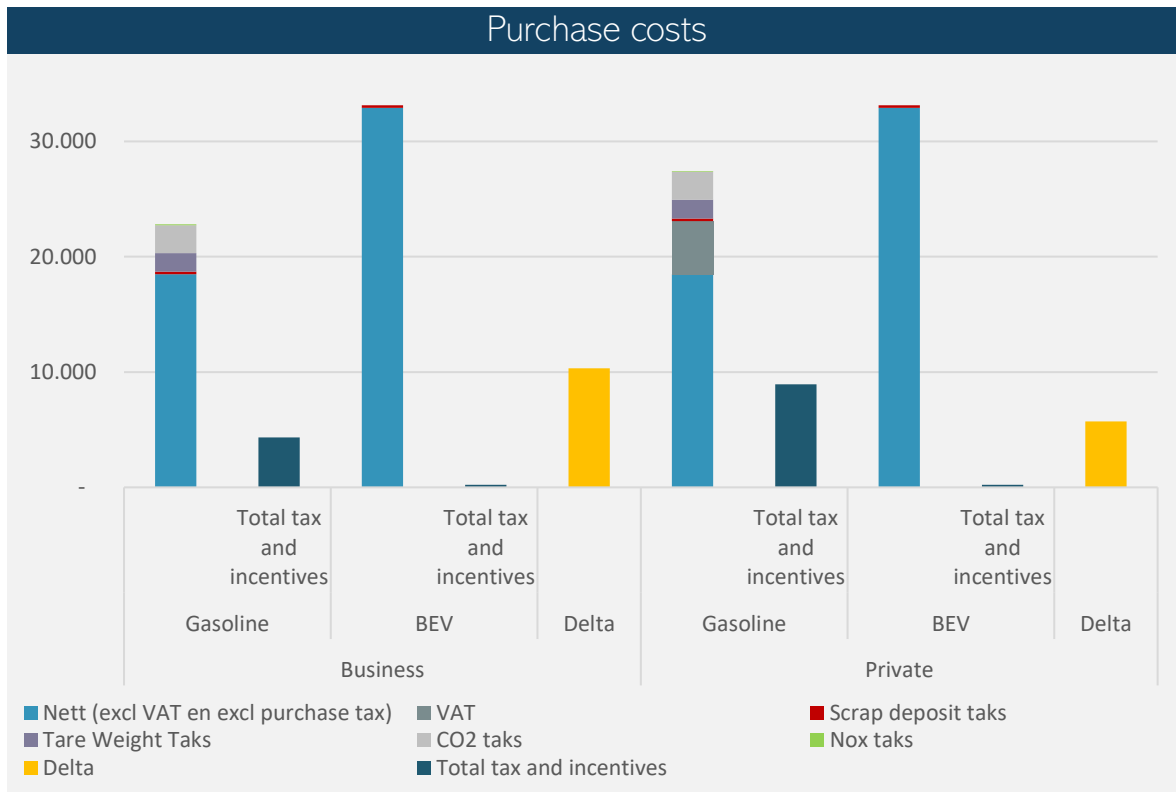


Observations

- The purchase of a BEV in the business market is around €3.500 more expensive than gasoline cars in the D segment. The exemption from the purchase tax (BPM) is a big contributor to bringing down this difference between BEVs and gasoline cars.
- In the private market, this difference is bigger, BEVs are +/- €7.500 more expensive than gasoline cars. The VAT enlarged the difference compared to the business market. A difference to the B- and C segment BEVs, is that the BEVs in the D segment are not eligible for the €4.000 purchase grant

Observations

- The TCO in the business market is €7.000 lower for BEVs than for gasoline cars in the D segment. This difference is largely due to the saving on energy costs.
- In the private market, the TCO is around €1.500 higher for BEVs than for gasoline cars. Because BEVs in this segment are not eligible for the purchase grant, the depreciation is significantly larger.



Observations

- In the business market the BEVs are roughly €10.000 more expensive than gasoline cars. This is despite the tax exemptions for BEVs.
- The deficit is smaller in the private market because BEVs are exempted from VAT, also in private sales. BEVs are +/- €5.500 more expensive to buy than gasoline cars.

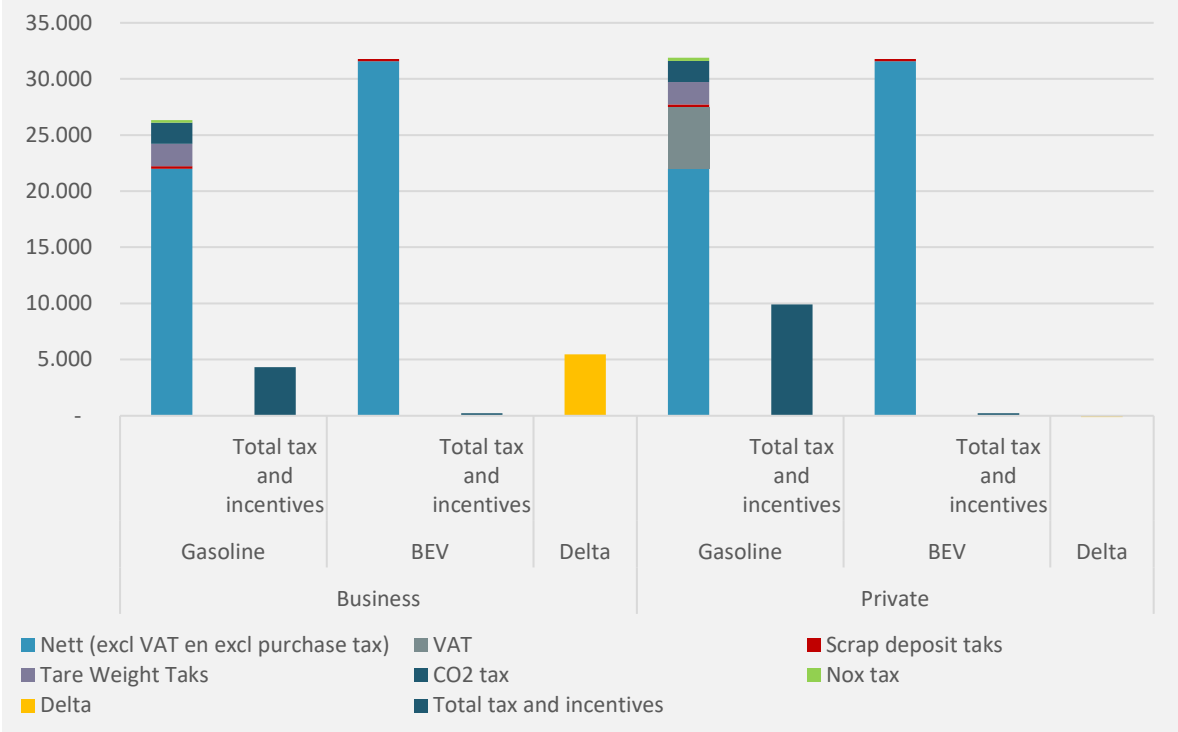
Observations

- The TCO in the business market is around €3.500 cheaper than gasoline cars. The depreciation percentage is relatively low for BEVs, compared to other countries. This keeps the depreciation also relatively low.
- The same goes for the private market. The difference in depreciation with the gasoline counterparts is lower for BEVs in the private market. This is due to the VAT exemption. The TCO is ultimately €5.500 cheaper than gasoline cars.

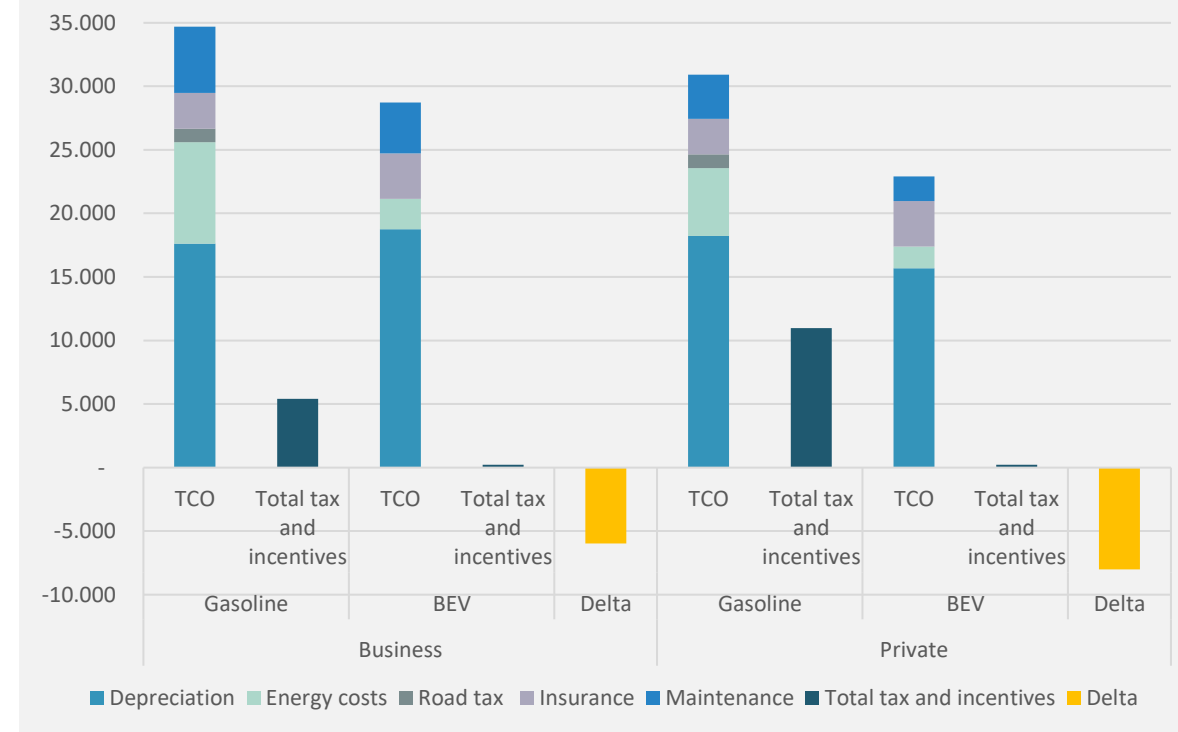
Norway – C Segment



Purchase costs



TCO costs



Observations

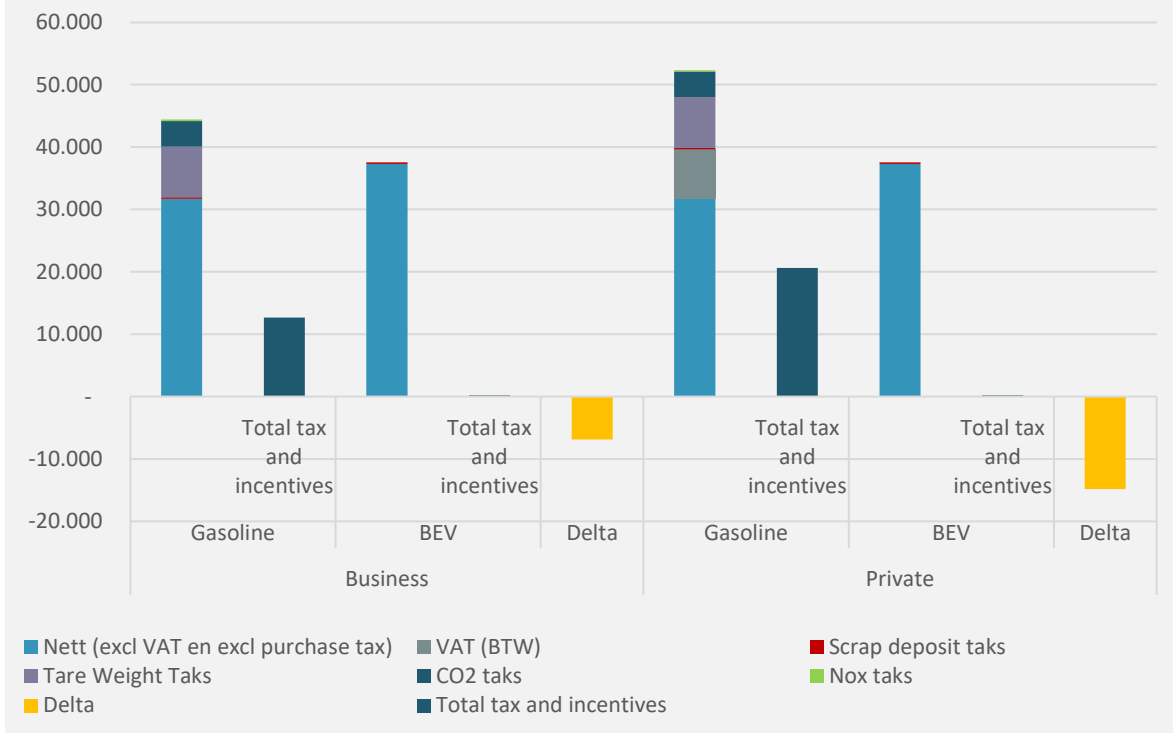
- BEVs are, in the business market, roughly €5.500 more expensive to purchase than gasoline cars.
- The purchase prices of BEVs and gasoline cars are comparable in the private market. The nett prices of BEVs are higher, but this is compensated by the higher taxation on gasoline cars.

Observations

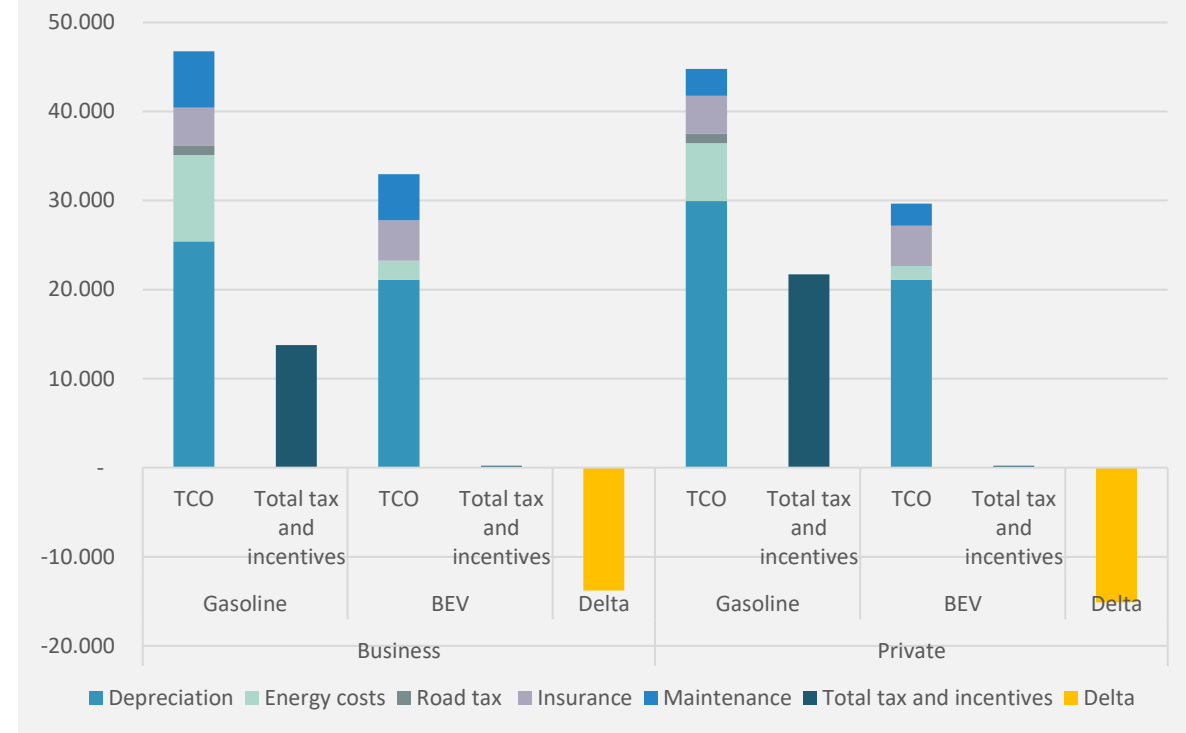
- The TCO of BEVs in the business market, is around €6.000 lower than gasoline cars in the C segment. The lower cost of energy is the biggest cause for this.
- In the private market, the TCO of BEVs is almost €8.000 lower than the TCO of gasoline cars. Noteworthy is the depreciation. In other countries, the depreciation of BEVs is higher. In the C segment in Norway, the depreciation of BEVs is comparable to that of gasoline cars.



Purchase costs



TCO costs

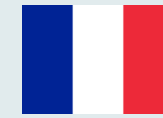


Observations

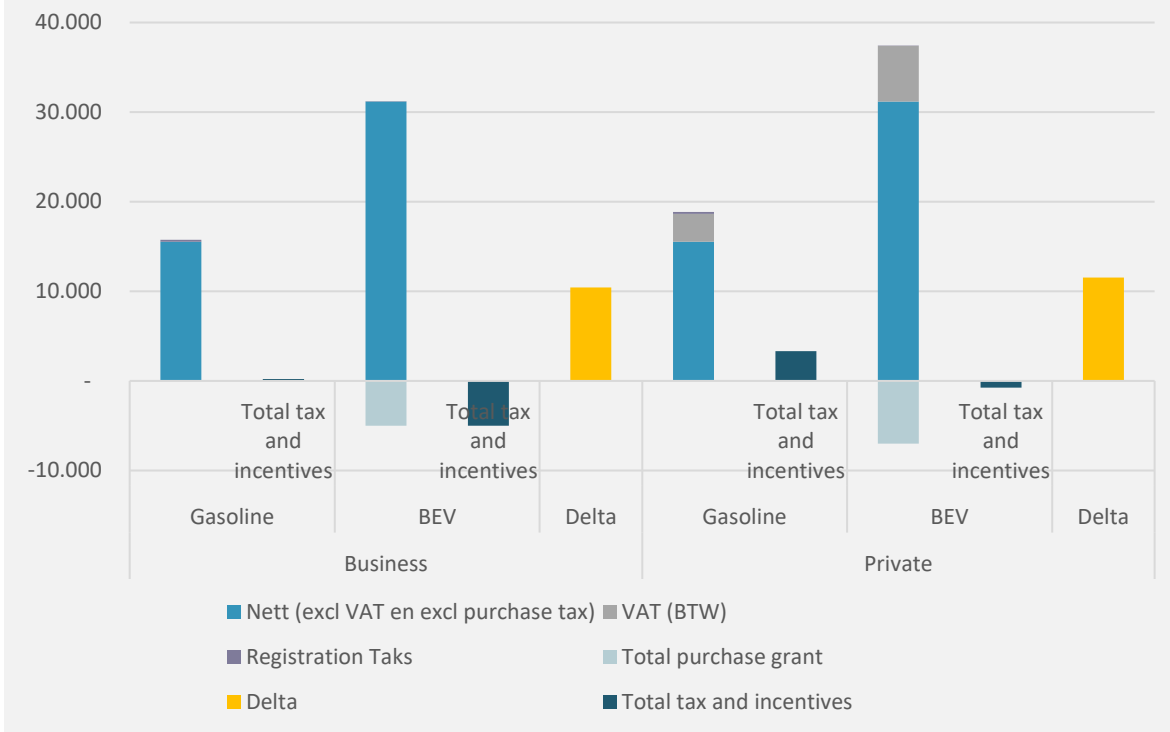
- In the business market, the purchase price of BEVs is +/- €7.000 lower than that of comparable gasoline cars. This is due to the tax exemptions for BEVs.
- The same holds for private market. The taxation on gasoline, and the exemption of taxes for BEVs bought cars. The only difference is the added VAT for gasoline cars. BEVs are, therefore, around €15.000 cheaper.

Observations

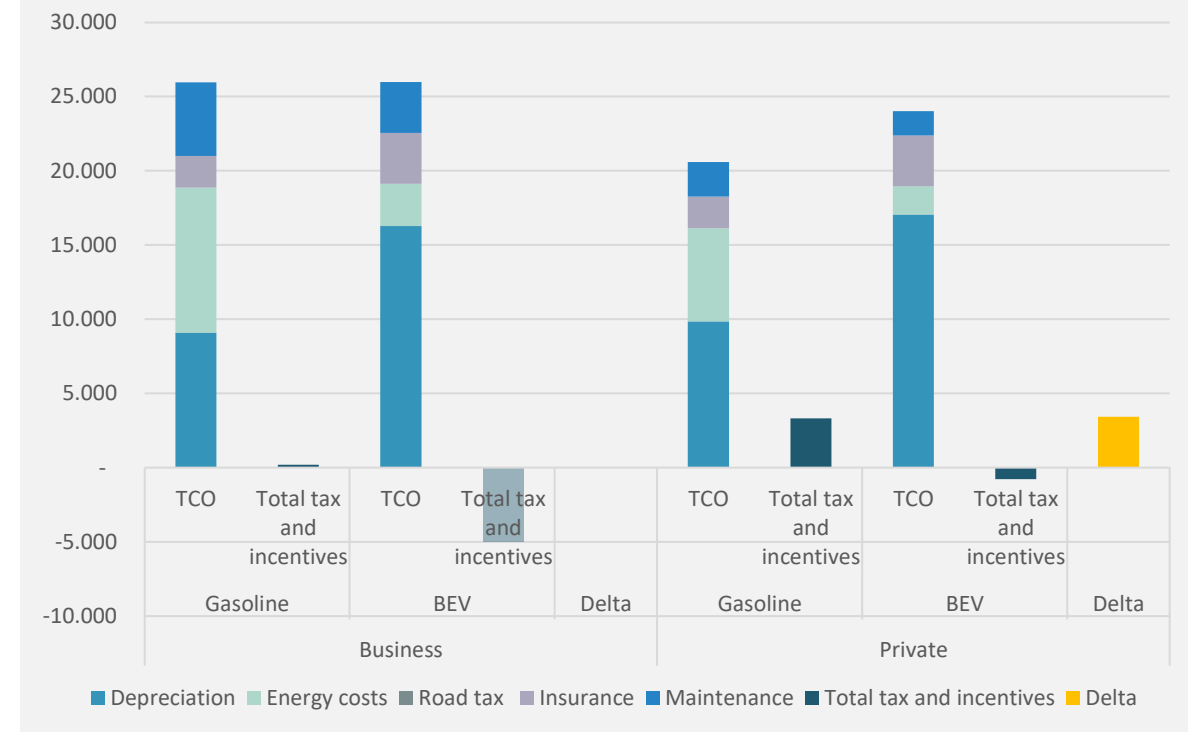
- The TCO of the business market is €17.000 lower than that of gasoline cars in the D segment. The lower price, after taxation, causing the depreciation of the BEVs to be lower. This added with the savings in energy costs accounts for the biggest share of the difference.
- The same reasoning holds for the private market. The difference TCO of BEVs is almost €17.500 lower than that of gasoline cars. This difference is bigger since gasoline cars in the private market are not exempted from VAT and BEVs are.
- It shows that the method used by Norway, of higher taxes for gasoline cars, causes bigger benefits for more expensive cars.



Purchase costs



TCO costs

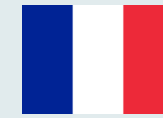


Observations

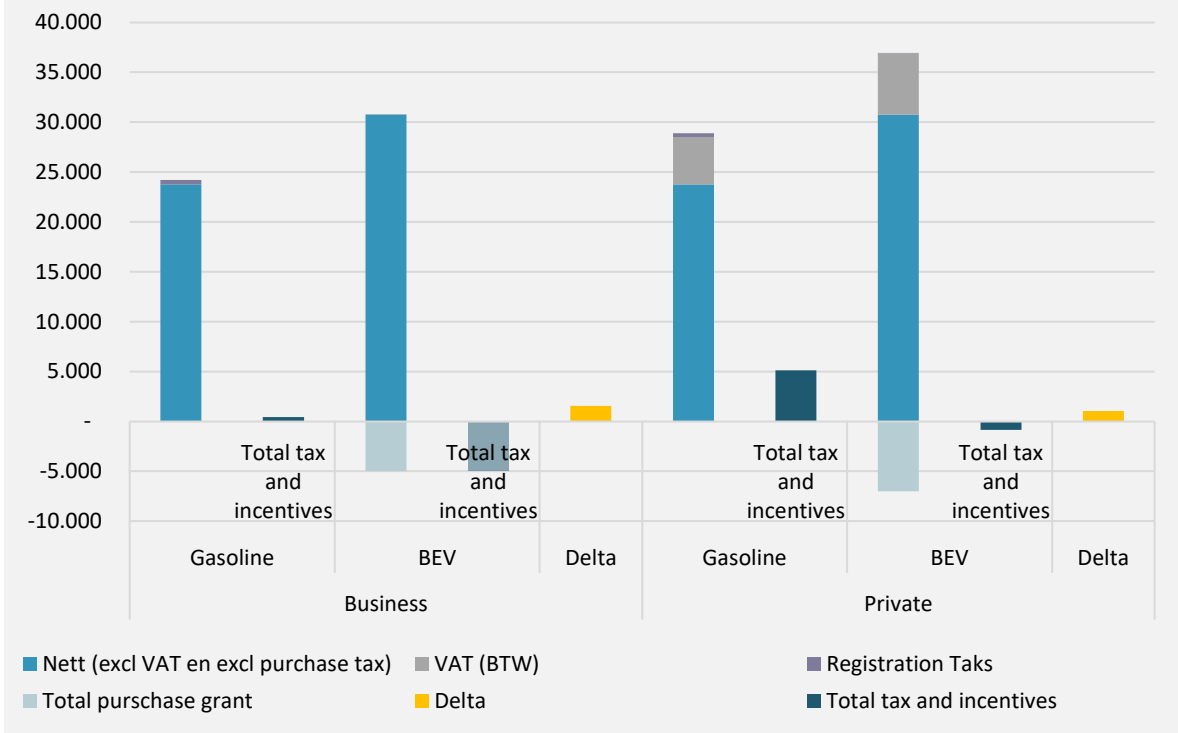
- The purchase prices of BEVs are in the B segment €10.500 and €11.500 more expensive for BEVs in the business- and private market respectively.
- New gasoline cars are seen as relatively clean in the French tax system, therefore, taxation on new gasoline cars is low compared to other countries.
- The low taxation on new gasoline cars and the high nett price of BEVs in the B segment, twice the nett price of gasoline cars, are causing the difference in purchase price.

Observations

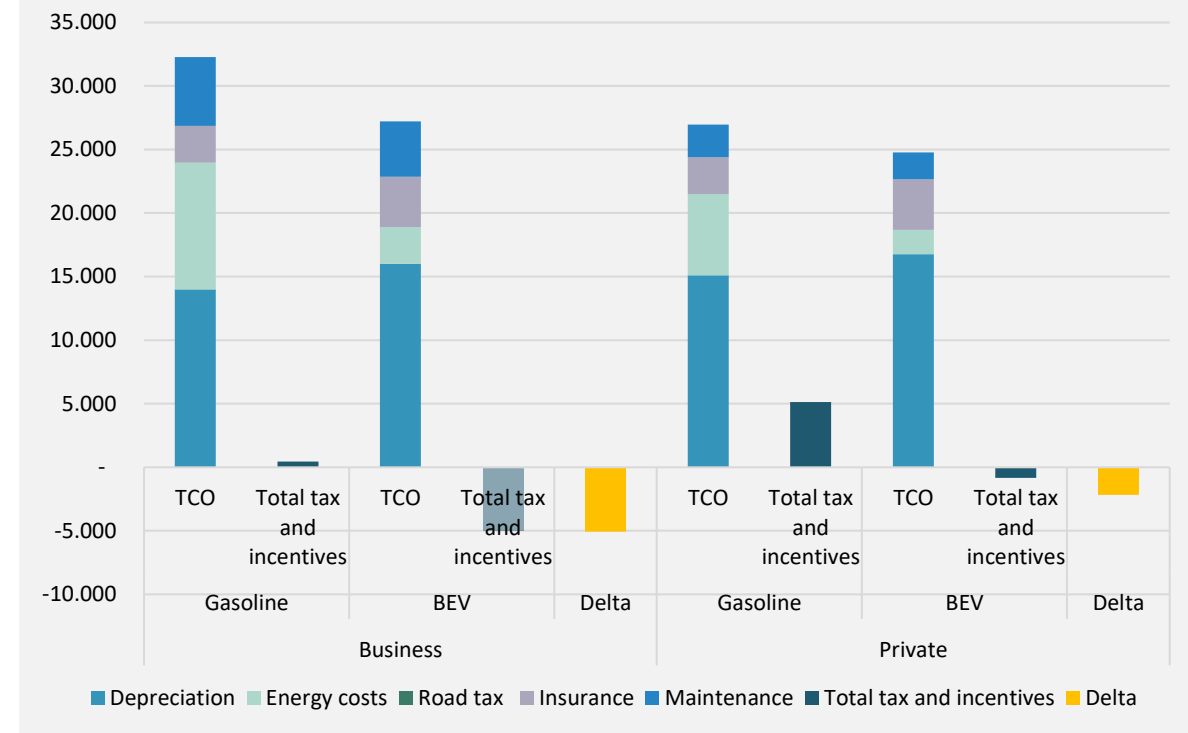
- The TCO of a BEV in the business market is equal to that of a comparable gasoline variant of the B segment. In the private market, the TCO is roughly €3.500 higher for BEVs.
- The business- and private market are very comparable. The reason that the business market TCO for BEVs is more beneficial, is the utilization rate. Cars in the business market travel more kilometres, and thus utilize the lower energy cost more.



Purchase costs



TCO costs

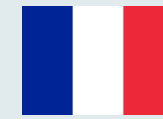


Observations

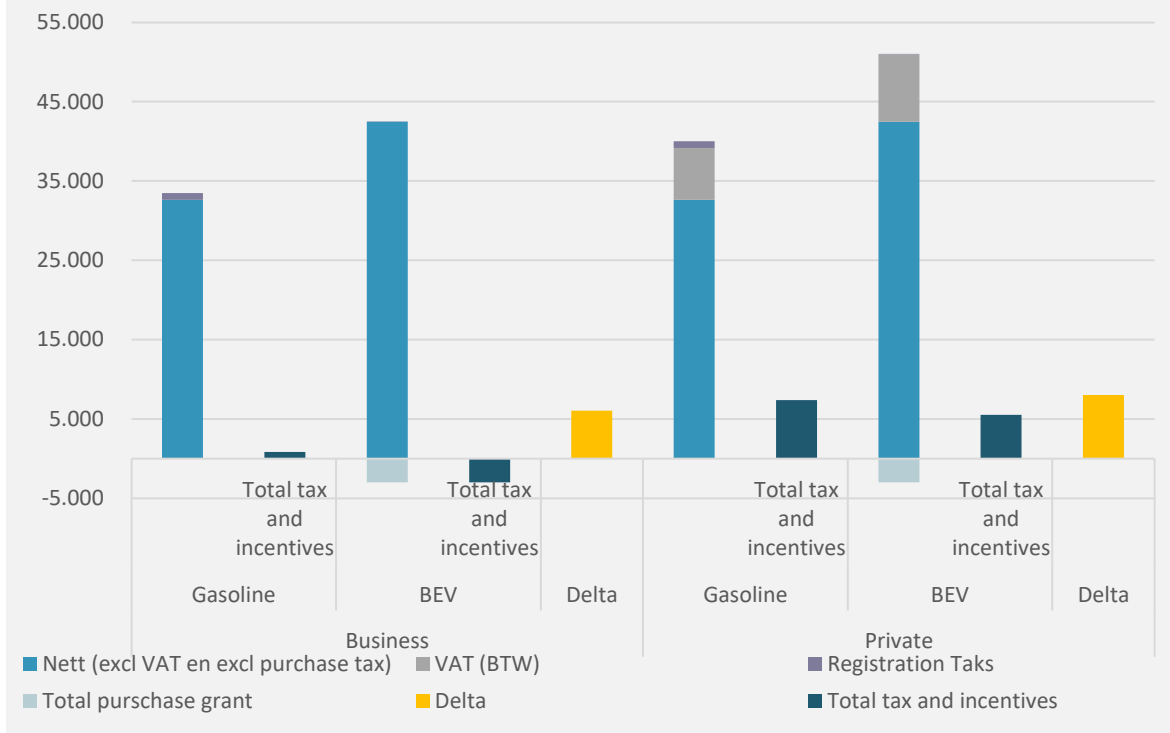
- The purchase prices of BEVs in the C segment are €1.500 and €1.000 higher than gasoline cars in the business- and private market respectively.
- The higher net price of BEVs is almost fully compensated by the purchase grant of €5.000 in the business market, and €7.000 in the private market.

Observations

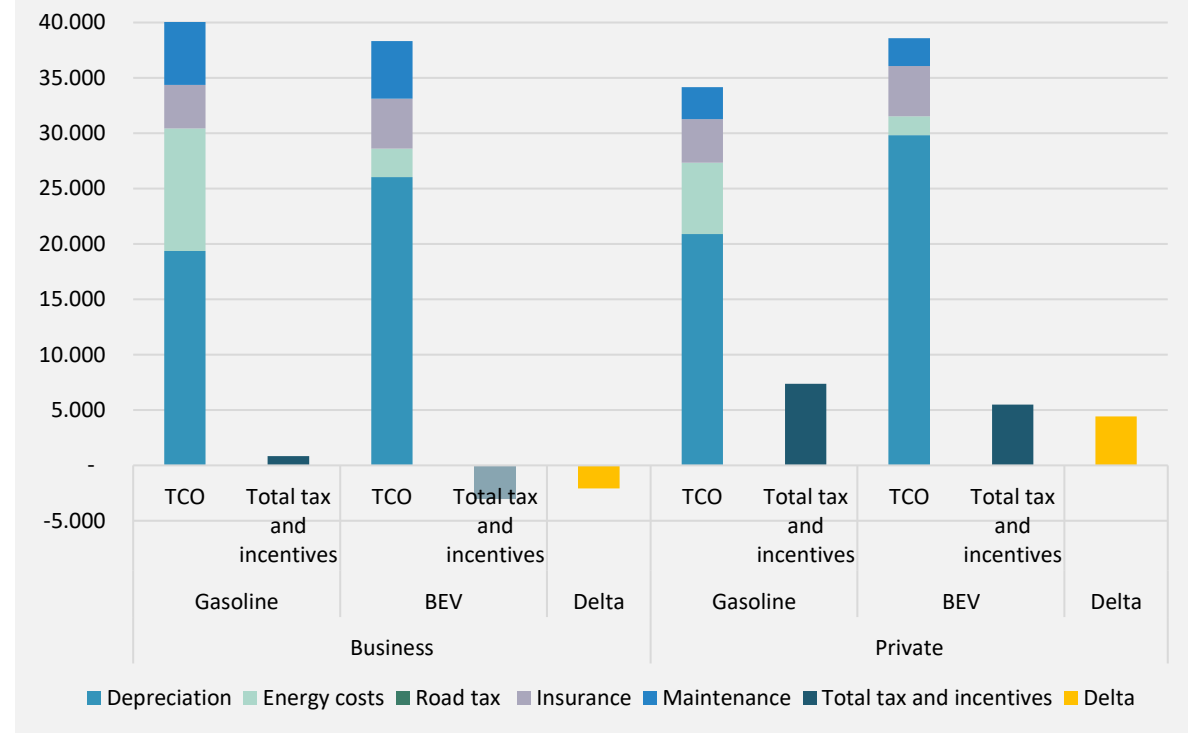
- The TCO for BEVs in the business market is a bit over €5.000 lower than gasoline cars. In the private market this benefit in the TCO for BEVs is €2.000.
- The high purchase grants lower the depreciation of the BEVs, this is usually the highest cost deficit compared to gasoline cars.
- The benefit is grounded in the lower energy costs for BEVs.



Purchase costs



TCO costs



Observations

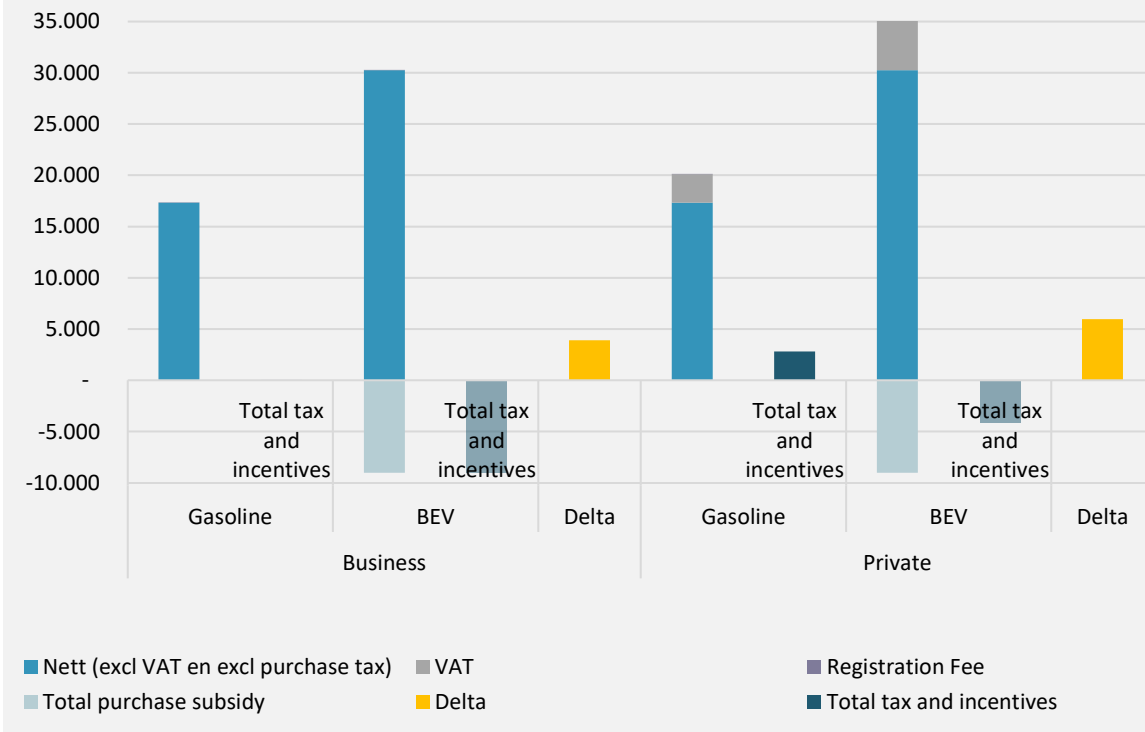
- The purchase price of BEVs in the D segment are €6.000 and €8.000 higher than gasoline cars in the business- and private market respectively.
- The list price of BEVs in the D segment is too high to be eligible for the full purchase grant. Therefore, the purchase grant is €2.000 and €4.000 lower than for BEVs in the C segment.

Observations

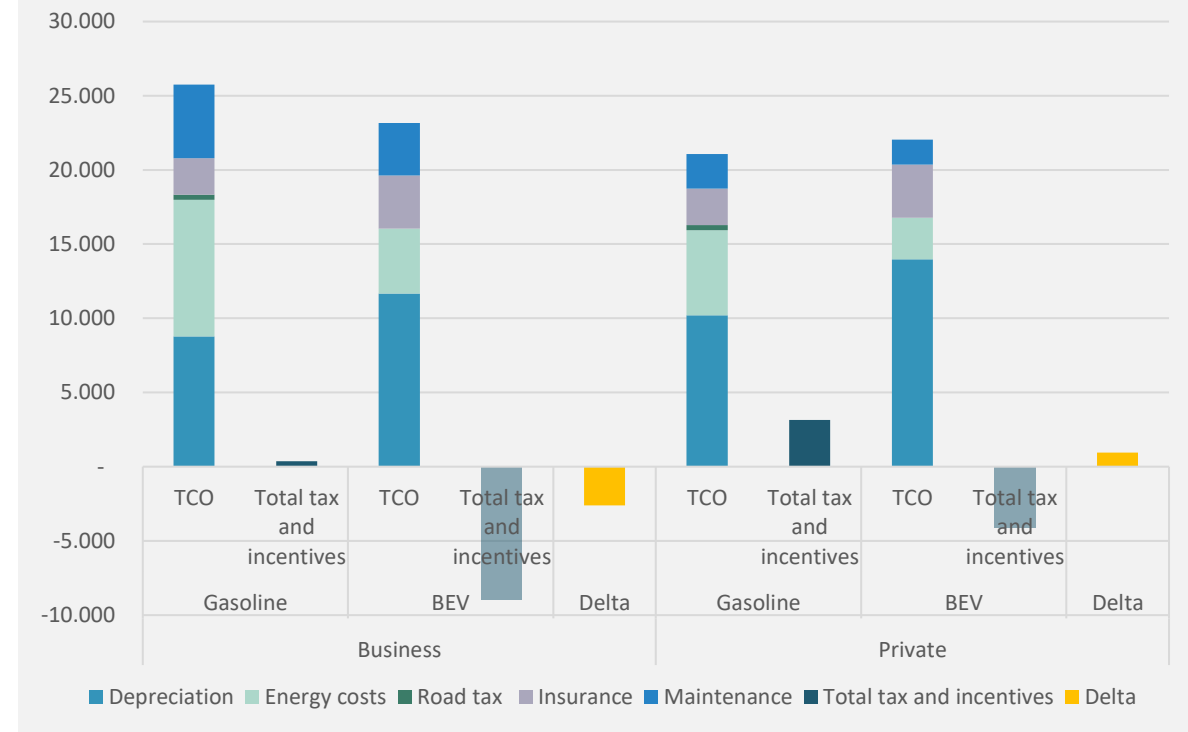
- The TCO of BEVs in the D segment is €2.000 lower than for gasoline cars in the business market. In the private market, the TCO for BEVs is €4.500 higher.
- The VAT on cars in the private market increase the depreciation, especially of the BEVs.



Purchase costs



TCO costs



Observations

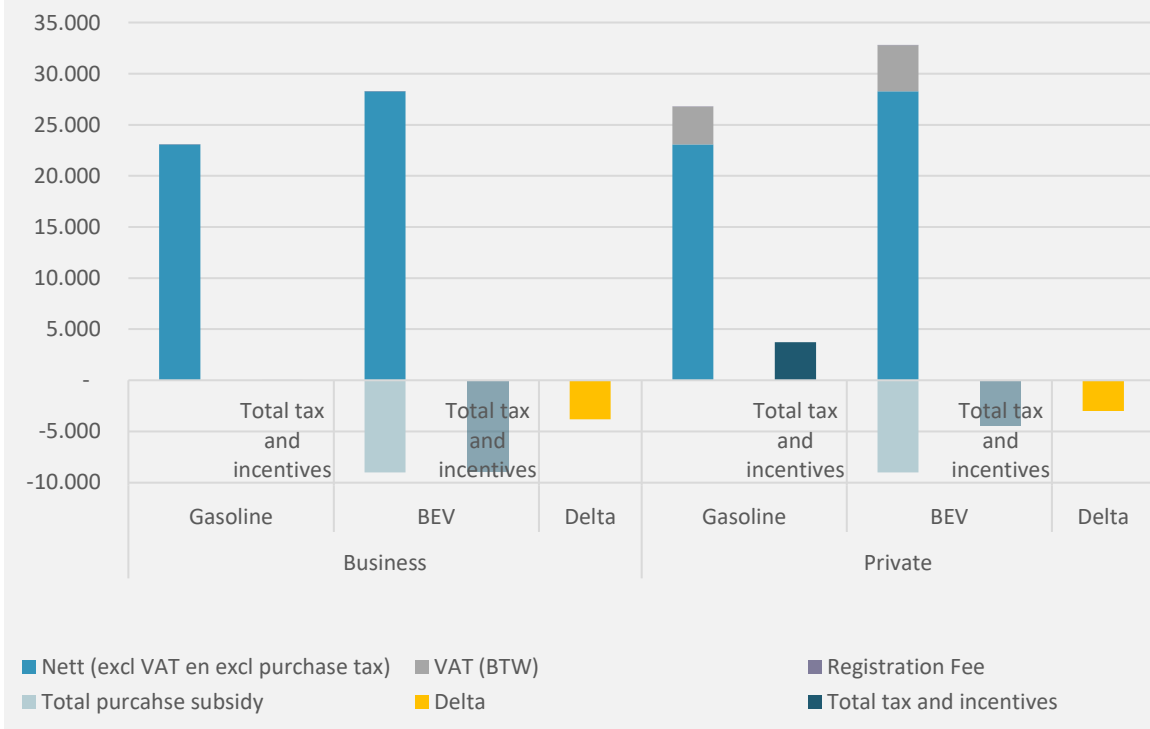
- The purchase prices of BEVs in the B segment are almost €4.000 and €6.000 higher than that of gasoline cars in the business- and private market respectively.
- The high purchase grant, €9.000 in total, does not offset the higher nett price for BEVs, which is around €13.000 in the B segment.

Observations

- The TCO of BEVs in the business market is +/- €2.500 lower compared to gasoline cars in the business market. In the private market, the TCO of BEVs is €1.000 higher than for gasoline cars.
- The purchase incentives heavily lower the depreciation. The high VAT in the private market keep the depreciation for BEVs in the private market.
- The saving for BEVs on energy costs in Germany is relatively low compared to other countries.



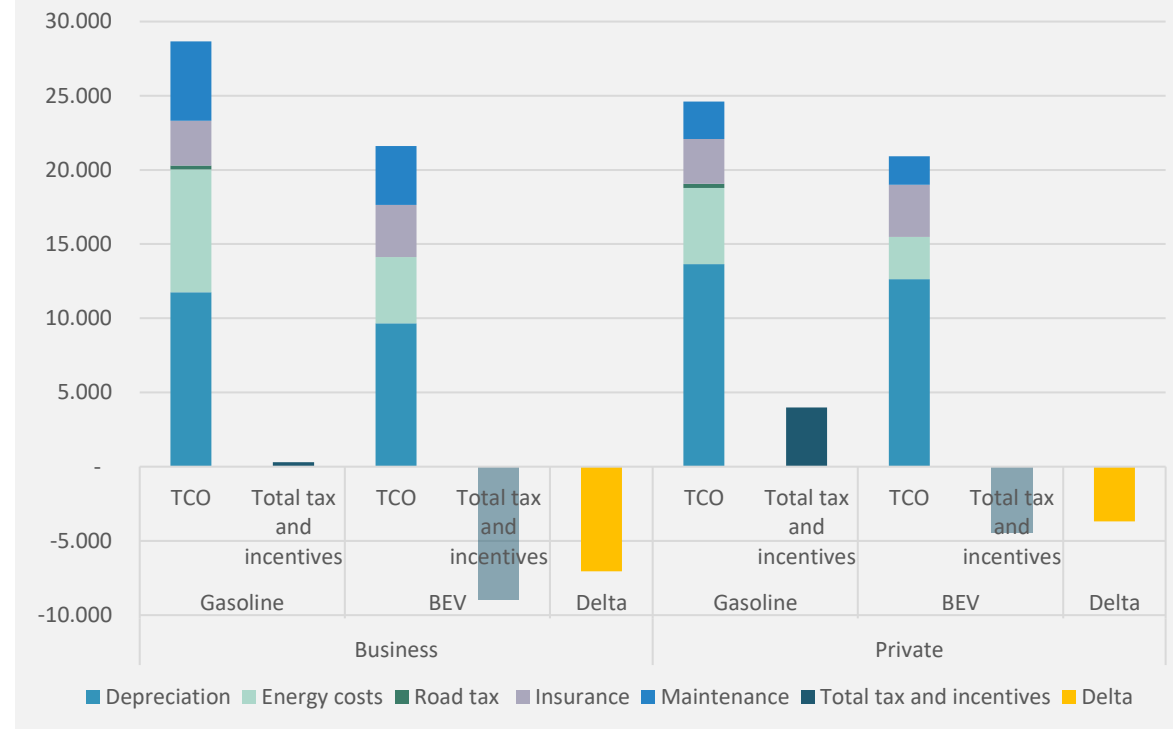
Purchase costs



Observations

- The purchase prices for BEVs in the C segment are €4.000 and €3.000 lower than gasoline cars in the business- and private market respectively.
- The purchase grant of €9.000 has a big influence in bringing down the purchase prices for BEVs.

TCO costs

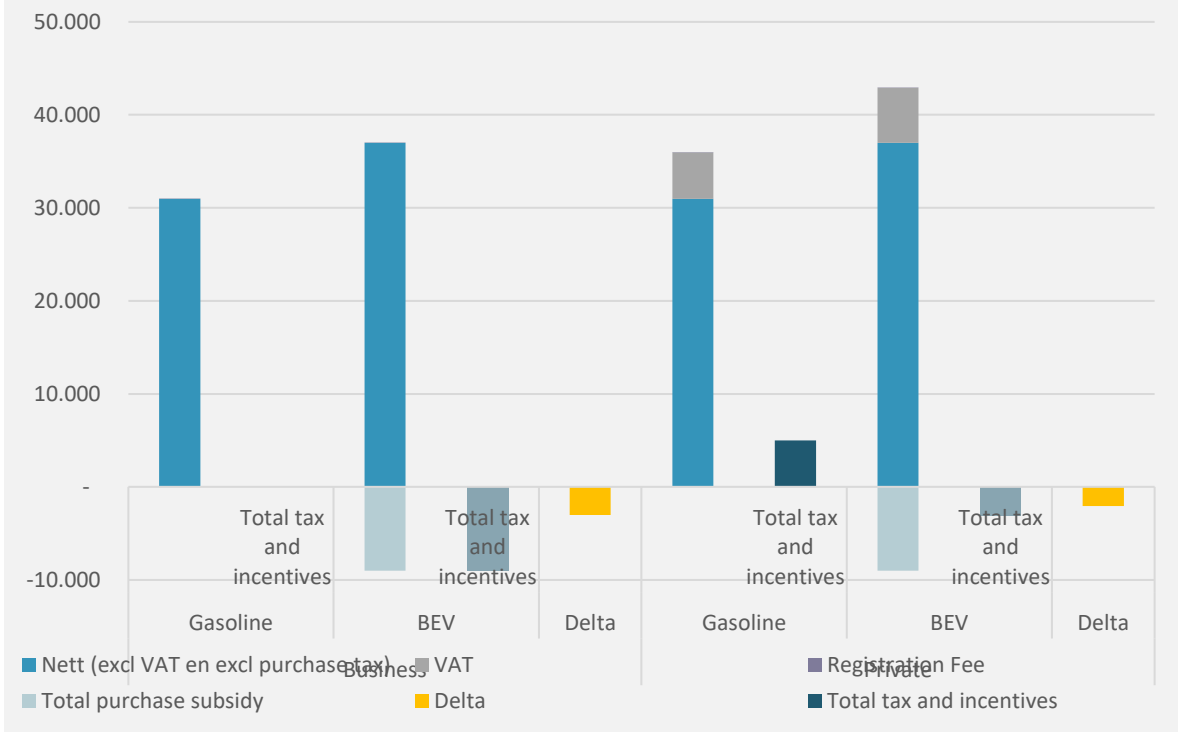


Observations

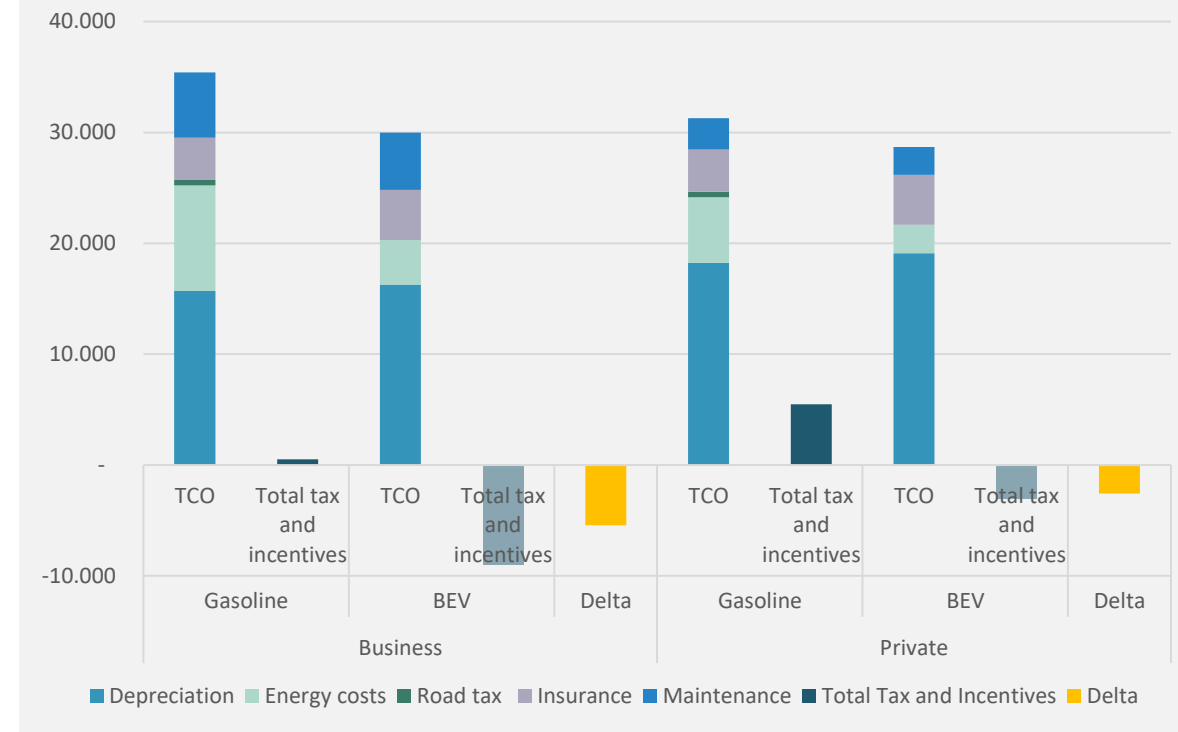
- The TCO of BEVs in the C segment is €6.500 lower than for gasoline cars in the business market. In the private market, this benefit of BEVs over gasoline cars is €3.500.
- The saving on energy costs of BEVs compared to gasoline cars is relatively low in Germany.
- The purchase grant causes the depreciation of BEVs in the business- and the private market to be lower than comparable gasoline cars.



Purchase costs



TCO costs



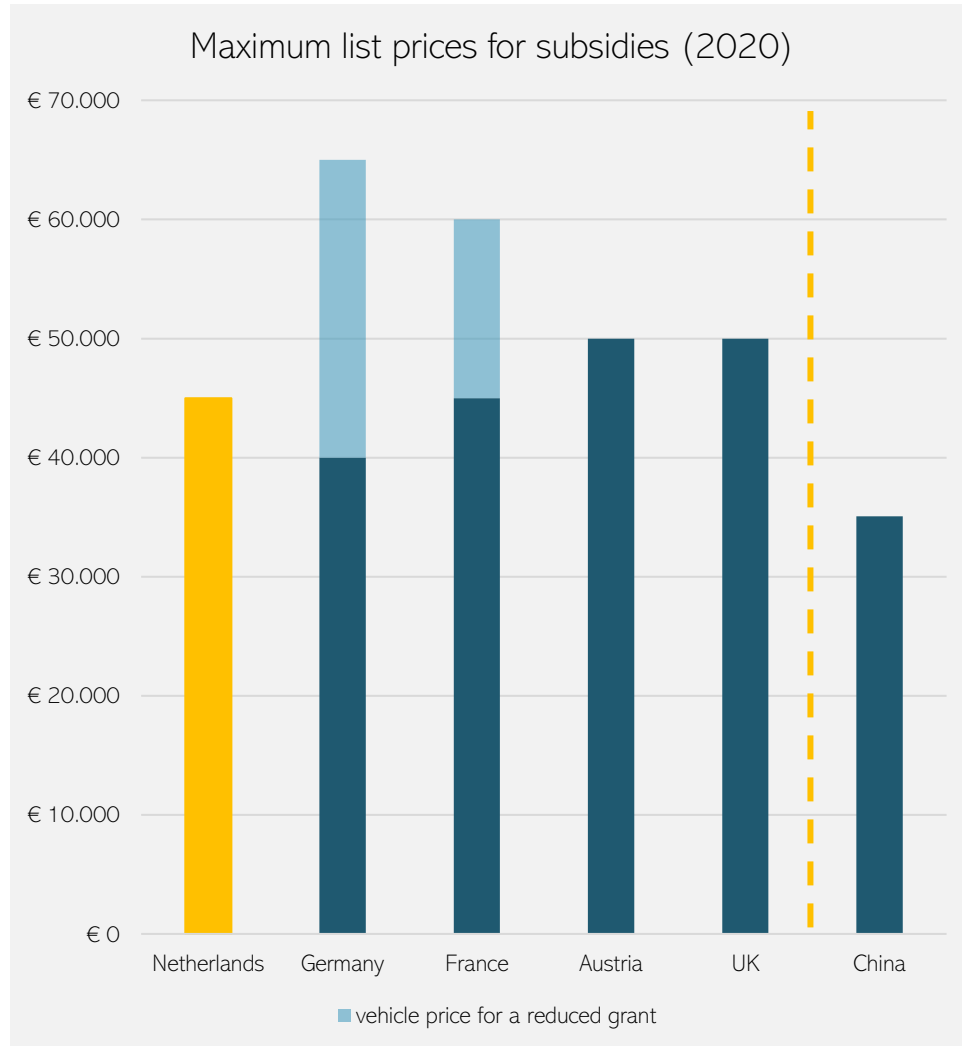
Observations

- The purchase prices of BEVs in the D segment are €3.000 and €2.000 lower than gasoline cars in the business- and private market respectively.
- The purchase grant in the Netherlands and France are not available or lowered for the D segment. In Germany such a lowered rate is also in place, however, the cars in the D segment are prices just below the cut off point for the purchase grant hence why the purchase price of BEVs is lower than gasoline cars.

Observations

- In the business market, the TCO of BEVs in the D segment is around €5.500 lower than that of gasoline cars. In the private market is that benefit for BEVs €2.500.
- The depreciation of BEVs and gasoline cars in the D segment are very equal.
- The gain of BEVs compared to gasoline cars on energy costs are low in Germany.

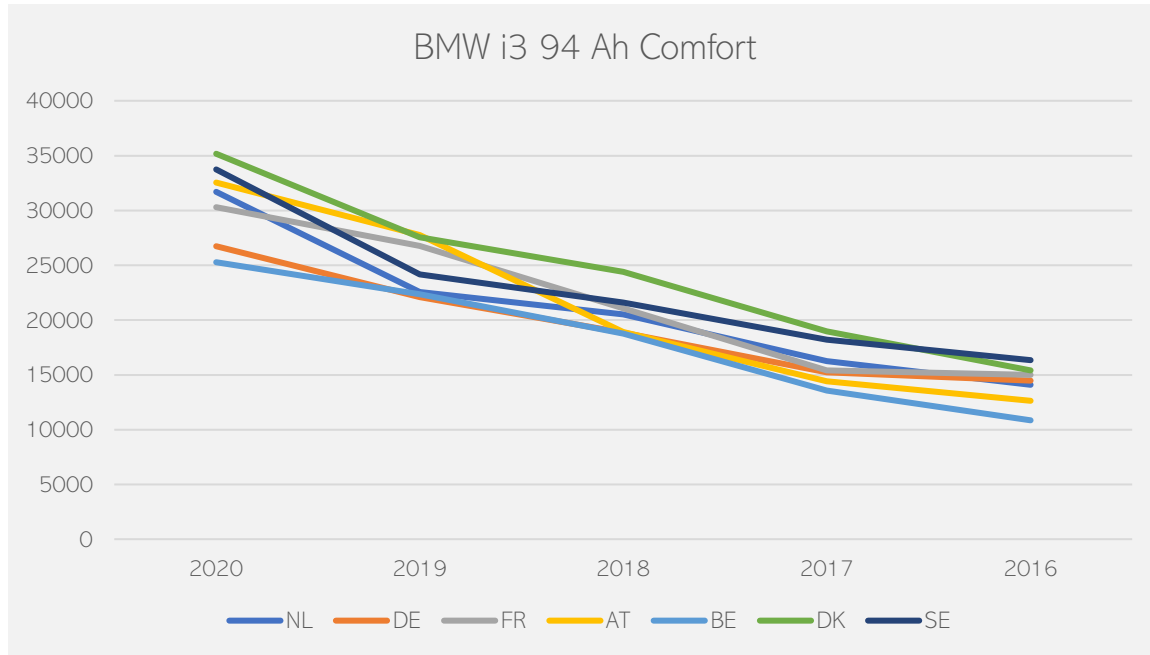
Attachment: Levelling effects of purchase grants



Observations

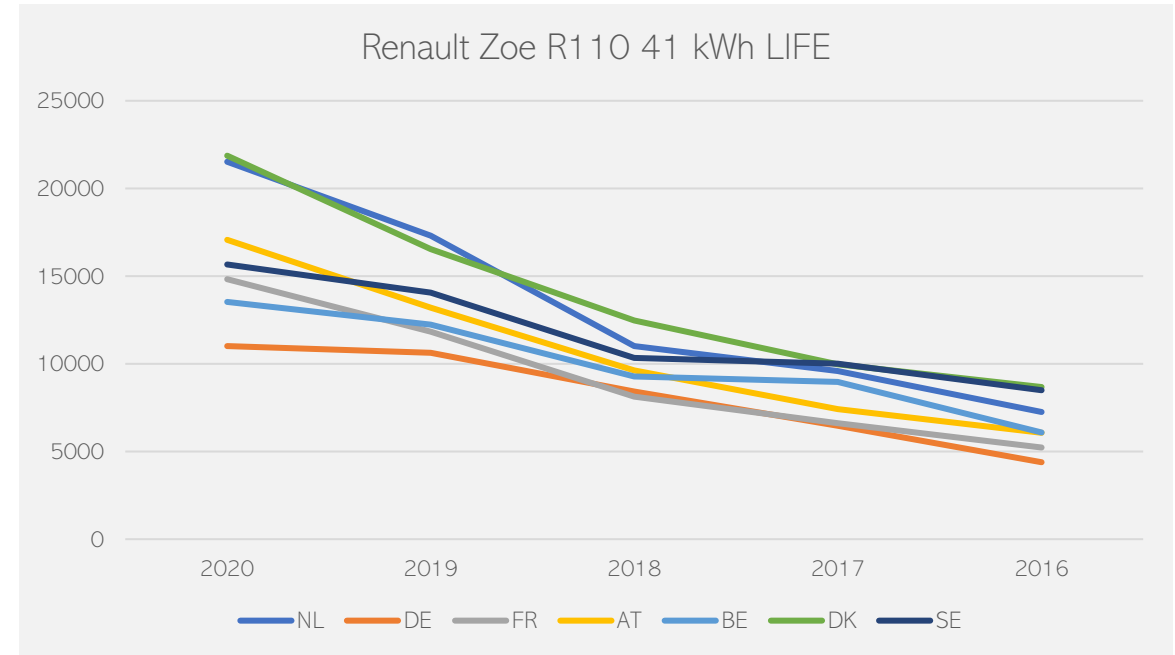
- France and Germany are the only two countries with a two-step cut off point. The higher price-group gets a lower incentive than the lower-price group. In Germany the grant goes down by €1.500, in France by €4.000.
- The USA does not have a car-price dependent incentive. California, which has been used as an example in the report, does have an income-dependent rebate program.

Attachment: Occasion market



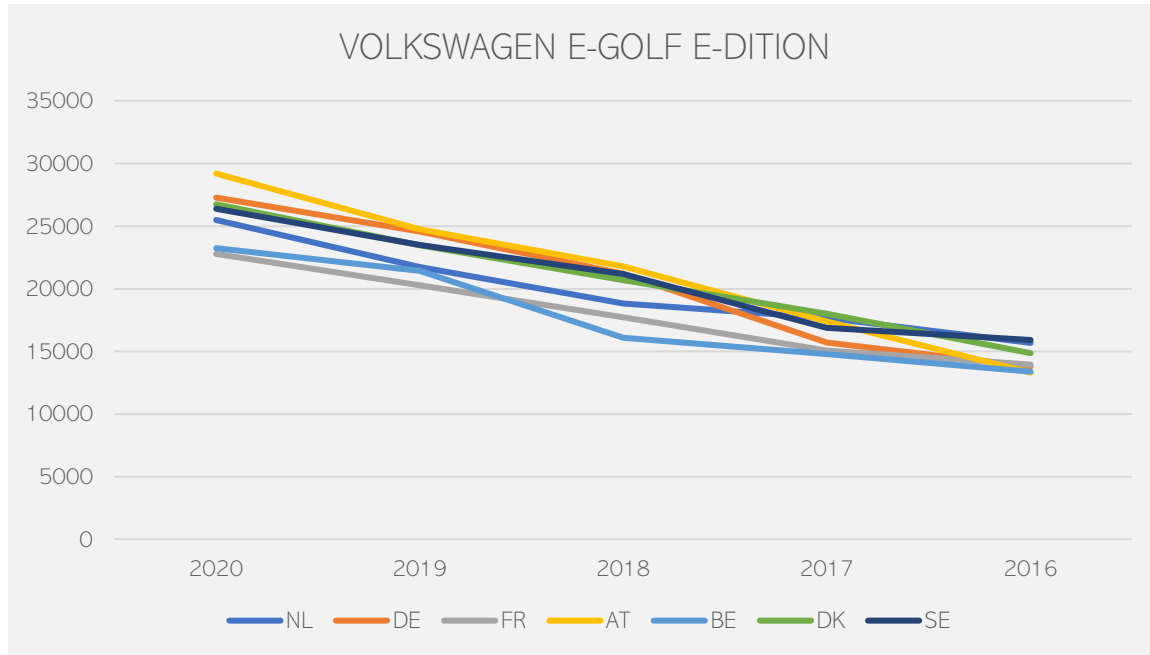
Conclusions BMW i3:

- Young Occasion (2020) highest price in Denmark (EUR 35.200) and lowest in Belgium (EUR 25.300). NL in the middle (EUR 31.700)
- BMW i3 (2016) highest price in Sweden (EUR 16.400) and lowest price in Belgium (EUR 10.800)
- Highest price degradation in Austria and Denmark (-EUR 19.800)



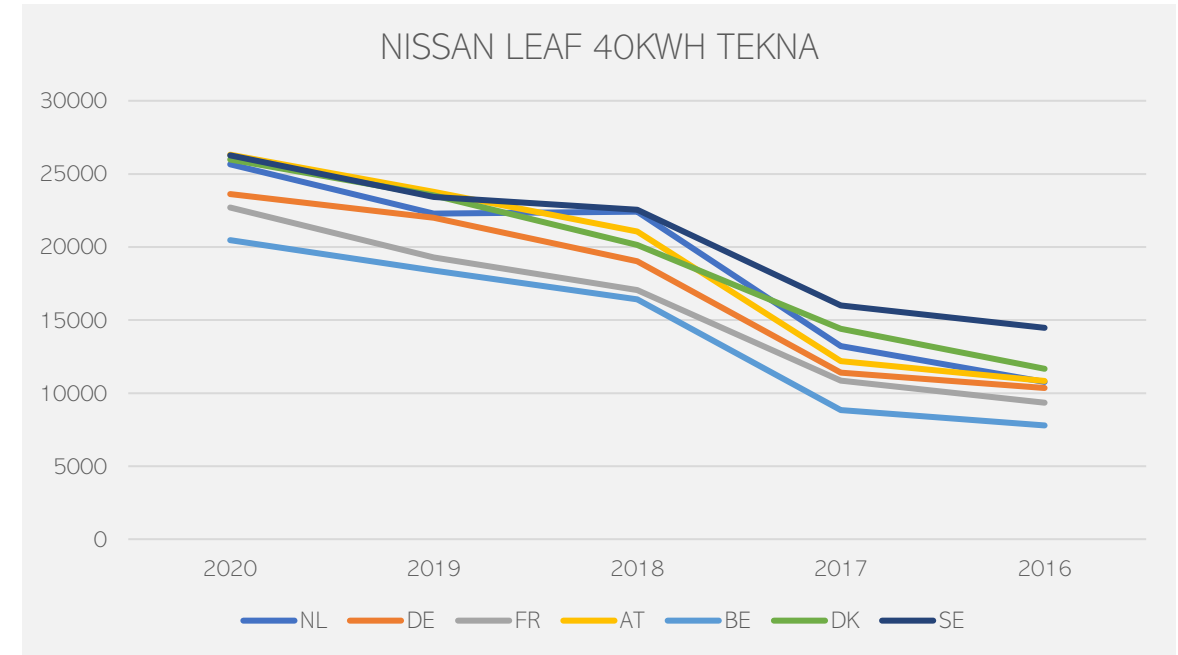
Conclusions Renault Zoe:

- Young Occasion (2020) highest price in Denmark and NL (EUR 21.600) and lowest in Germany (EUR 11.400)
- Renault Zoe (2016) highest price in Denmark (EUR 13.200) and lowest price in Germany (EUR 6.600)
- Highest price degradation in NL (-EUR 14.300)



Conclusions VW e-Golf:

- Young Occasion (2020) highest price in Austria (EUR 29.000) and lowest in Belgium (EUR 20.400). NL in the middle (EUR 25.500)
- VW e-Golf (2016) highest price in Sweden and NL (EUR 15.500 – 16.000) and lowest price in Austria and Belgium (EUR 13.300)
- Highest price degradation in Austria (-EUR 15.800)



Conclusions Nissan Leaf:

- Young Occasion (2020) highest price in Austria and Sweden (EUR 26.300) and lowest in Belgium (EUR 20.400). NL in the middle (EUR 25.600)
- Nissan Leaf (2016) highest price in Sweden (EUR 14.500) and lowest price in Belgium (EUR 7.800)
- Highest price degradation in Austria (-EUR 15.840)
- In each country high degradation between 2017 and 2018 due to the new gen Leaf with larger battery introduced in 2018

BEV occasion market relative to total market

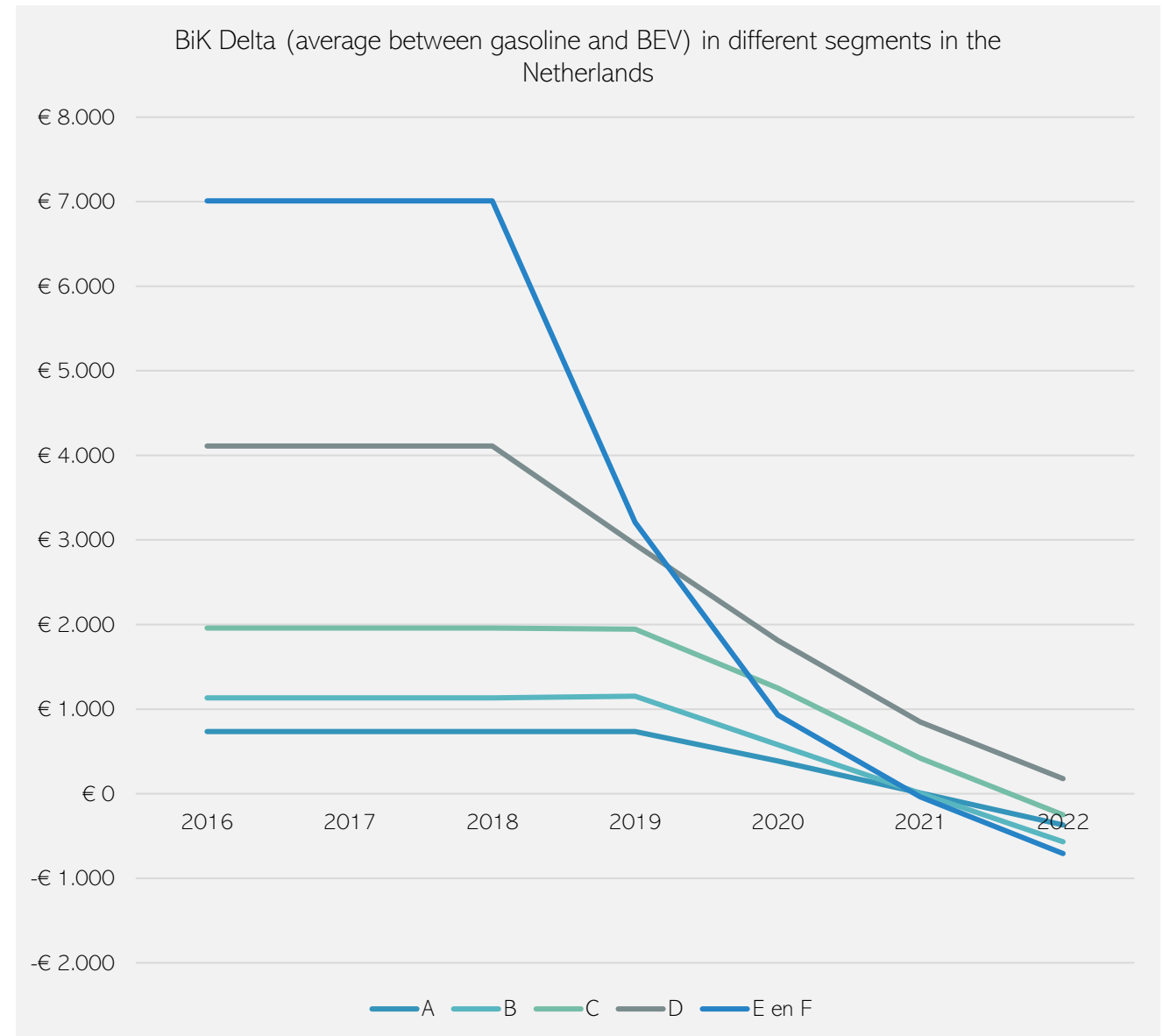
| Country | Largest Occasion portal | # BEV presented | # vehicles presented | % BEV / Total | Compared to BEV% in fleet |
|-------------|-------------------------|-----------------|----------------------|---------------|---------------------------|
| Netherlands | Autoscout24.nl | 3.800 | 220.000 | 1.7% | 1,26% |
| Germany | Mobile.de | 19.000 | 1.500.000 | 1.2% | 0,28% |
| France | Leboncoin.fr | 10.000 | 905.000 | 1.1% | 0,52% |
| Austria | Gebrauchtwagen.at | 2.400 | 120.000 | 2.0% | 0,59% |
| Belgium | Autoscout24.be | 1.500 | 123.000 | 1.3% | 0,32% |
| Denmark | Billassen.dk | 1.500 | 52.000 | 2.9% | 0,61% |
| Sweden | Bybil.com | 2.600 | 72.000 | 3.6% | 0,62% |
| Norway | Finn.no | 6.600 | 54.000 | 12,2% | 8,62% |

Observations

- Norway, Sweden and Denmark have the largest relative share of BEV presented at their occasion portals
- France and Germany have the highest amount of BEV's in their portals but the lowest relative share of BEV's presented at their occasion portals

Attachment: Benefit in Kind (BiK)

- In the larger and more expensive segments, the BiK delta between gasoline and BEV used to be bigger;
- Also, the BiK advantages of the other segments are rapidly decreasing;
- It is not the BiK tax percentage that is decisive, but the difference in BiK tax relative to gasoline cars. As soon as the cost advantage declines too much, it will be a realistic scenario that the corporate demand will decline, and corporate users will opt for gasoline cars.



Attachment: Recharging infrastructure

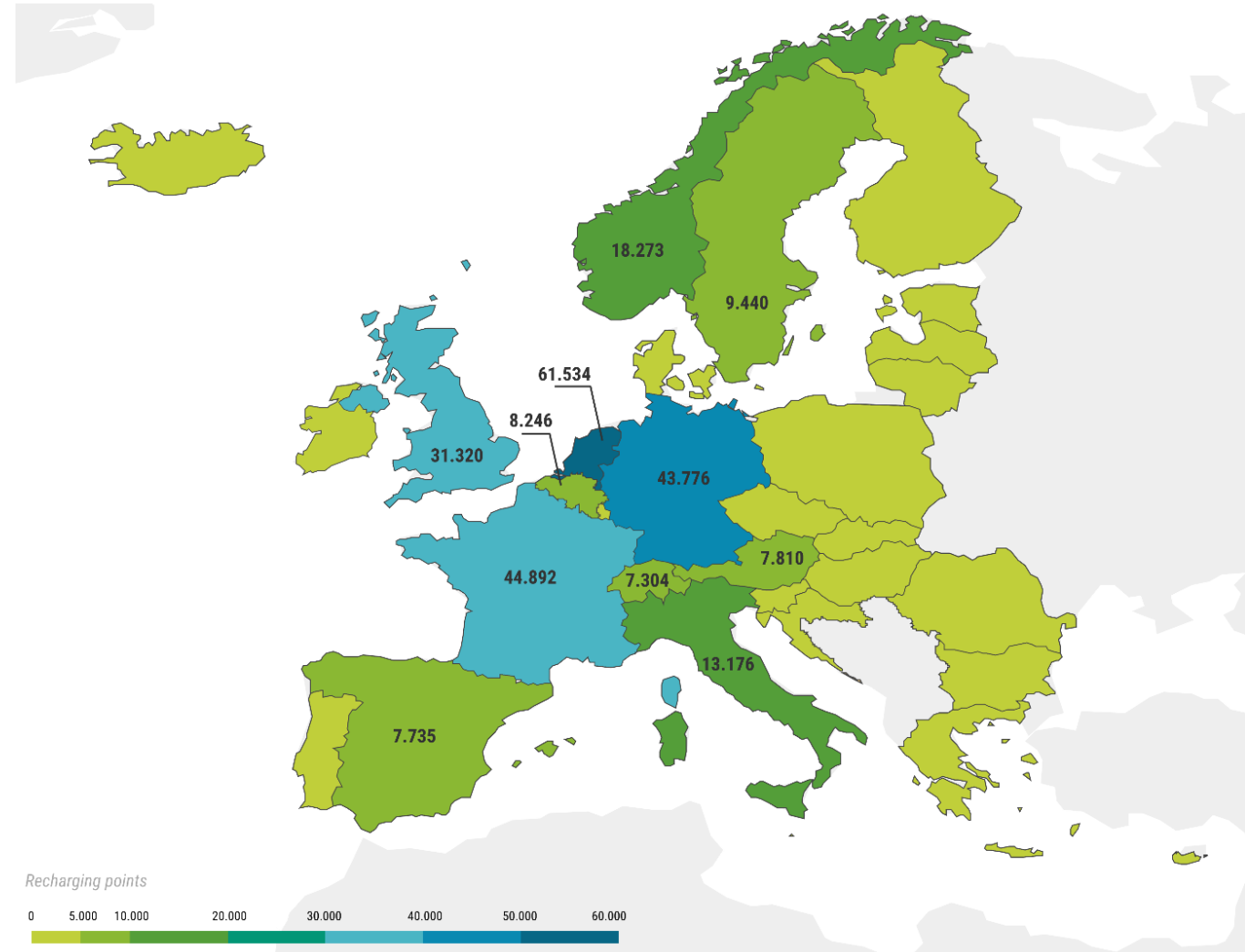
One of the most important prerequisites for a successful uptake of EV's, is the availability of enough recharging points. Especially for (future) EV-drivers that don't have the luxury of recharging their EV on their private property, public high power (power above 22 kW) and normal (power up to 22 kW) recharging points should be easily available and accessible to the user.

In the last 5 years, the amount of public recharging points in Europe has grown from 67.000 in 2015, to more than 271.000 in September 2020.

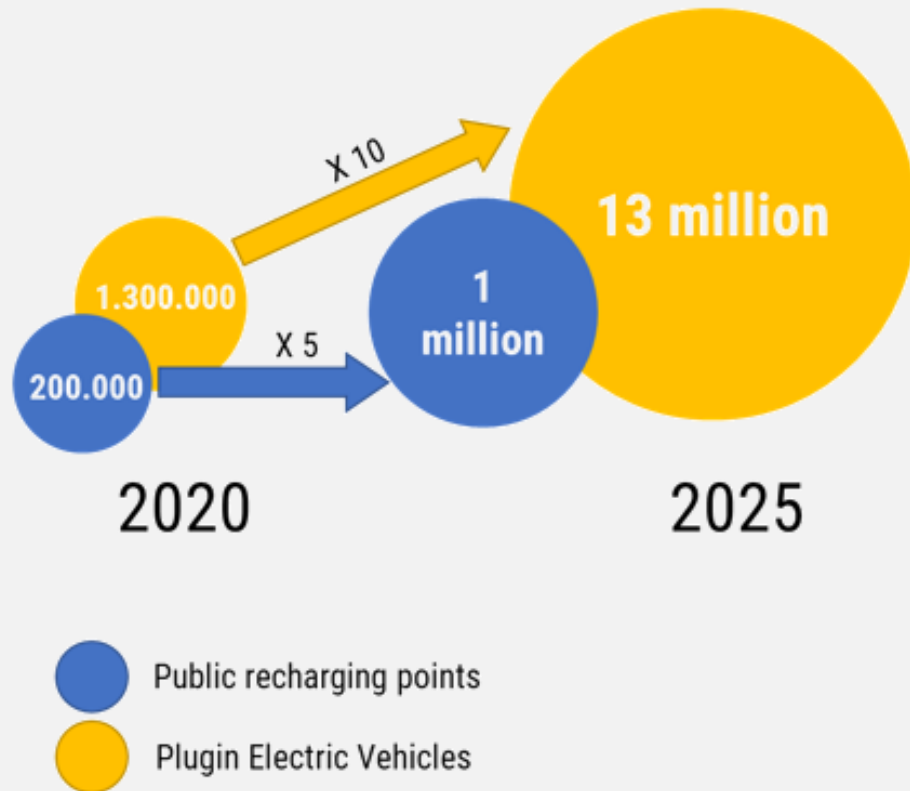
However, as can be seen on the map, more than 167.000 or 62% of the total in Europe are accounted for in only 4 countries (The Netherlands, Germany, France and the United Kingdom).

Total amount of public recharging points per country (September 2020)

Normal (<22kW) and Fast (>22kW) public recharging points (counted according to AFID)



EU Plugin electric vehicle and charge points now and the EU Green Deal 2025 targets

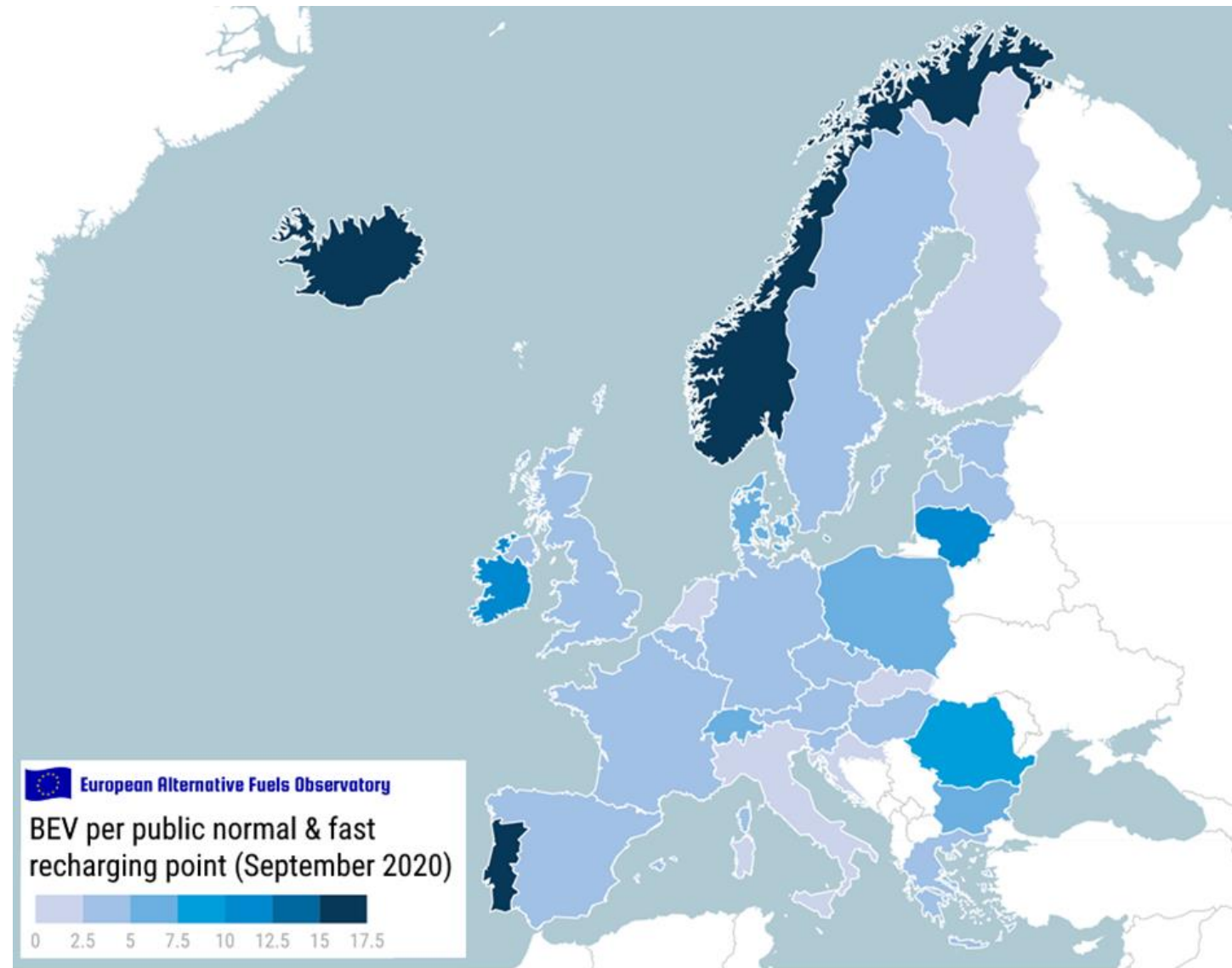


The EU has set a target of 1 million public recharging points in 2025. To reach this target, 5 times as many recharging points need to be installed as were in August 2020. If this target is too low or too high is hard to say at this moment, but what is important is that the amount of plugin electric vehicles (PEV) per available public recharging point is monitored closely as indicator, so that the roll-out of public recharging points can be planned ahead of the uptake of PEVs. With the ever-increasing uptake of PEV's and the enormous workload that is expected to install enough public recharging points in time, this indicator can support policy makers, (local) governments and CPOs to keep making sure there are enough public recharging points available.

Derived from the current version of the Alternative Fuels Infrastructure Directive (AFID 2014/94/EU), the target for the amount of PEV per public recharging point is 10. This is the target for both PHEV and BEV together, compared to the total number of public normal and high-power recharging points. When comparing this indicator in some countries, we find some interesting differences.

The amount of BEV's per normal and high-power recharging point together, is especially very high in Iceland, Portugal and Norway.

In these countries, this is mainly caused by a lack of normal (AC) recharging points, leaving people more heavily dependent on high power recharging infrastructure when they can't recharge at home or at work.

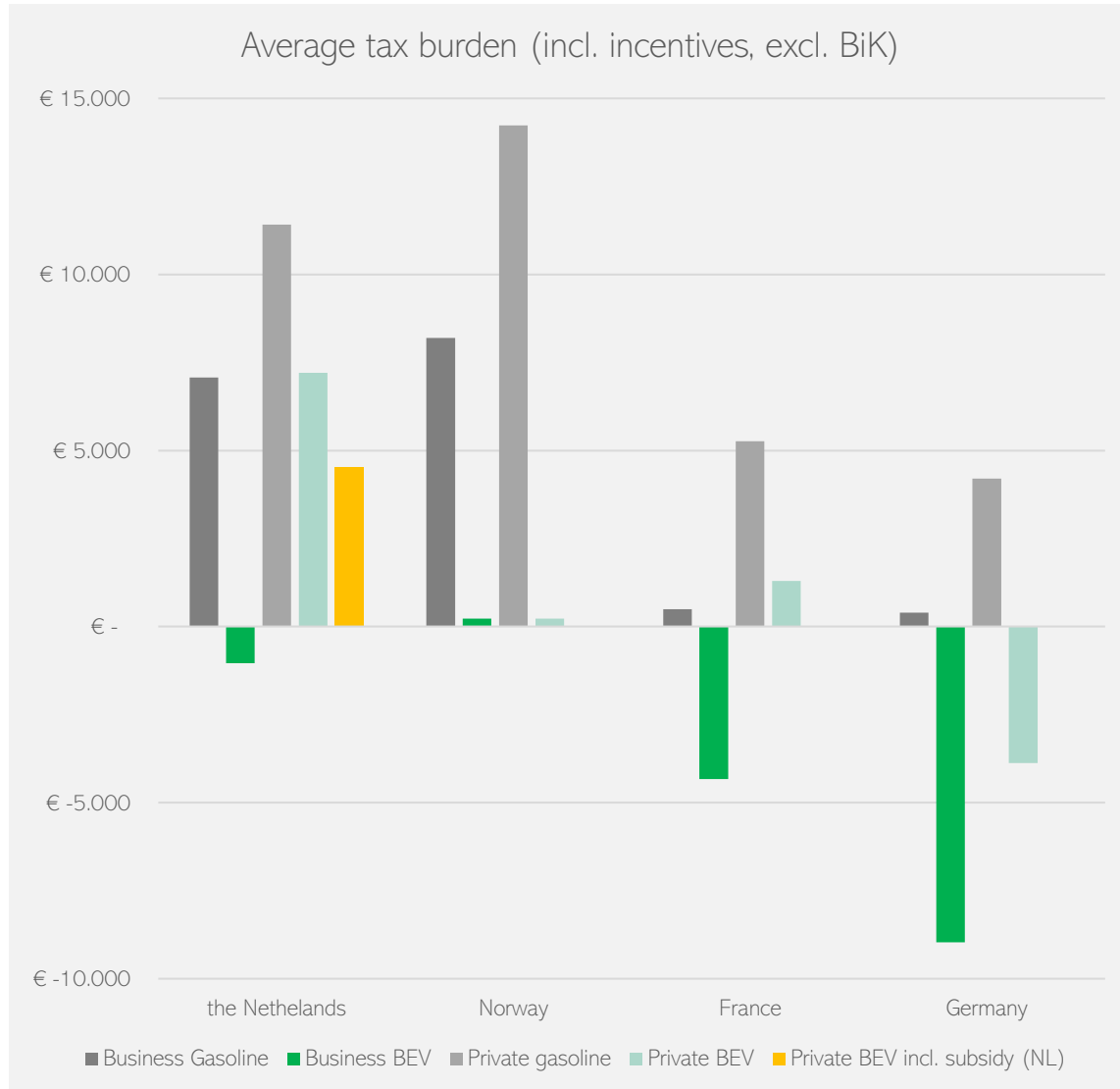


Source: European Alternative Fuels Observatory Created with LocalFocus

Attachment: Tax burden comparison

- Tax on ownership
- Tax on BiK

Comparison of average tax burden on ownership



Method

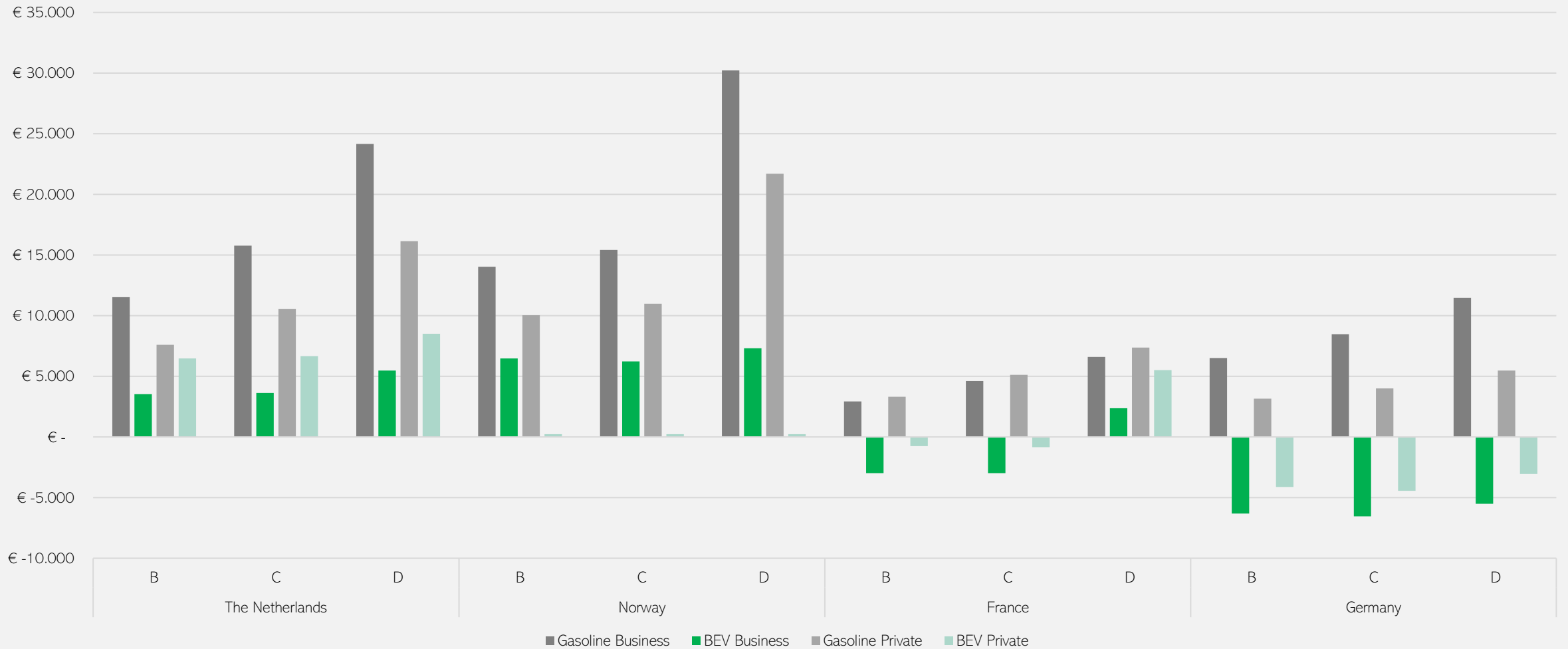
- The average tax burden is calculated by adding all taxes to be paid over four years together, this includes VAT on the purchase, purchase taxes, and road taxes, and subtracting purchase subsidies. The average is calculated for the B-, C-, and D segment. The graph is a summary of the numbers presented in the TCO per country.

Observations

- Taxation on BEVs in Germany is low due too high incentives, that also BEVs in the D segment are eligible for, and the low registration fee.
- France also has high purchase grants and low registration fees for BEVs, however, the lowered purchase grant for the D segment, and the lowered purchase grant for all segments in the business market, cause the difference with Germany.
- Norway is the only country that excludes BEVs from VAT, this creates an enormous benefit for BEVs over gasoline cars in the private market. That is also the reason why in Norway most BEVs are sold in the private market. In the other countries, most BEVs are sold in the business market.

Tax burden on ownership

Tax burden (incl. incentives, incl. BiK) for BEVs and Gasoline cars
For the private- and business market, and the B-, C-, and D segment



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