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The future of gas stations

How fuel distribution networks will have to reshape by 2050

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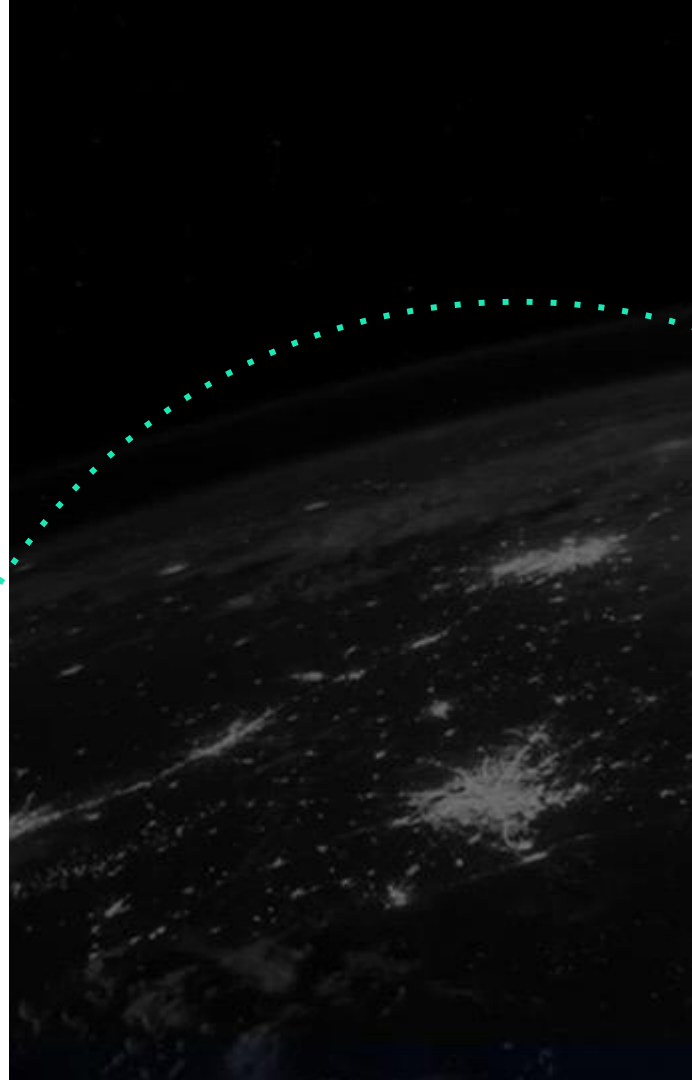
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Executive Summary

The number of gas stations in Europe **has been declining for more than a decade**, in a context of stricter regulations, higher taxations and fuel consumption reductions.

Focusing on **regulatory, technological and behavioral long-term trends**, Sia Partner has analyzed how the global fuel consumption will evolve over the next 30 years and has estimated that **the number of European gas stations will fall by 43%, at 68 500 units, in 2050**. This decline is related to a decrease of the average vehicle fuel consumption, the transformation of the fleets, as ICE vehicles will fall below 50%, and a continuous decrease in distance travelled.

Depending on their **locations** and thus their **customer needs**, **gas stations will evolve in different ways**: due to their high volume of sales and vehicle traffic, highway gas stations are more likely to withstand, followed by urban gas stations; on the contrary, rural gas stations are at risk.

To survive, European gas stations will have to develop **four levers**: **offer diversification**, such as a diversification of the sources of energy sold, **customer experience** like premium and digital services, **additional revenue** via retail activities or enhancement of mobility hubs, and **cost cutting** in the form of strategic partnerships.

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Foreword

Foreword

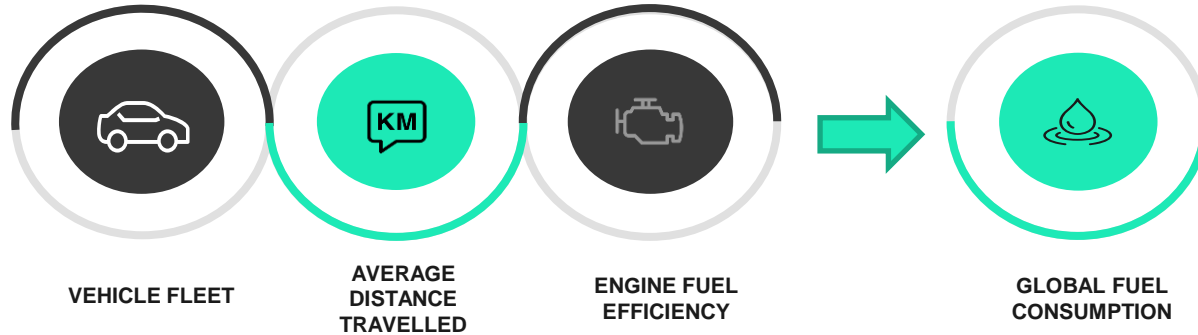
Scope and objectives of the study

The main objectives of the study are to assess the impact of the energy transition on the fuel distribution sector in Europe (EU-28) by 2050 and identify recommendations to anticipate this transformation

Foreword

Scope and objectives of the study

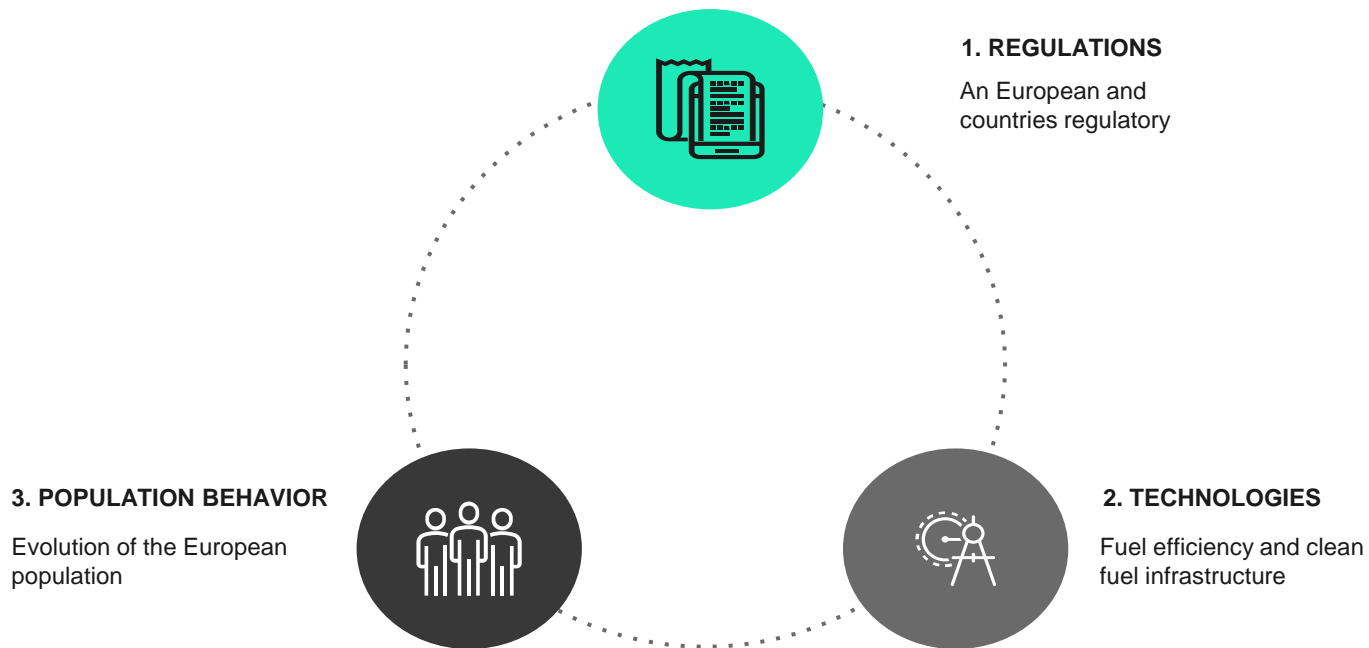
Sia Partners has analyzed 3 factors to compute the global fuel consumption in 2050, and thus, estimate the number of gas stations in Europe.



Foreword

Scope and objectives of the study

To estimate the evolution of these 3 factors by 2050, **Sia Partners has focused on 3 trends.**



Foreword

Scope and objectives of the study

Sia Partners study will only take into account **the passenger cars, light commercial vehicles (LCV) and Medium and heavy commercial vehicles (MHCV)**. As motorcycles only represent a small percentage of the vehicle fleet, it will not be taken into account in our study (refer to conclusion of part I for further details).



Passenger cars and Light commercial vehicles (LCV), under 3,5t, represent the major part of the European vehicles fleet and fuel sales. Combined, they average 280 million in Europe and consume 180 billion tons of fuels per year.

In Sia Partner study, it will be stated as “passenger cars”.



The 7 million European **Medium and Heavy commercial vehicles (MHCV)**, above 3,5t, consume more than 160 billion tons of fuels per year.



Motorcycles’ annual fuel consumption averages 2% of total vehicles’ fuel consumption.

Due to this marginal contribution on gas stations’ recurring revenues, the motorcycles will not be added in the study scope (refer to conclusion of part I).



Introduction

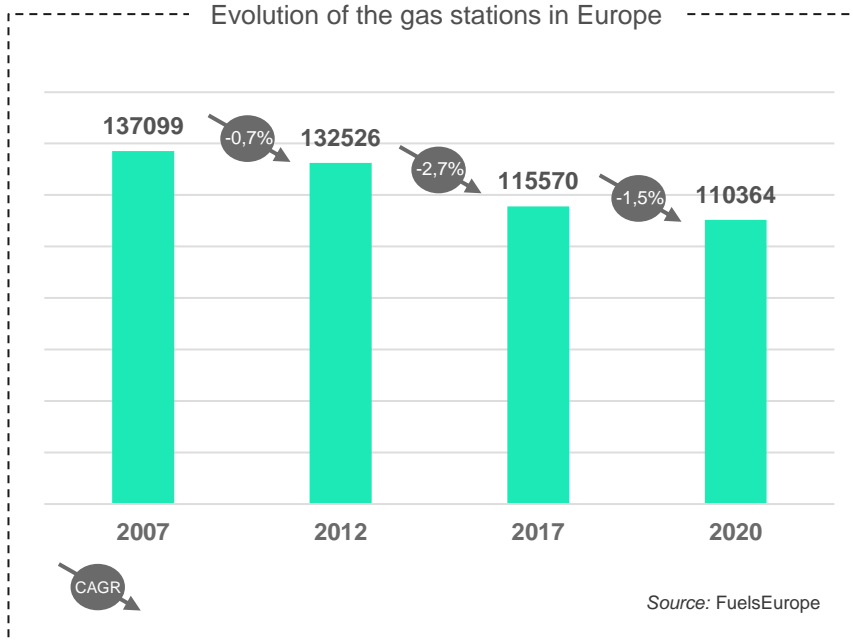
Introduction

Fuel distribution current situation

In Europe, the number of gas stations has reduced by 15% in less than a decade





Introduction

The number of gas station has been in decline for more than a decade



Due to a mature economy in Europe, the number of gas stations has peaked in the 80's and is **now decreasing to reach around 110 000 in 2020.**

Highest petrol stations in Europe:

- | | | | |
|--|--------|--|--------|
| 1.  | 21 700 | 3.  | 11 600 |
| 2.  | 14 500 | 4.  | 11 000 |

The reduction in the number of gas stations in Europe can be explained by a restrictive environment linked to:

- **Regulations** imposing strong safety and environmental constraints.
- **Significant taxation** on petroleum products resulting in low profitability in the distribution sector.
- **Fuel consumption** with an underlying downward trend

Regulations, taxation and fuel consumption decline have decreased the number of gas stations in Europe.



I. The 2020 market of gas stations in Europe

I. The 2020 market of gas stations in Europe

Introduction concerning the four main factors

Sia Partner analysis is targeting three main factors impacting the global fuel consumption and thus the evolution of gas stations in the next decades. These factors are the following:



Vehicle fleet



Average distance travelled



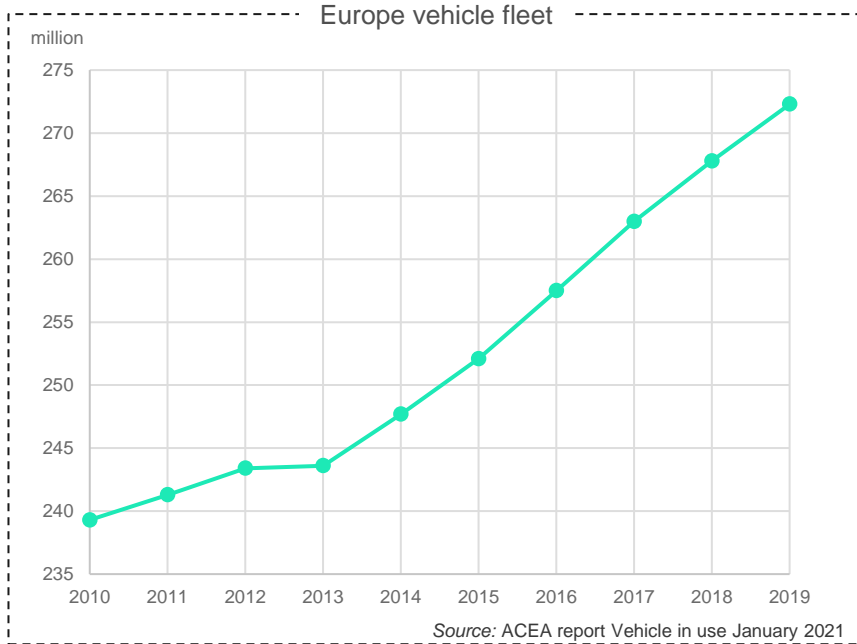
Engine fuel efficiency



Global fuel consumption

I. The 2020 market of gas stations in Europe

The global vehicle fleet has increased over the years



During the last 10 years, a **steady increase in the European passenger car fleet (+13%)** has been observed, due to an increase from the European eastern countries while the European western countries remained stable. Driver countries:

European eastern countries



+54%



+30%

European western countries



+10%



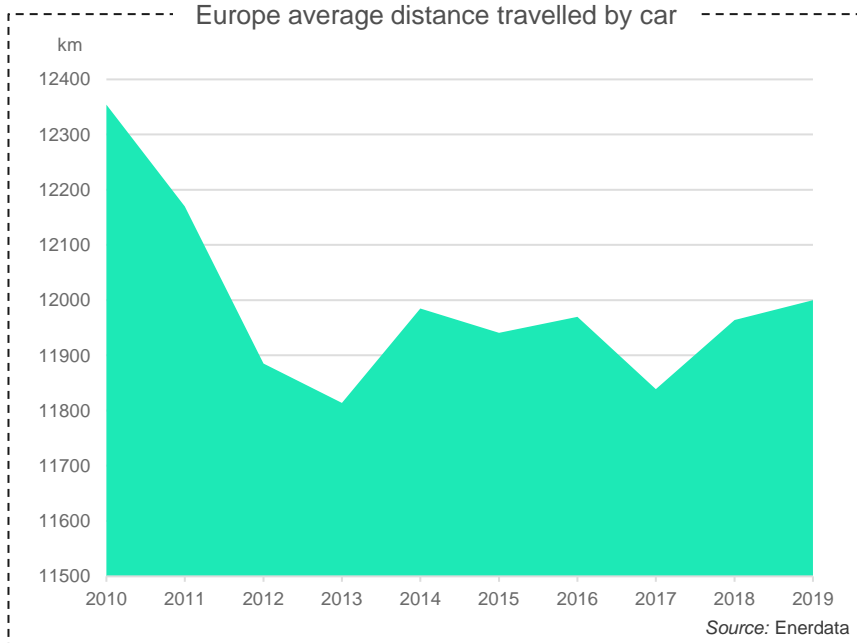
+6%

The European fleet size increase might slow down as the driver countries will tend to catch up the economical and public infrastructure level of their western counterparts.

Driven by the eastern countries, the European passenger car fleet has steadily increased over the last 10 years.

I. The 2020 market of gas stations in Europe

The average distance travelled by car has globally decreased



Over the last decade, a **slow decrease can be noticed in average distance travelled by passenger cars (-3%)** as most of the European countries had a constant distance travelled during those 10 years (around 12 000 km/year).

Nevertheless, disparities can be observed between countries :



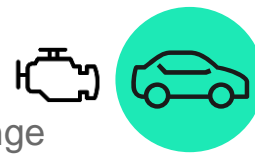
Very sharp reduction (-27%)



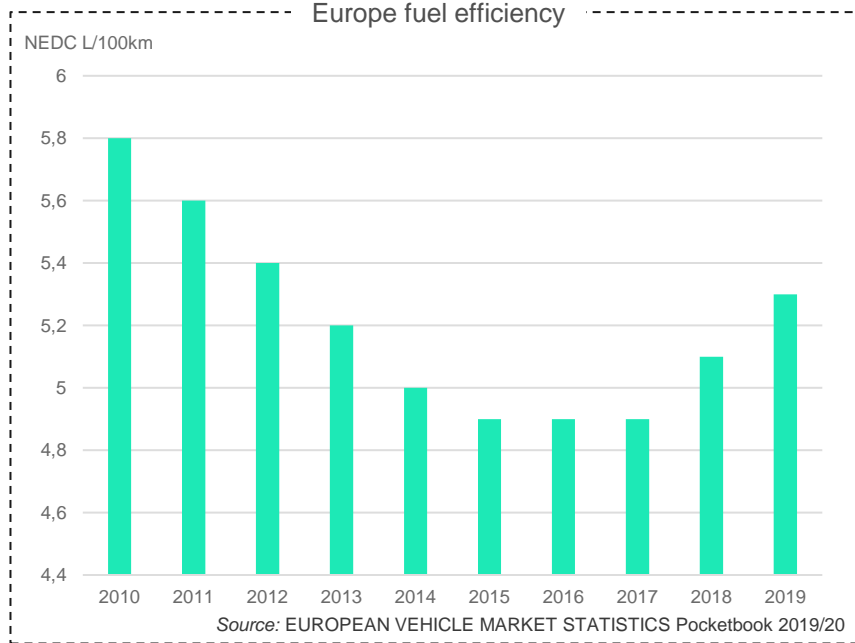
Notable Increase (+ 10%).

This decrease should continue as stricter car regulations have been voted and environmental awareness has found its way in the public debate.

I. The 2020 market of gas stations in Europe



The engine fuel efficiency has improved over the last 10 years but external factors may change the statu quo



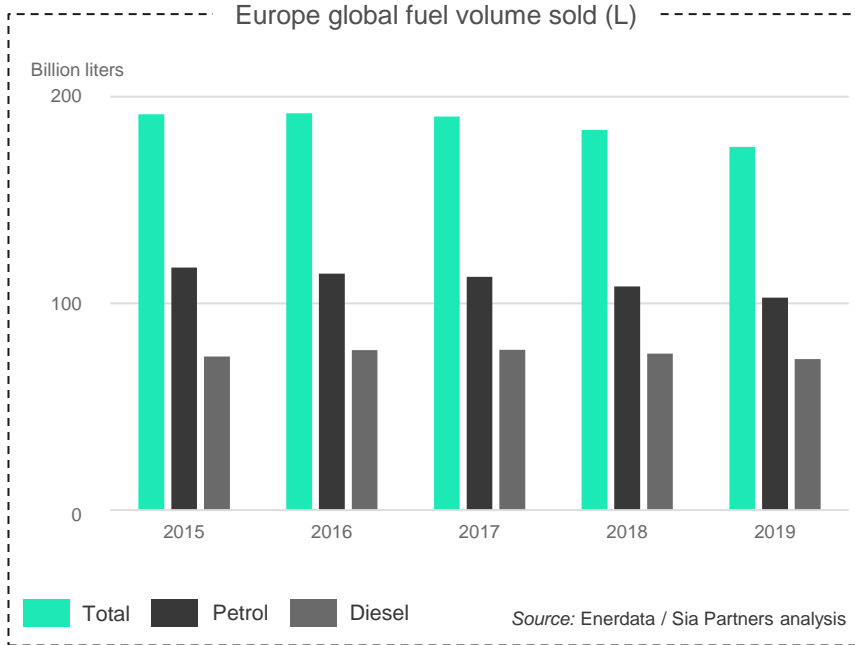
The fuel consumption has not dropped significantly (-8%) over the last decade and has stayed in an interval between 5.8 and 4.8 L/100km NEDC (test cycle to verify the exhaust emissions after a cold start).

The explanation that could be drafted upon this curve is the **stagnation of the thermic engine performance** and the **rise of SUV sales (+373%)**. This fact could be announcing the clear turn announced by the principal motor engine constructors toward hybrid and electric engine.

Despite a car technology improvements and better engine efficiency, the fuel efficiency has stagnated around 5 L/100km for the last decade.

I. The 2020 market of gas stations in Europe

The combination of the three factors shows that fuel consumed is slightly decreasing



Over the last 10 years, the observation from the 3 factors are:



Number of cars has increased (+13%)



Distance travelled by passenger cars has still not made a significant drop (-3%)



Thermic engine efficiency stagnated around 5 NEDC L/100km.

From the combination of these three factors, a slight increase of the European fuel consumption during these last 5 years shall have been foreseen. Nevertheless, the analysis of the curve shows a **slow decrease of the global consumption of fuel (-8%)** explained by external factors (customer behavior, politics etc...)

This downward trend observed over the last five years may announce a change in the customer behavior towards fuel supply and should have an impact on the evolution of the future number of gas stations as the fuel sale is their main source of income for gas stations.

I. The 2020 market of gas stations in Europe

MHCV contribute to gas stations recurring revenues



MHCV main factors



7 000 0000



69 000 km / year



34.5 NEDC L/100km

7 million MHCV vehicles are on the European roads, with an average distance travelled of approximately **69 000 km per year**.

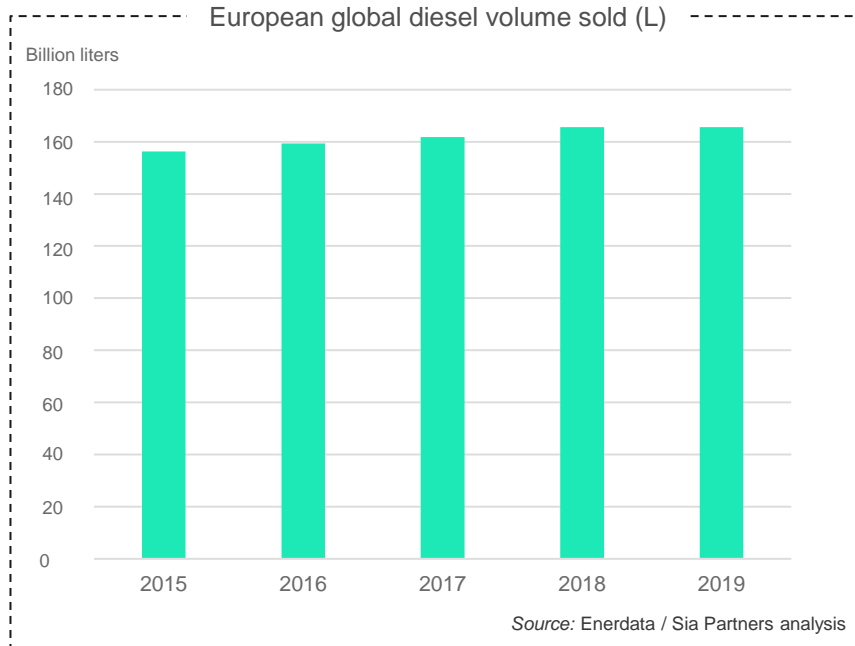
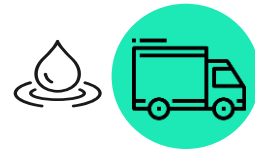
A Medium and Heavy Commercial Vehicle's fuel consumption averages 34.5 L/100km. This figure has slightly decreased since the beginning of the 21st century but seems to have reached a plateau. However, this level, more than 6 times superior to the passenger cars' one, makes the MHCV key players in the gas stations' landscape.

As this type of vehicles is mainly diesel-powered, it must be pointed out that **MHCV have significantly contributed to diesel recurring revenues for gas stations in Europe** and that their consumption evolution will largely impact the profitability of these structures.

MHCV average fuel consumption has reached a steady, standing at 34.5 NECD L/100km. This significant level reaffirms the leading market share represented by this type of vehicles for European gas stations.

I. The 2020 market of gas stations in Europe

MHCV contribute to gas stations recurring revenues



Over the last 5 years, **the number of MHCV registered in Europe increased by 6% in some countries** dominating the market, such as Poland, Germany and Italy. In parallel, the average travelled distance per year per vehicle has not experienced a major evolution, turning around 65 000 km. In the same way as for passenger cars, the thermal engine efficiency has been stable.

Thus, **the global diesel volume consumed by MHCV has been slightly on surge by 6%**, moving from 156 billion liters in 2015 to 166 billion liters in 2019.










This upward trend should be stalled and progressively reversed with the penetration of electric mobility and low carbon alternatives, underpinned by more and more demanding European legislation.

Gas stations' profitability threshold still relies mainly on fuel sales and 47% part of these sales volume is made by MHCV. Diesel sales volume will step by step be competing with low carbon alternatives and gas stations will have to adjust to this new framework.

I. The 2020 market of gas stations in Europe

Conclusion



			
	12000 km	69 000 km	7700 km
	6L/100km	35L/100km	3L/100km
 	279 million	7 million	35 million
	179 BL	166 BL	8,33 BL
	110 364 gas stations in 2020		

CL

ICE (internal combustion engines) represent **95%** of the passenger cars and LCV, with **gasoline** share at the top. These vehicles represent **51%** of the annual fuel sales volume in Europe.

ICE represent **99,7%** of the MHCV fleet, with **diesel** largely dominating in the fuel split. MHCV represent **47%** of the annual fuel sales volume in Europe.

Fuel sales volume related to motorcycles represent only **2%** of the annual fuel sales volume in Europe.

Removed from our scope due to marginal fuel sales sold for calculation concerning 2050

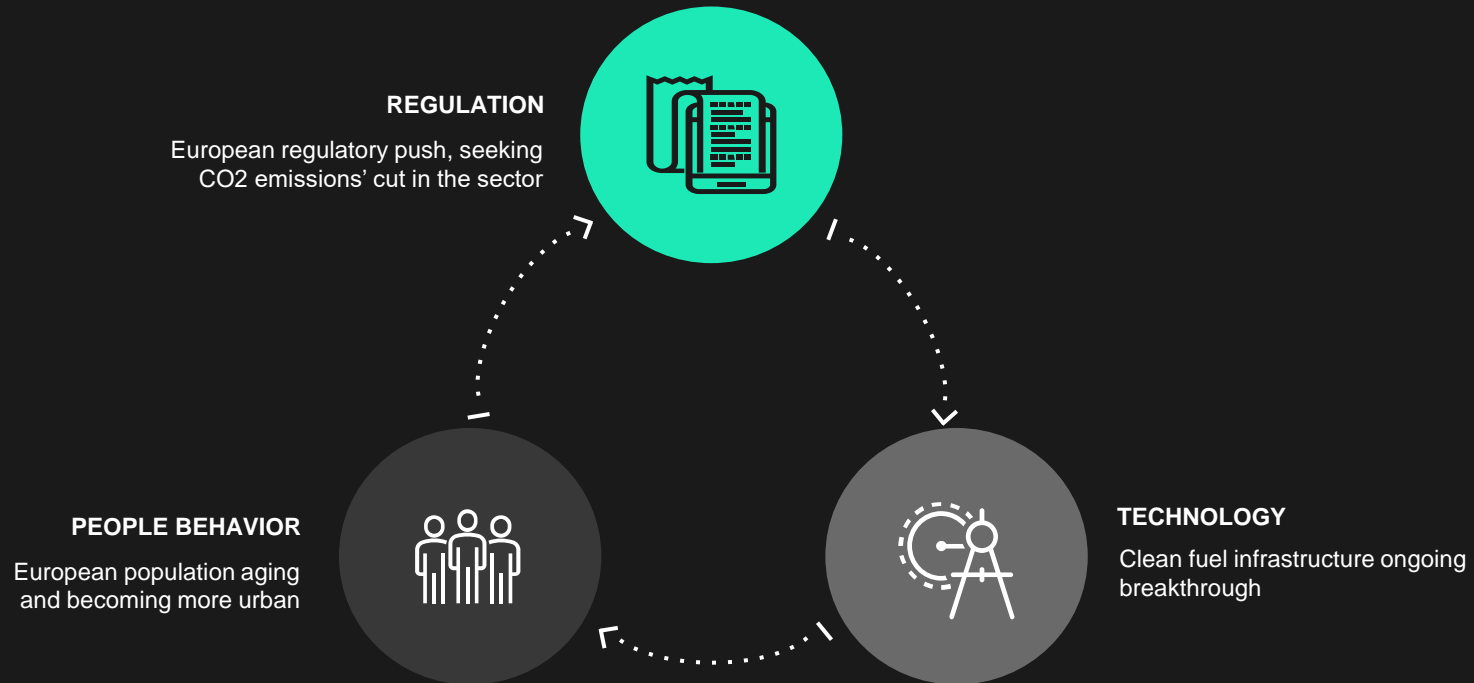


II. The trends impacting the gas stations market

II. The trends impacting the gas stations market

Introduction

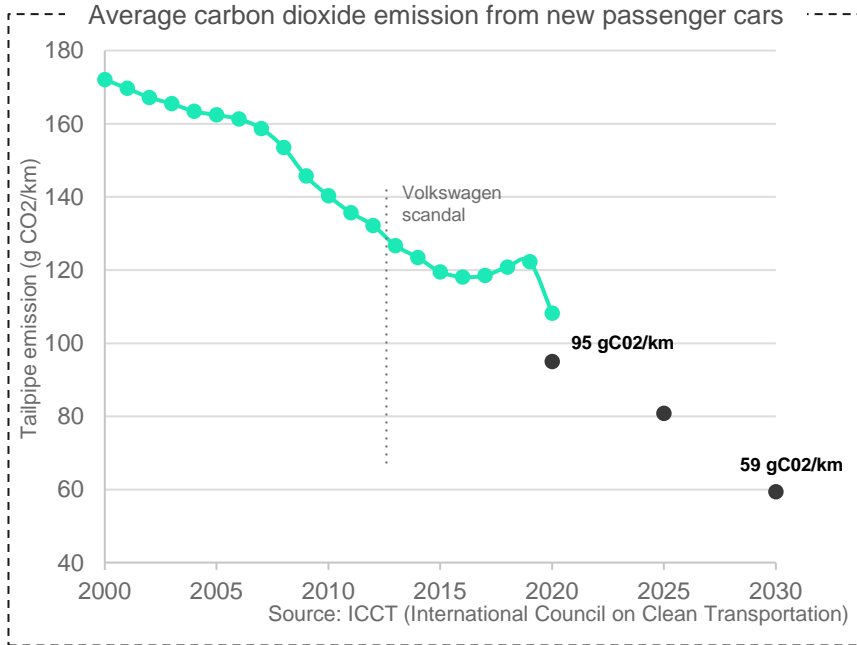
Sia Partners analysed three trends that will have a direct impact on the evolution of gas station market for the decades to come





II. The trends impacting the gas stations market

European regulatory push seeking CO₂ emissions' cut in the sector...



Regulations, defined by CAFE (Corporate Average Fuel Economy), are **set to 95 gCO₂/km in 2020 and 59 gCO₂/km in 2030** for new passenger cars sold, all manufacturers combined. For 2020, the average CO₂ emission were higher than the target.

The **EU has the strictest standard worldwide:**



95 gCO₂/km



122 gCO₂/km



125 gCO₂/km

As they represent today 25% of CO₂ emissions in the transport sector in the European Union, **MHCV have also been challenged by a European legislation**, enacted in 2019. This directive imposes these vehicles to **reduce by 30% their CO₂ emissions by 2030**.

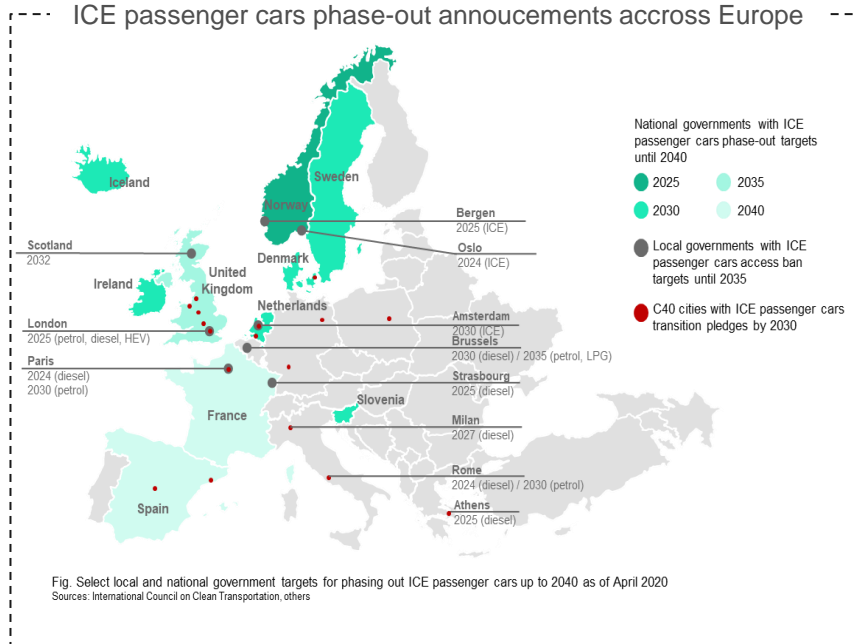
Additionally, European legislation, through the **setting-up of super-credits system** (artificially multiplying the sales of ultra-low carbon vehicles) **seeks to incentivize the uptake of zero-emission vehicles in the fleet**.

Regulations defining the CO₂ emissions for new vehicles by 2030 will lead to an increase in zero-emission vehicles sales and, therefore, will directly impact gas stations' sales fuel volume.



II. The trends impacting the gas stations market

... reinforced locally by European governments own targets



Transport is responsible for nearly 30% of the EU's total CO₂ emissions, of which 72% come from road transportation. As part of efforts to reduce CO₂ emissions, the EU has set a goal of reducing emissions from transport by 60% by 2050 compared to 1990 levels.

In addition to regulation aspect, some European countries have launched a program to phase-out ICE passenger cars. These commitments concern ICE passenger cars and LCV, which brings to light the leading role they have been playing.

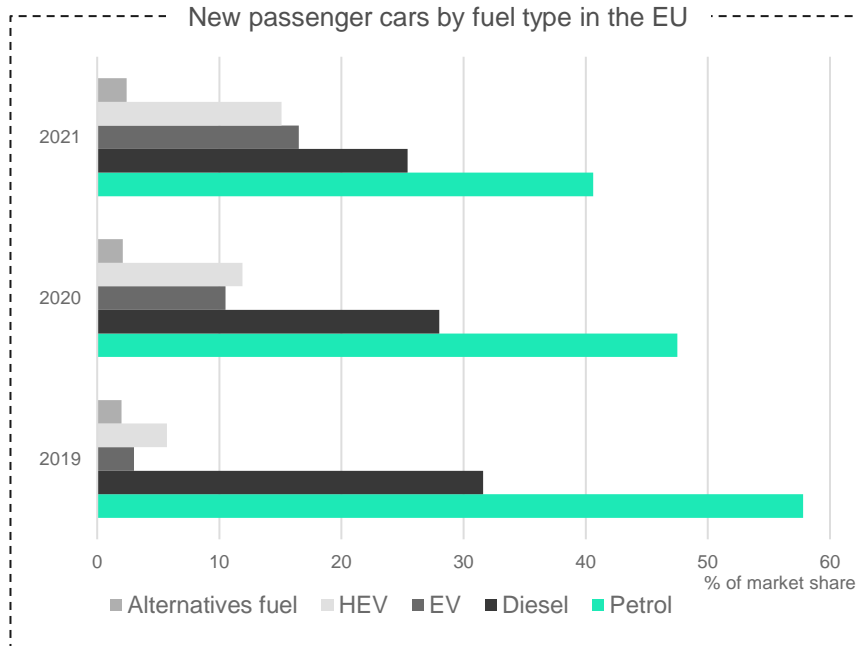
Regarding MHCV, no similar directive has been enacted. However, the major truck manufacturers declared that they would stop diesel sales by 2040.

The EU commitments are key parameters of the speed of vehicles fleet structure transformation. The EU aims to have at least 30M zero-emissions vehicles on its roads by 2030 and a large portion of European countries has declared that ICE vehicles sales would be stalled in 2030 or 2040.



II. The trends impacting the gas stations market

Market fuel share will impact the evolution of gas station



The European car fleet has rapidly moved in three years from a dominated petrol and diesel fuel technologies (90%) to a more **balanced fleet**, shared between clean technologies (HEV, hybrid electric vehicle, and EV, electric vehicle, and alternatives fuels) representing 35% and the remaining being ICE technologies.

These figures reflect the recent announcement made by car manufacturer to accelerate their production of greener cars and by side effect less traditional fuel consuming cars.

This improvement in the technology confirms the car fleet global evolution towards greener car. This trend should impact gas station as hybrid and electric drivers tend to charge their vehicle at home or at work.



II. The trends impacting the gas stations market

Fuel efficiency will impact the evolution of gas station

Fuel efficiency per type of fuel

Fuel Type	L/100km
ICE	5,3
HEV	4,6
PHEV	1,3
EV	0

Source: Renault

This clean engine has known numerous evolution from the first hybrid vehicle commercial success designed by Toyota to the full electric vehicle with long range battery commercialized by Tesla.

As we can notice on the table, **fuel efficiency of clean fuel technologies allows now a fuel economy of 10% for HEV to 75% for PHEV** (partial hybrid electric vehicle).

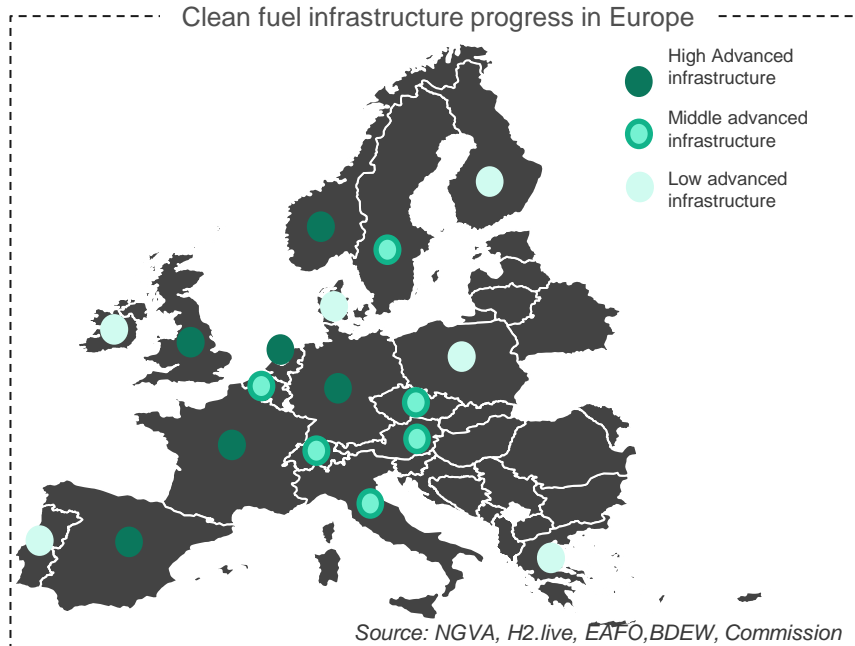
This fuel economy should disrupt the historical gas station business plan based on petrol and diesel sale.

As electric and hybrid vehicle are increasing their shares in the global European car fleet, the fuel efficiency will experience a clear improvement due to the engine technology change.



II. The trends impacting the gas stations market

Clean fuel infrastructure will impact the evolution of gas station



As the number of greener cars is rapidly increasing, some countries has taken a step ahead by developing infrastructures to welcome the new type of cars while other countries tend to wait for their citizens to take the green vehicle turn.

Highly advanced infrastructure countries investing in different kind of infrastructures:

- Public electric vehicle (PEV) charging points
- GNC/LNG stations
- H2 stations



Medium advanced infrastructure countries have begun to develop their network with less infrastructure volume than some of their counterpart.



Weakly advanced infrastructure countries have adopted a different strategy by developing only some charging technologies, and mostly PEV charging point networks.

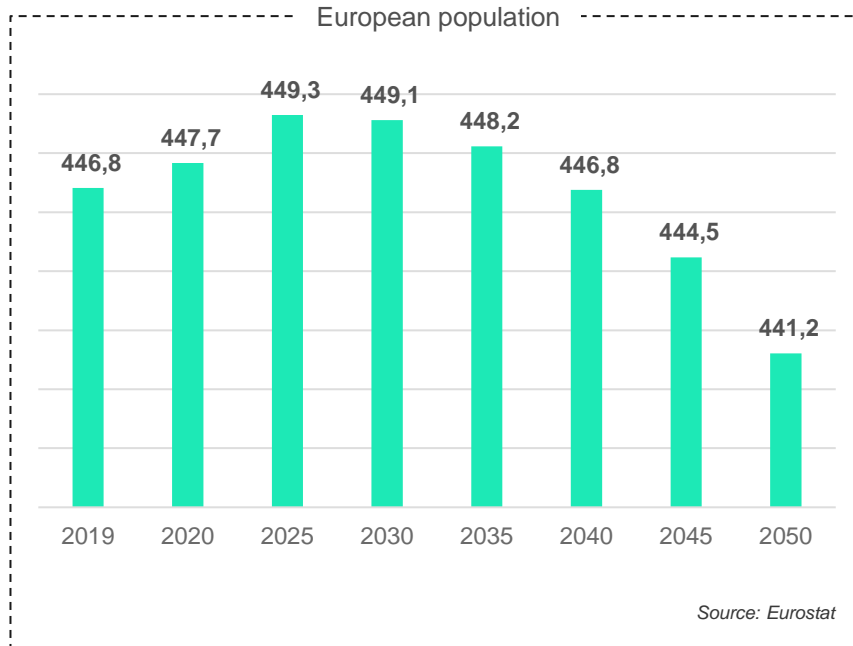


Infrastructure will play decisive role in the coming gas station transformation as new fueling technologies may be one of the solution to balance the petrol and diesel decrease. However, some European countries are currently more advanced than others.



II. The trends impacting the gas stations market

The European population will decrease over 2050...



The European population (excluding UK) is projected to increase from 447,7 million in 2020 and peak to 449.3 million in 2026 (+0.4 %), then gradually decrease to 441.2 million in 2050, thus with an overall decrease of 6,5 million (-1,5 %).

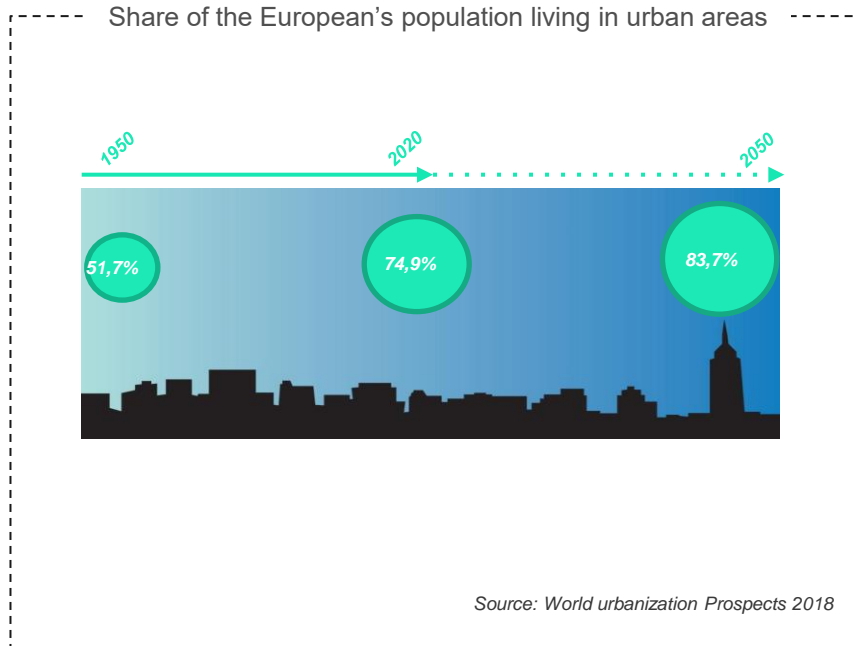
Also, europeans are living longer than ever before and the age profile of society is rapidly developing. **The EU-27's median age is projected to increase by 4.5 years during the next three decades**, to reach 48.2 years by 2050. The population of 65 years or more will increase significantly, rising from 90.5 million at the start of 2019 to reach 129.8 million by 2050.

In 2050, the European population will decline to 441 million (-1,5% compare to 2020), with a median age projected to reach 48,2 years (+4,5 years compare to 2020)



II. The trends impacting the gas stations market

... while urbanization will continue to grow



The European population is projected to increase from **74,9% in 2020 to 83,7% in 2050**. With the development of urban transport in most European cities, the metro, tram and buses become more efficient and effective and is an alternative to using the car.

Additionally with **the population become more aware of the environmental impact of ICE vehicles**, 62% of the European population are becoming ready to change for an electric car (EV-BEV-PHEV).

Source: study carried out by EVBox in partnership with Ipsos

83,7% of the European population will live in urban areas (+8,8% compare to 2020). Along this trend, the population will become more aware of the environmental impact of the internal combustion engine.

II. The trends impacting the gas stations market

Conclusion



REGULATION

The EU commitments are key parameters of the speed of vehicles fleet structure transformation. The European Union aims to have at least 30M zero-emissions vehicles on its roads by 2030 and a large portion of European countries has declared that ICE vehicles sales would be stalled between 2030 and 2040.



TECHNOLOGY

With passenger car sales becoming more balanced with the apparition of greener car, Infrastructure will play decisive role in the coming gas station transformation as new fueling technologies (mainly electric charging points) may be one of the solution to balance the petrol and diesel decrease. However, some European countries are currently more advanced than others



PEOPLE BEHAVIOR

In 2050, the European population will decline to 441 million (-1,5% compare to 2020), with a median age projected to reach 48,2 years (+4,5 years compare to 2020). It will also become more urban.

Along this trend, the population will become more aware of the environmental impact of the internal combustion engine.



III. The gas stations market in 2050

III. The gas stations market in 2050

Introduction

Based on the 3 trends analysed in part II, Sia Partner has estimated the three main factors at horizon 2050 in order to estimate the global fuel consumption:



Vehicle fleet



Average distance travelled



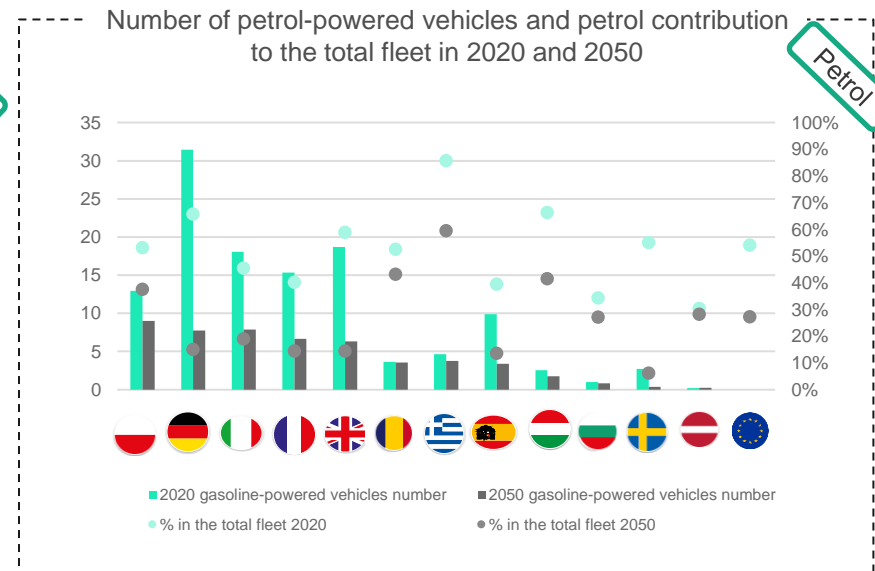
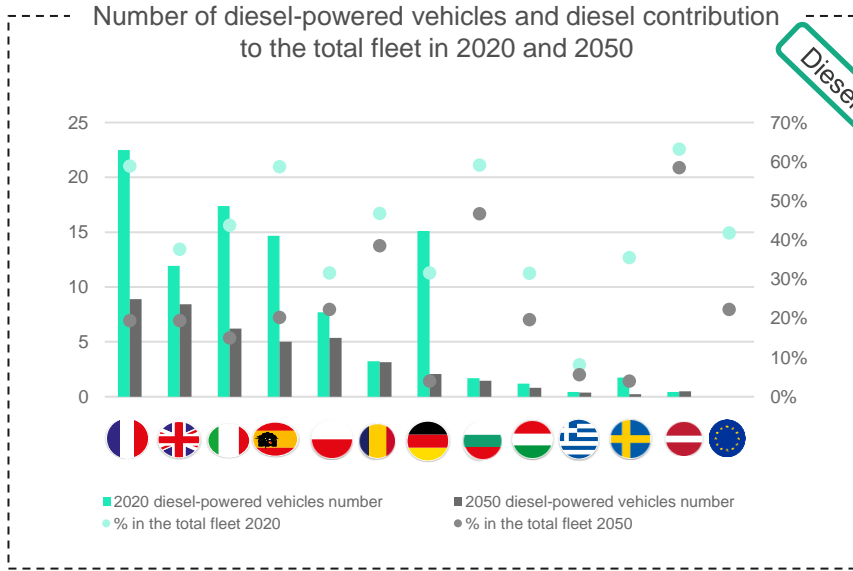
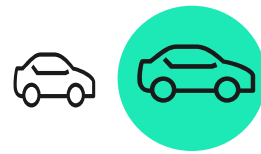
Engine fuel efficiency



Global fuel consumption

III. The gas stations market in 2050

ICE vehicles will only represent around one-third of the passenger cars fleet by 2050

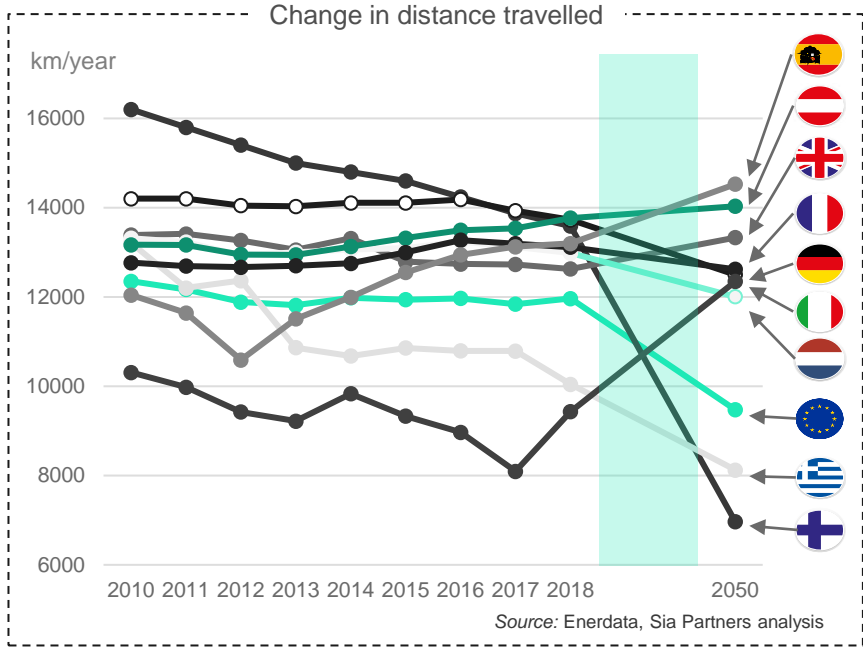


The European regulation has focused on transport sector's decarbonization, with decisions supposed to encourage low-emissions vehicles. This shift will be driven by some countries, such as Germany and Italy, characterized by large impactful fleets in both petrol and diesel-powered vehicles, along with strong government policies.

European gas stations will be impacted by the evolution of the ICE passenger cars fleet structure which will fall from 98% in 2020 to 37% by 2050, mainly due to the end of the ICE vehicles era in Western Europe.

III. The gas stations market in 2050

A continuous decrease in distance travelled by car



Source: Enerdata, Sia Partners analysis

With the development of public transport infrastructure along with population behavior change, **the decrease in distance travelled by car**, observed between 2000 and 2018, will continue and **reach around 9500 km/year for the European Union in 2050**.

However, **large discrepancy of the average annual distance travelled by car is observed between countries:**

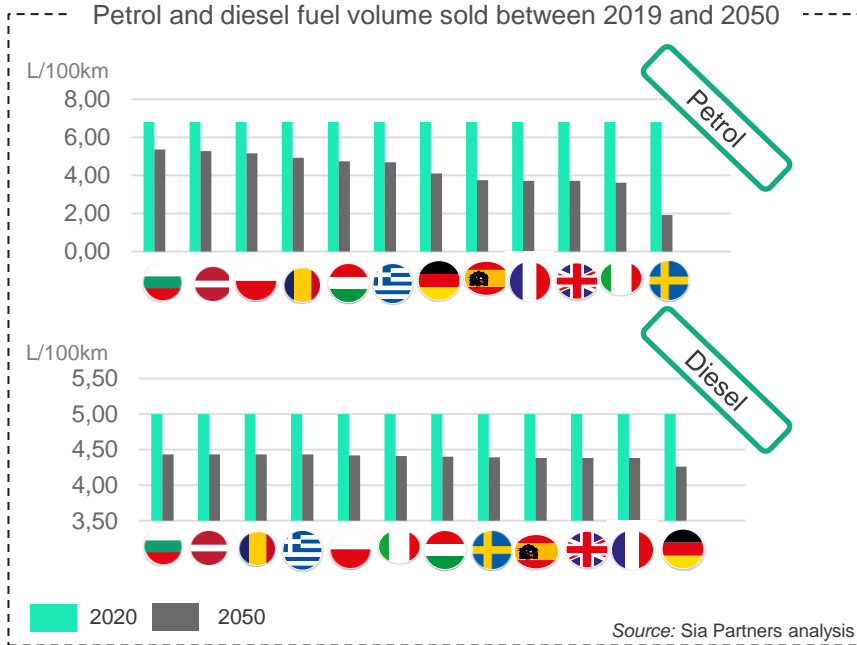
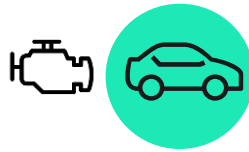
7 000km/year 14 500 km/year

This study will take into account the discrepancy for the countries selected on the graphic, and the average European Union distance travelled by car for the remaining European countries

Gas stations in the European Union will be impacted by the decrease in distance travelled by car. Depending on the country, the impact will be more significant.

III. The gas stations market in 2050

Average fuel consumption will decrease due to fleet evolution



As of today, relying on ADEME (French ecological transition agency) data, the average petrol and diesel consumption levels are respectively standing at 6.8 and 5.0 L/100km. **The engines efficiency would have a reach a steady state and this parameter should not be subject to significant evolution in the coming decades.**

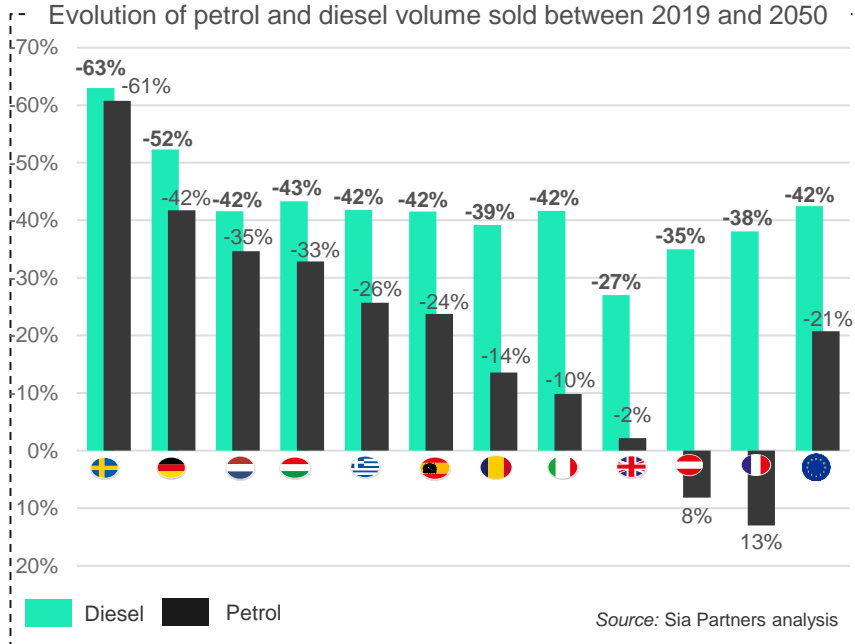
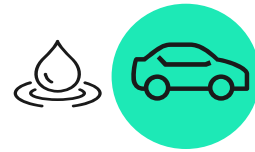
However, as **hybrids will grow** in the European fleet, **average fuel consumption level will be pushed down.**

Thus, the only way to support the decrease of passenger cars' average fuel consumption is to **foster the large-scale roll-out of EV.**



The average consumption (L/100km) will be curbed by the increase of hybrid cars. As Western European countries will be seeking to develop their low carbon mobility, this trend will more pronounced.

III. The gas stations market in 2050

A global decrease of the fuel sold with disparities between countries



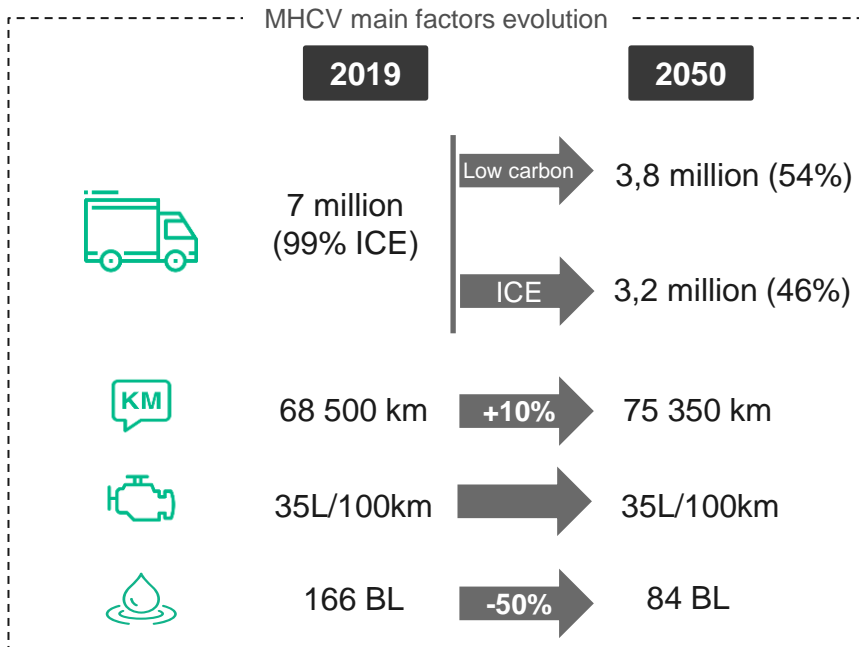
The overall volume sold per year in 2050 will largely fall (-36%). Diesel volume should suffer the biggest fall (-58%), while petrol volume should decrease less (-21%). As hybrid engine will still represent a large part of the vehicle fleet (20%) and will consume mainly petrol, the volume is less impacted than diesel.

-  **Certain countries will experience a massive fall in their volume** sold as their turn to clean energy is the most advanced (change of their car fleet, ICE banishment, clean energy legislations).
-  **The other countries will see their volume sold decrease** as their level of technology turn will still be in progress compare to the EU leaders
-  **Finally some countries will maintain or increase their petrol volume sold** as a switch from diesel car fleet towards HEV (petrol consumption) is foreseen.

Due to stricter legislation and the will of car manufacturer to stop selling diesel engine, diesel should progressively disappear from gas station. Petrol will be less impacted, helped by the rise of hybrid vehicles.

III. The gas stations market in 2050

For MHCV, a fuel volume sold cut in half



As stated previously, the MHCV are mostly powered by diesel engine in 2019. An alliance consisting of Europe's largest truckmakers has pledged to end the sale of diesel-powered vehicles by 2040. **Based on Sia partners analysis, MHCV will only represent 46% of the fleet in 2050.**

Sia Partners expect **the average distance travelled to increase by 10%, with no main fuel efficiency improvement.**

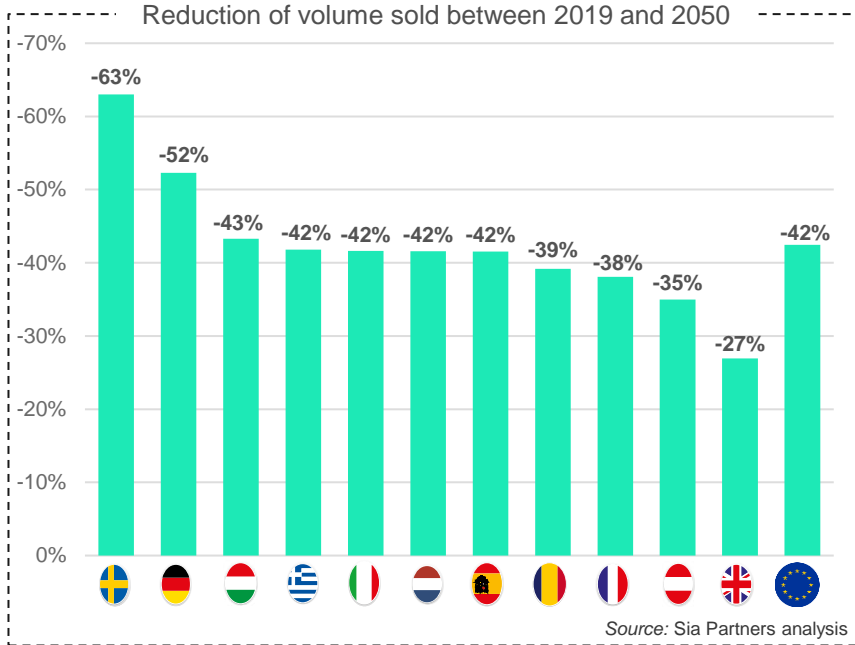
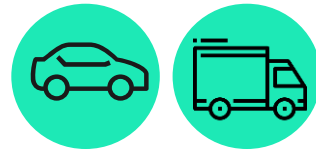
With these 3 factors, **the global volume sold will decrease from 166 billion liters to 84 billion liters by 2050.**

While the global volume sold for MHCV represented almost half of the overall gas stations sales in 2019 (166 billion liters), it will be cut in half by 2050 (84 billions liters)

III. The gas stations market in 2050





By 2050, an important fall of fuel volume sold



Taking into account the passenger cars, LCV and MHCV, the **European volume sold in 2050 will decrease by 42%**.

Sweden and Germany will undergo the highest fall in fuel volume sold explained by a modernization of their fleet, a change in the transport behavior and a transition towards EV and HEV .

 **-63%**  **-52%**

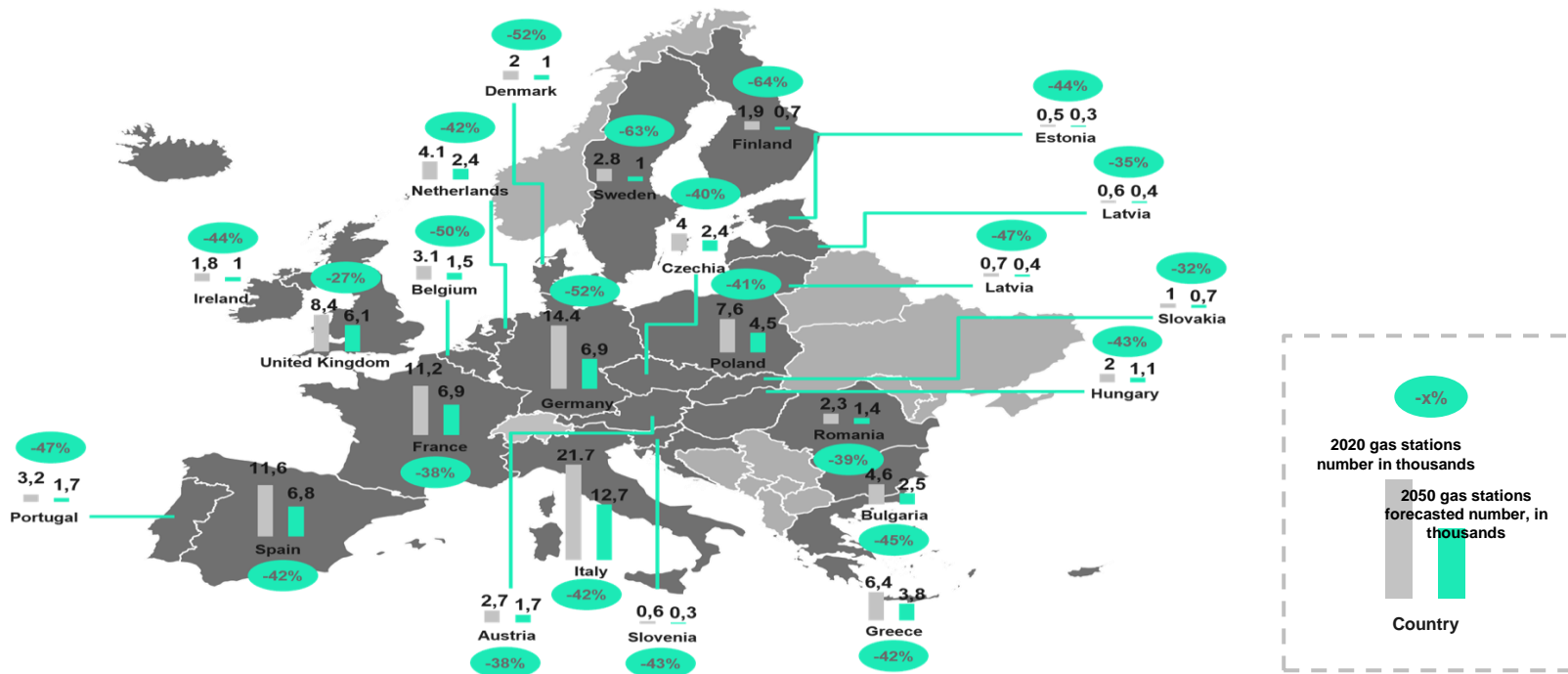
Other European countries will follow a similar but slower path, due to different combined factors such as a younger average age of the vehicle fleet, slower development of clean fuel infrastructure and less stringent energy regulations.

In 2050, Europe gas stations will sell almost half of the volume sold in 2019. Despite some disparities between European countries, the majority of them will experience a fall in their fuel volume sold.



III. The gas stations market in 2050

European gas stations will fall by 43% between 2020 and 2050



In Europe, gas stations will fall by 43% between 2020 and 2050. Nordic countries will experience the highest decrease, while, on the contrary, the United Kingdom the lowest.

III. The gas stations market in 2050

Conclusion

During the next decades, the European gas stations market will be deeply challenged and upended by vehicle fleets transformation.

By 2050, low carbon solutions will prevail, tightening fuel sales volume.

As a result, the volume of gas stations will fall by 43% in Europe

Only those which reinvent themselves and become customer-centric will survive.



IV. The transformations needed in order to survive

IV. The transformations needed in order to survive

Introduction

In order to survive, 4 main levers can be foreseen for a transformation:



Offer diversification



Client experience



Additional revenue



Cost cutting

IV. The transformations needed in order to survive

Introduction

As transformation will depend on the number of gas stations impact, our study will separate countries in 2 blocks:

HIC case

Countries with high impact of the energy transition on the fuel distribution sector (HIC)



Gas stations decreased by 50% or more

MIC case

Countries with moderate impact of the energy transition on the fuel distribution sector (MIC)



Other European countries

Gas stations decreased by less than 50%



IV. The transformations needed in order to survive

Changes impact gas stations based on their locations



RURAL GAS STATION

- Most impacted by the decrease in gas stations due to low volume sold (low demography)
- Remain vehicle-centric as customers need only fueling services
- Municipalities will look to set-up their own gas station in order to keep their residents despite a probable loss in revenue of the gas stations



URBAN GAS STATION

- Impacted by the decrease in gas stations due to the emergence of low emission zones in cities
- Become customer-centric and develop varied services offer to subsist (grocery store, newspaper, coffee, parcel deposit)
- Stations near supermarkets located in the suburbs will be able to survive



HIGHWAY GAS STATION

- Less impacted by decrease in gas stations due to their high fuel volume sold
- Already customer-centric, these stations will need to continue their transformation. Offer development of increasing varied services
- High fuel volume sold

Depending on their location, gas stations will evolve differently based on their customer needs. Highway gas stations are more likely to withstand, followed by urban gas stations.



IV. The transformations needed in order to survive

Offer diversification

MIC



Petrol as the main offer

The gas stations will still keep an important part of their revenues on petrol (including biofuel) sales, along with a breakthrough of electric charging point. Nevertheless, their diesel revenues should decrease, and become unviable economically.



Continuity in petrol distribution



End of diesel distribution – relocation of the dedicated tanks and pumps to petrol / biofuel



Biofuel distribution



EV/HEV charging point



Additional for HIC



Strong offer diversification

Gas stations will have to offer a wider range energy of sources, which will require adjusting their real estate arrangements (tanks, batteries, pumps, etc.)



EV/HEV charging point



CNG/LNG charging point



Hydrogen charging point



Biofuel distribution

In Europe, a transition phase will be observed with a hybrid cars transition phase prior to a complete switch to electric cars. This transition phase will be reduced in the HIC countries.



IV. The transformations needed in order to survive

Client experience

MIC



Consolidation of the existing services

Existing services, excluding fuel, will constitute the major challenge as it will be the main gas station source of revenue at the 2050 horizon.



Advertising



Food retail, restaurants, and cafés.



Dedicated spaces for rest (MHCV clients)



Car wash and maintenance services

New services linked to digital will be associated to the gas stations but will not be the main factor compare to the HIC case



Additional for HIC



New services to retain customers

New technologies will be the differentiator factors that will allow the gas stations to retain their customers



Payment Made Easy: All-in-One Electronic Payment Process allowing customers to control their experiences “at the pump” through their smartphones (preparing refueling, shopping, or even coffee pre-orders - and access better personalized prices).



Behavioral analysis for personalized marketing and service level: predictive customer behavior, tailored services, loyalty programs and targeted promotions.

While the gas station will mainly consolidate their existing services in the MIC countries, new services linked to digital will need to be deployed in the HIC countries.



IV. The transformations needed in order to survive

Additional revenue

MIC



Partnership with diversified actors

As the customer behaviour evolves, partnership between gas stations and external partners will be more and more decisive for the gas station additional revenues.



EV/HEV charging stations



Food retail, restaurants, and cafes.



Pick-up parcels point / Click&collect lockers



Co-working spaces



Children play areas



Long distance bus



Additional for HIC



Personalized approach

Similar to low-cost airlines, the gas station will introduce to their customer additional paying services that will allow them to gain time.



Priority customers fast lane for fuelling or EV charging



Membership cards including cash-back / discounts



Drive-through services for retail



Mobile payment

Additional revenue will be seen through partnership with different actors, but also with more personalized target approach for their customer in the “significant change” countries.



IV. The transformations needed in order to survive

Cost cutting

MIC



Petrol as the main offer

With more and more self-service functionalities (pump services, coffee machine, automatic pay machine, car wash), the business model that used to exist in gas stations should experience drastic cost cuttings.

Short term



Reducing the labor force due to automating / digitalization



Automating and digitalization of services at the fuel pump



Effective inventory management

Long term



Solar panel for autonomous energy supply of the gas station



Partnerships to reduce R&D and/or operational cost



End of Diesel infrastructure / relocation to petrol / biofuel

Additional for HIC

Due to the need of strong diversification of the energy supply for this case, gas stations will not be able to even more cut their operating cost compare to MIC case.

Cost cutting will continue to be deployed in gas stations with short and long term solutions that can be relevant in either MIC or HIC case.

IV. The transformations needed in order to survive

Become customer focused (1/2)

BECOME CUSTOMER FOCUSED

Shift of focus from the vehicle to the customer in order to unlock new business models and revenue streams

1.

IMPROVE IMAGE AND BRAND



By improving your image and brand, customers will more likely choose your gas stations (corporate culture, green image, active social media presence, ...)

2.

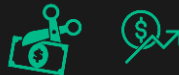
DIVERSIFICATION OF ENERGY SUPPLY



Offer a wider range of energy sources and adapt the infrastructures to the shifting fuel demand (Electricity, Hydrogen, GNC/LNG, ...)

3.

CREATE PARTNERSHIPS



New partnerships for emerging opportunities (examples: charging infrastructure supplier, supermarkets for retail, restaurants or parcel delivery companies, etc...)

4.

SERVICES LINKED TO DIGITAL



Augmented services linked to a digital relation between cars and gas station.

IV. The transformations needed in order to survive

Become customer focused (2/2)

BECOME CUSTOMER FOCUSED

Shift of focus from the vehicle to the customer in order to unlock new business models and revenue streams

5.

PREMIUM SERVICES



Target a personalized approach for your premium customers (dedicated « fast track » filling lane, concierge, membership card offering reductions in retail stores, restaurants, etc...)

6.

ADJACENT SERVICES



Create adjacent services (car wash and repair, Co-working spaces, Pharmacy, Child play areas, etc...)

7.

MOBILITY



Create mobility hub (ride sharing, bikes, ...)

8.

RETAIL



Improve your retail (restaurants, cafes, stores, outlets)



Conclusion

Conclusion

In a mutating and declining sector, becoming customer-centric remains the only strategy

- 36%

By 2050, **the fuel volume sold per year will fall by 36%, with diesel falling by 58% and petrol by 21%**. As hybrid engine will still represent a large part of the vehicle fleet (20%) and will consume mainly petrol, the petrol volume will be less impacted than diesel. However, **disparities will be observed within countries** as the Nordics States, Germany, Netherlands and Belgium will experience a massive fall in their volume, compared to others European countries.

- 43%

Based on Sia Partners analysis, **European gas stations will fall by 43%, to 68 500 units in 2050**. This decline is related to a decrease in the average fuel consumption, the passenger car fleet transformation, as ICE vehicles will only represent one-third of the passenger car fleet, and a continuous decrease in distance travelled by car. For Heavy vehicles, global consumption of oil will be cut by half.

Depending on their location, **gas stations will follow different evolutions, based on their customer needs**. Due to their high volume of sales and client traffic, **highway gas stations are more likely to withstand, followed with urban gas stations. On the contrary, rural gas stations are at risk**.



To survive, European gas stations will have to develop **four levers: offer diversification**, such as a diversification of the sources of energy sold, **customer experience** like premium and digital services, **additional revenue** via retail activities or enhancement of mobility hubs, and **cost cutting** in the form of strategic partnerships.



Appendix Country profiles



FINLAND



Major regulatory influence and policy targets:

Denmark to ban on the sale of ICE vehicles by 2030.



Technologies:

Weakly advanced infrastructure green car charging/fueling network already available in 2020.

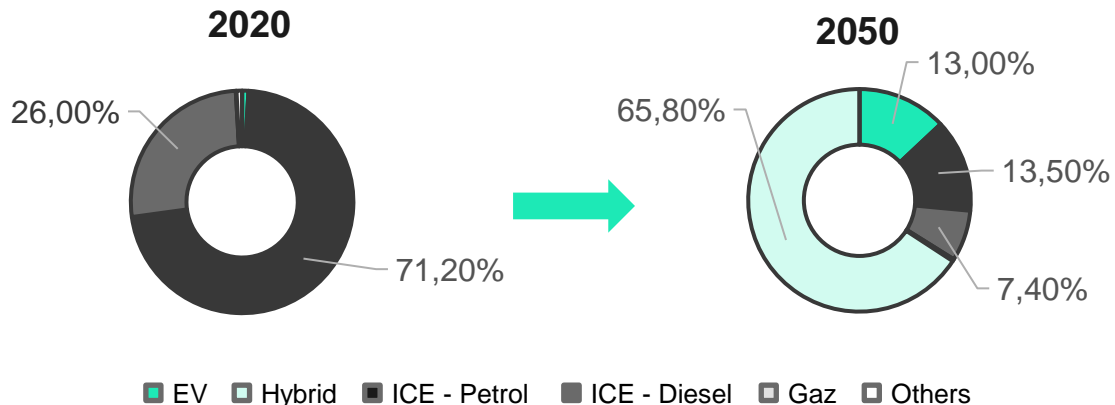


Population evolution:

French population will increase from 5,6 million to 5,9 million in 2050, along with an urbanization of the population from 85,5% to 90,0%.

Source: United nations – World urbanization prospects

Passenger car fleet by fuel type



Passenger car fleet
3,5 Million

Passenger car fleet
3,8 Million

Average consumption (L/100km)



- 64%

Petrol stations in 2050 compare to 2020



SWEDEN



Major regulatory influence and policy targets:

By 2030, sales of petrol or diesel cars will no longer be possible.



Technologies:

Nearly 10 000 publicly available electric vehicles have been installed in the country, which ranks Sweden 12th worldwide.

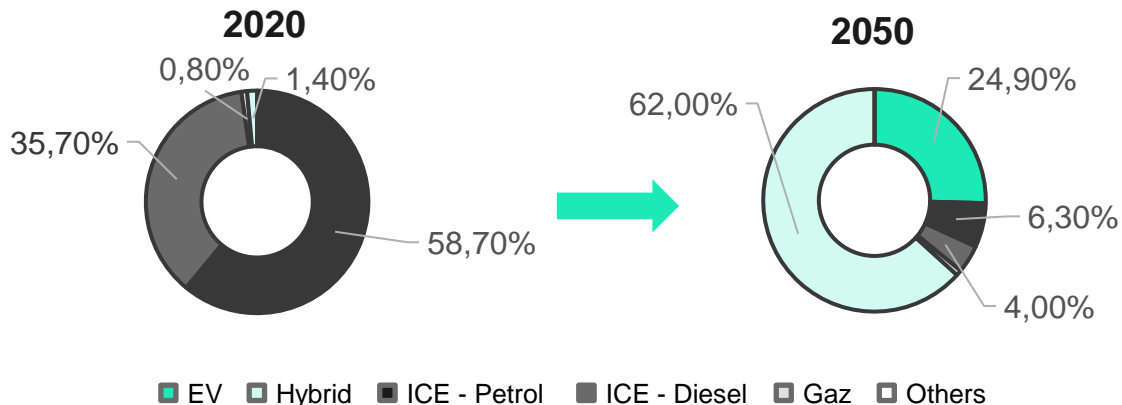


Population evolution:

Swedish population will rise from 10 million to 11.6 million in 2050, along with an urban population moving from 8.9 million to 10.8 million.

Source: United nations – World urbanization prospects

Passenger car fleet by fuel type



Passenger car fleet
4,9 Million

Passenger car fleet
5,7 Million

Average consumption (L/100km)



- 63%

Petrol stations in 2050 compare to 2020



DENMARK



Major regulatory influence and policy targets:

Denmark to ban on the sale of ICE vehicles by 2030.



Technologies:

Weakly advanced infrastructure green car charging/fueling network already available in 2020.

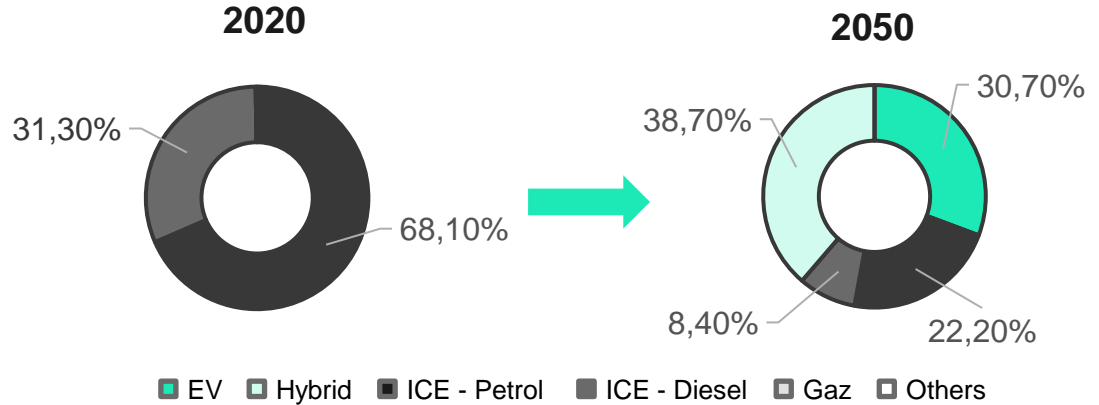


Population evolution:

French population will increase from 5,8 million to 6,3 million in 2050, along with an urbanization of the population from 88,1% to 92,3%.

Source: United nations – World urbanization prospects

Passenger car fleet by fuel type



Passenger car fleet
2,7 Million

Passenger car fleet
3,4 Million

Average consumption (L/100km)

Diesel 5,0 → -12% → 4,4

Petrol 6,8 → -49% → 3,5

The significant decrease in petrol average consumption is explained by the change in passenger car fleet with 49% becoming Hybrid.

- 52%

Petrol stations in 2050 compare to 2020



GERMANY



Major regulatory influence and policy targets:

The German government aims to ban sales of fossil fuel-powered cars by 2030



Technologies:

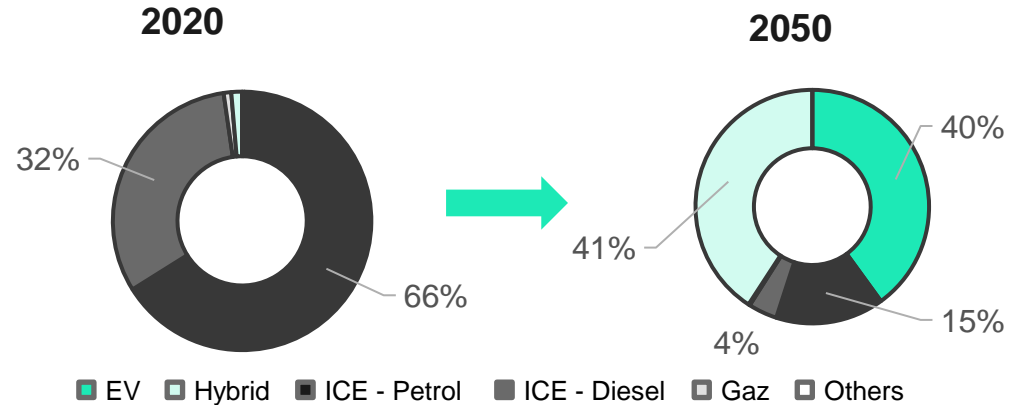
Highly advanced infrastructure green car charging/fueling network already available



Population evolution:

German population will decrease from 82,5 million to 79,2 million in 2050, along with an increase of urbanization of the population from 77,5 % to 84,3 %.

Passenger car fleet by fuel type



Passenger car fleet
47,8 Million

Passenger car fleet
51,5 Million

Average consumption (L/100km)

Diesel 5,0 → -15% → 4,3

Petrol 6,8 → -40% → 4,1

The significant decrease in petrol average consumption is explained by the change in passenger car fleet with 81% powered by electric engine (hybrid/EV)

- 52%

Petrol stations in 2050 compare to 2020



BELGIUM

Major regulatory influence and policy targets:

No planned ban on ICE vehicles sales yet but Brussels announced ban on ICE vehicles sales in 2030 (diesel) and 2035 (petrol).



Technologies:

Weakly advanced infrastructure green car charging/fueling network already available in 2020.



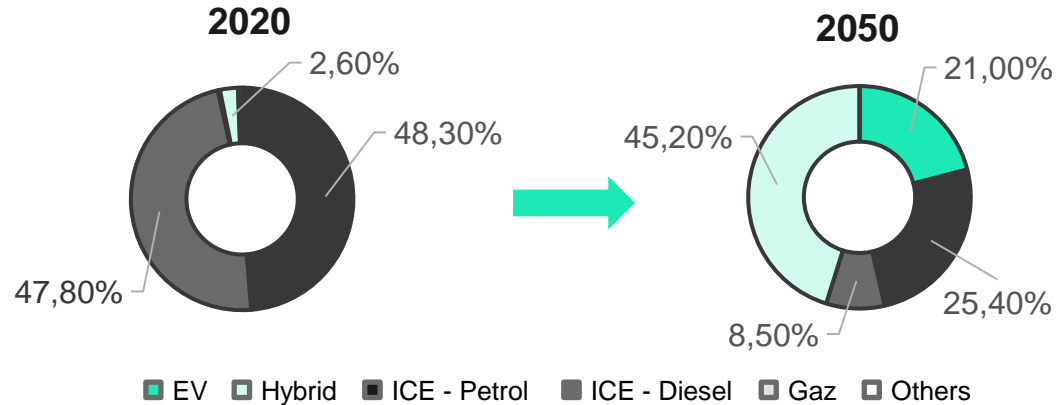
Population evolution:

French population will increase from 11,6 million to 12,5 million in 2050, along with an urbanization of the population from 98,1% to 98,9%.



Source: United nations – World urbanization prospects

Passenger car fleet by fuel type



Passenger car fleet
5,9 Million

Passenger car fleet
7,2 Million

Average consumption (L/100km)

Diesel

5,0



4,3

The significant decrease in petrol average consumption is explained by the change in passenger car fleet with 45% becoming Hybrid.

Petrol

6,8



4,0

- 50%

Petrol stations in 2050 compare
to 2020



PORTUGAL



Major regulatory influence and policy targets:
The country recently proposed to ban on diesel and petrol cars by 2035.



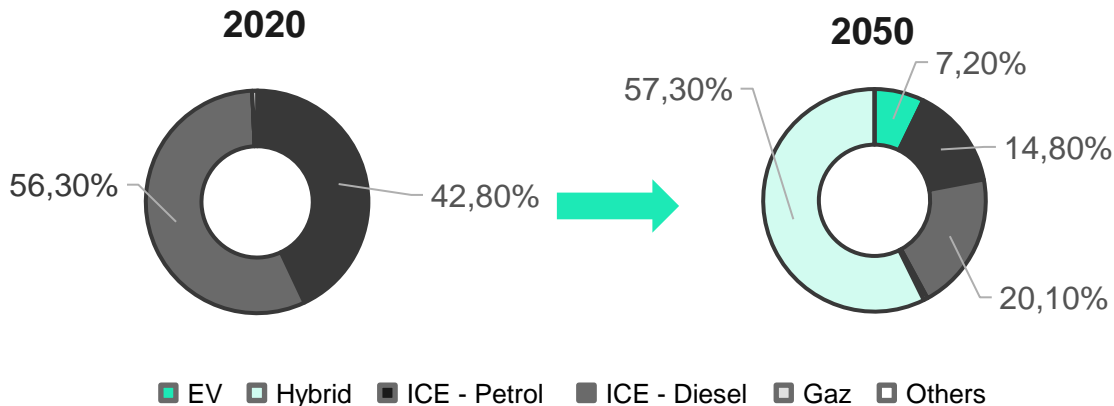
Technologies:
Portugal has about 5000 chargers for electric vehicles.



Population evolution:
Portuguese population will decrease from 10 million to 9 million in 2050, along with an urban population moving from 6,8 million to 7,1 million.

Source: United nations – World urbanization prospects

Passenger car fleet by fuel type



Passenger car fleet
5,5 Million

Passenger car fleet
5,7 Million

Average consumption (L/100km)



- 47%

Petrol stations in 2050 compare
to 2020



IRELAND



Major regulatory influence and policy targets:

Ireland to ban on the sale of ICE vehicles by 2030.



Technologies:

Weakly advanced infrastructure green car charging/fueling network already available in 2020.

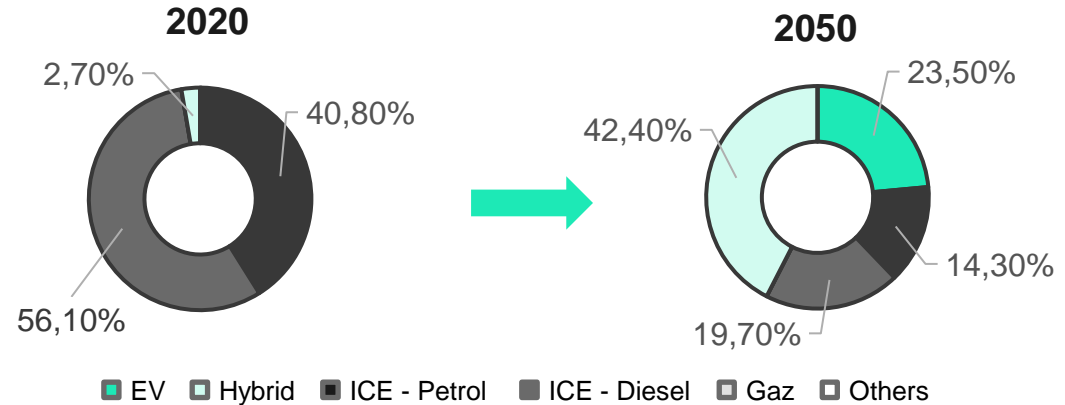


Population evolution:

French population will increase from 4,9 million to 5,9 million in 2050, along with an urbanization of the population from 63,7% to 75,1%.

Source: United nations – World urbanization prospects

Passenger car fleet by fuel type



Passenger car fleet
2,3 Million

Passenger car fleet
2,9 Million

Average consumption (L/100km)

Diesel 5,0 → -12% → 4,4

Petrol 6,8 → -44% → 3,8

The significant decrease in petrol average consumption is explained by the change in passenger car fleet with 42% becoming Hybrid.

- 44%

Petrol stations in 2050 compare to 2020



ITALY

Major regulatory influence and policy targets:



DAFI (Directive Alternative Fuel Initiative) has been launched in 2016 to deploy alternative to fuel infrastructure, to convert national fleet to a greener fleet ...

Technologies:



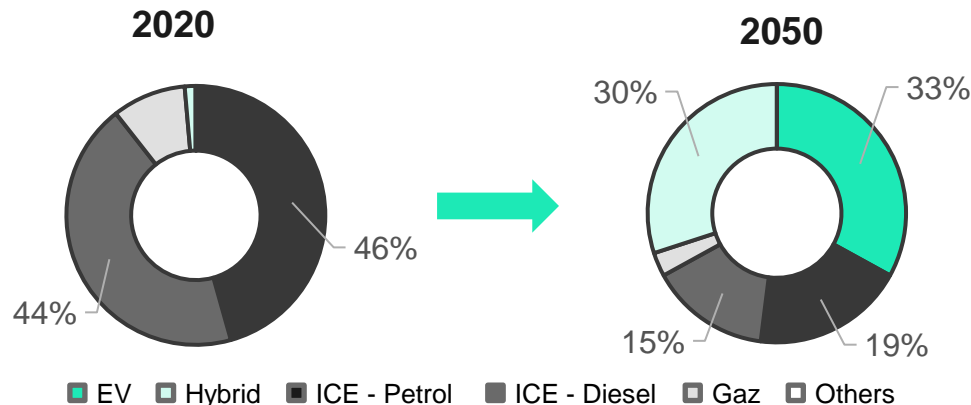
Medium advanced infrastructure green car charging/fueling network already available

Population evolution:



Italian population will decrease from 59,1 million to 55,1 million in 2050, along with an increase of urbanization of the population from 71% to 81,1%.

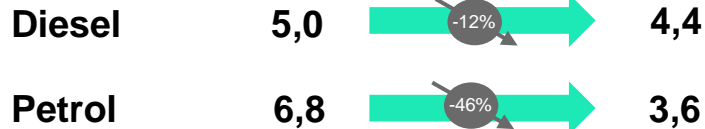
Passenger car fleet by fuel type



Passenger car fleet
39,7 Million

Passenger car fleet
41,3 Million

Average consumption (L/100km)



The significant decrease in petrol average consumption is explained by the change in passenger car fleet with 63% powered by electric engine (hybrid/EV)

- 42%

Petrol stations in 2050 compare to 2020



GREECE



Major regulatory influence and policy targets:

No planned ban on ICE vehicles sales yet



Technologies:

Weakly advanced infrastructure green car charging/fueling network already available in 2020.

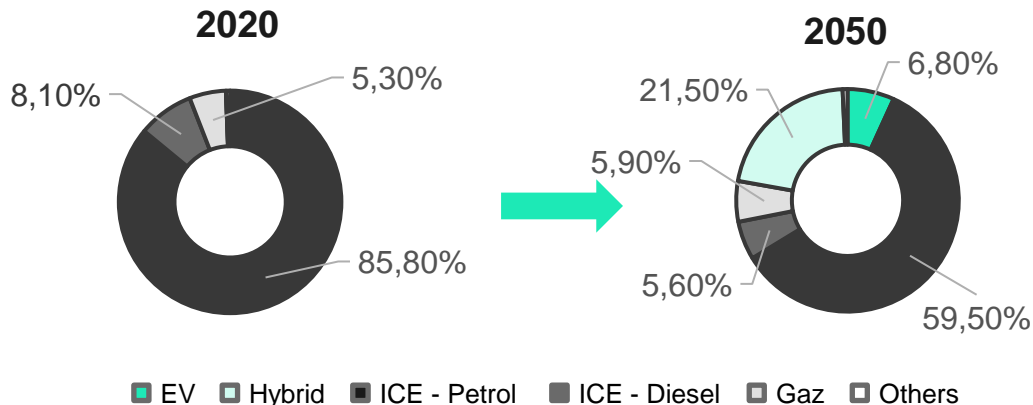


Population evolution:

Greece population will increase from 11,1 million to 10,0 million in 2050, along with an urbanization of the population from 79,7% to 87,7%.

Source: United nations – World urbanization prospects

Passenger car fleet by fuel type



Passenger car fleet
5,4 Million

Passenger car fleet
6,3 Million

Average consumption (L/100km)



- 42%

Petrol stations in 2050 compare to 2020



SPAIN



Major regulatory influence and policy targets:

Sale of ICE passenger car vehicles forbidden by 2040.



Technologies:

Spain has more than 10 000 publicly available electric vehicles chargers in 2020, which ranks the country 13th worldwide.

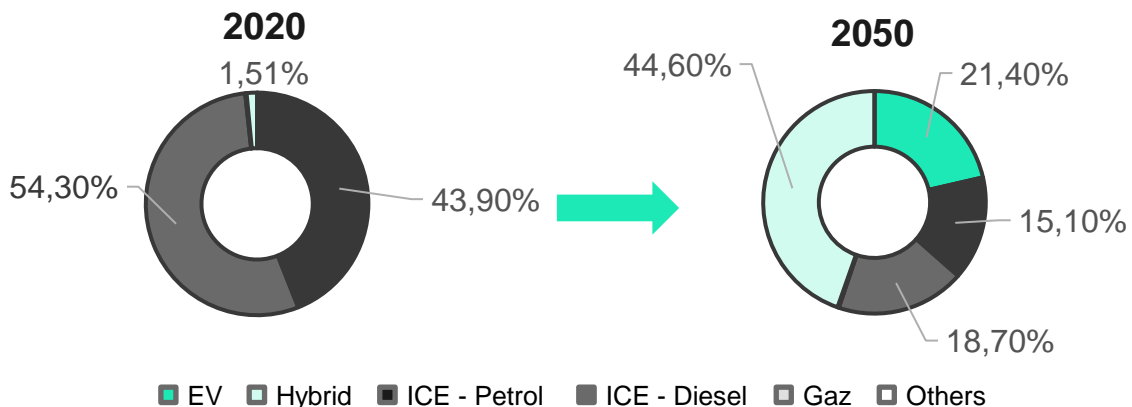


Population evolution:

Spanish population will decrease from 46,6 million to 44,4 million in 2050, along with an urban population moving from 37,5 million to 39 million.

Source: United nations – World urbanization prospects

Passenger car fleet by fuel type



Passenger car fleet
24,9 Million

Passenger car fleet
24,7 Million

Average consumption (L/100km)

Diesel

5,0



4,4

Petrol

6,8



3,7

The significant decrease in petrol average consumption is explained by the change in passenger car fleet with close to 45% becoming Hybrid.

- 42%

Petrol stations in 2050 compare to 2020



FRANCE



Major regulatory influence and policy targets:

The French government's new law on mobility will uphold a planned ban on fossil fuel-powered cars by 2040



Technologies:

Highly advanced infrastructure green car charging/fueling network already available in 2020

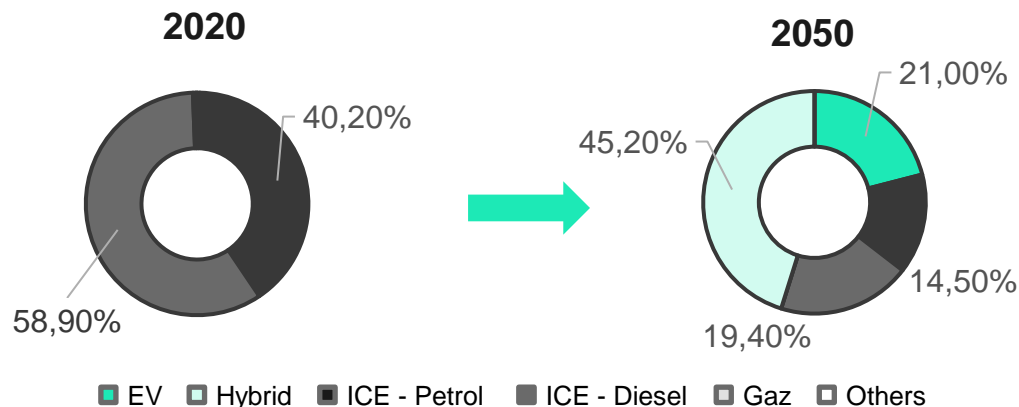


Population evolution:

French population will increase from 65,7 million to 70,6 million in 2050, along with an urbanization of the population from 81,0% to 88,3%.

Source: United nations – World urbanization prospects

Passenger car fleet by fuel type



Passenger car fleet
38,2 Million

Passenger car fleet
46,0 Million

Average consumption (L/100km)



- 38%

Petrol stations in 2050 compare to 2020



AUSTRIA



Major regulatory influence and policy targets:

Austria seeking to ban new-ICE registrations by 2030.



Technologies:

Medium advanced infrastructure green car charging/fueling network already available in 2020.

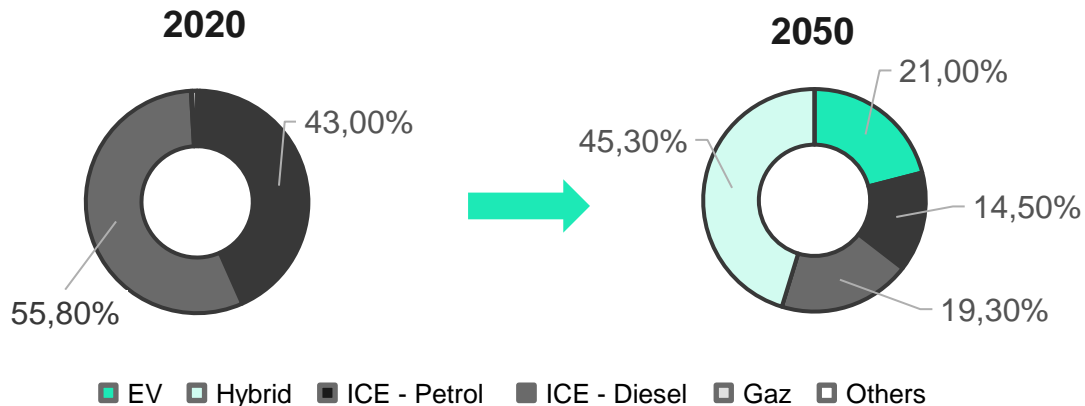


Population evolution:

Austrian population will increase from 8,8 million to 8,9 million in 2050, along with an urbanization of the population from 58,7% to 70,9%.

Source: United nations – World urbanization prospects

Passenger car fleet by fuel type



Passenger car fleet
5,0 Million

Passenger car fleet
5,8 Million

Average consumption (L/100km)



- 38%

Petrol stations in 2050 compare to 2020



UK

Major regulatory influence and policy targets:

The UK government's new law on mobility will uphold a planned ban on fossil fuel-powered cars by 2040



Technologies:

Highly advanced infrastructure green car charging/fueling network already available

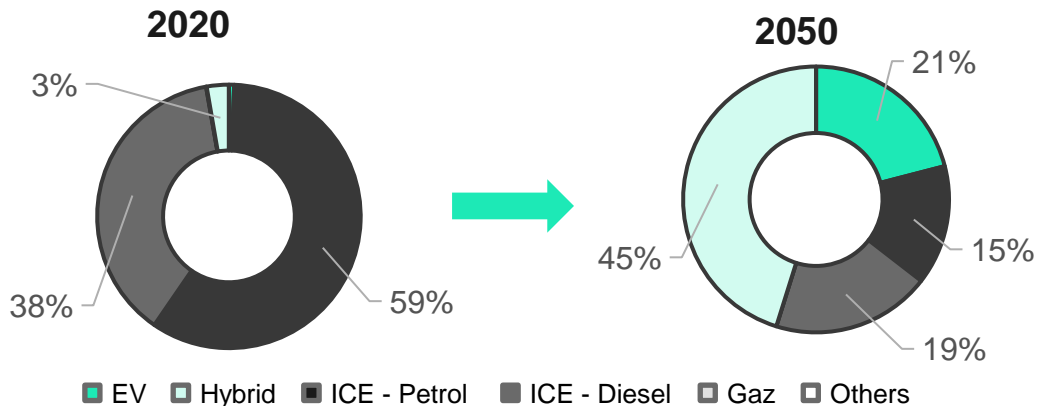


Population evolution:

UK population will decrease from 67,3 million to 75,3 million in 2050, along with an increase of urbanization of the population from 83,9 % to 90,2 %.



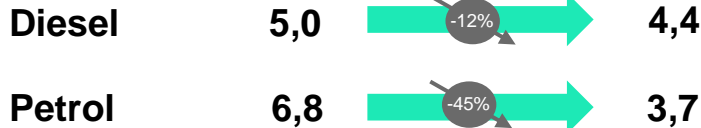
Passenger car fleet by fuel type



Passenger car fleet
47,8 Million

Passenger car fleet
51,5 Million

Average consumption (L/100km)



The significant decrease in petrol average consumption is explained by the change in passenger car fleet with 66% powered by electric engine (hybrid/EV)

- 27%

Petrol stations in 2050 compare to 2020



Appendix Glossary

Glossary

ICE vehicle means a conventional vehicle powered solely by an Internal Combustion Engine.

EV means electric vehicle

BEV means battery electric vehicle

PHEV means partial hybrid electric vehicle

HEV means a hybrid vehicle where one of the propulsion energy converters is an electric machine (BEV or PHEV).

NEDC means the test cycle to verify the exhaust emissions after a cold start described in UN Regulation No. 83 up to 07 series of amendments

LCV means light commercial vehicles

MHCV means medium and heavy commercial vehicles

Alternative Fuel: H2, Compressed Natural Gas, Liquefied Petroleum Gas etc...



Appendix Acknowledgments and contacts

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