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ENERDEALERS OBSERVATORY

Hydrocarbon Consumption in Spain: 2019–2022

May 2023

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1. Executive Introduction

As part of its commitment to providing strategic intelligence and enhancing transparency within the Spanish energy sector, **Enerdealers** presents the *Observatory on Hydrocarbon Consumption in Spain*. This initiative has been designed as a rigorous, data-driven instrument to monitor, analyse, and contextualize annual fuel consumption patterns across the country. By integrating quantitative data with a structured interpretative framework, the Observatory aims to support informed decision-making among industry stakeholders, policymakers, investors, and organisations involved in energy planning and compliance.

The period **2019–2022** represents one of the most structurally complex phases in recent energy history. Spain's hydrocarbon consumption was shaped by a succession of macro-events with profound implications for demand: the pre-pandemic economic trajectory of 2019; the unprecedented social, industrial, and mobility disruptions caused by the **COVID-19 pandemic** in 2020; the phased reopening and partial recovery of economic activity in 2021; and the broad normalization of mobility and industrial output seen in 2022. In parallel, global supply chain tensions and fuel price volatility—exacerbated by international geopolitical events—significantly influenced consumption behaviours and the operational context of both distributors and end-users.

These dynamics produced differentiated impacts across fuel families, revealing the structural characteristics and vulnerabilities of Spain's energy landscape. Diesel remained the backbone of national hydrocarbon consumption, reflecting the country's logistics-intensive transport model, while gasoline demand mirrored the fluctuations of household mobility and tourism. Kerosene displayed exceptional sensitivity to aviation constraints, and fuel oils reflected the evolution of industrial activity. Products such as GLP and Biofuels offered additional insight into the resilience or decline of specific market niches.

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In this context, the Enerdealers Observatory provides not only a descriptive account of annual consumption but also a systematic, year-over-year interpretation of trends and anomalies. By establishing a consistent analytical baseline beginning in 2019, the Observatory enables a clearer understanding of structural versus cyclical changes, supports future forecasting exercises, and enriches regulatory, commercial, and investment strategies across the energy value chain.

The analysis that follows combines the consumption data you provided with a contextual reading of each year's socio-economic and sectorial developments. This integrated approach ensures that the Observatory functions not merely as a statistical dataset, but as a comprehensive, authoritative reference for understanding how and why Spain's hydrocarbon demand evolves over time.

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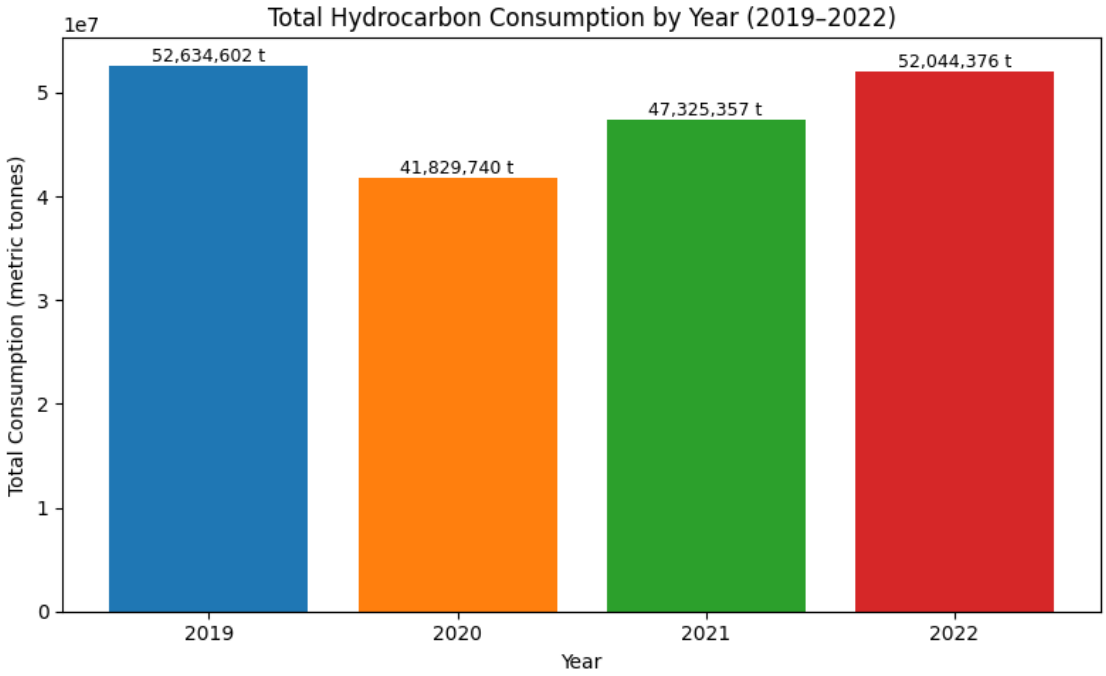
2. Annual evolution of total hydrocarbon consumption in Spain between 2019 and 2022

The annual evolution of total hydrocarbon consumption in Spain between 2019 and 2022 reflects one of the most dynamic and disruption-driven periods in recent energy demand history. The series begins in 2019, a **pre-crisis baseline year** that represents stable economic activity and normal mobility patterns across road, maritime, and aviation sectors. This equilibrium was abruptly interrupted in 2020, when the global pandemic triggered an unprecedented **demand shock**, severely reducing mobility and industrial activity and leading to one of the sharpest contractions ever recorded in national hydrocarbon consumption.

In 2021, the reopening of economic sectors and the gradual restoration of both passenger and freight transport set the foundations for a **progressive recovery**. Although still below pre-pandemic levels, consumption began to climb back as mobility constraints eased and logistics chains stabilized.

Finally, 2022 emerges as the **year of normalization**, marking a full return to consumption levels comparable to those of 2019. This normalization reflects the reactivation of the aviation sector, the consolidation of road transport activity, and the overall recovery of economic dynamics across Spain. Together, these four years form a coherent narrative that illustrates how hydrocarbon demand reacts to systemic disruptions and how quickly it can rebound once economic and mobility conditions stabilize.

Figure 1. Total Hydrocarbon Consumption by Year (Spain, 2019-2022)



The chart illustrates the **annual evolution of total hydrocarbon consumption in Spain between 2019 and 2022**, expressed in **metric tonnes**. Each bar includes the **absolute consumption value**, which allows for an immediate understanding of both the temporal trend and the magnitude of the variations.

From a technical standpoint, the data reveal a **cyclical profile closely linked to macroeconomic mobility dynamics**, where demand for transport fuels—especially diesel, the dominant component—plays a central role.

The absolute values reinforce the dominant role of diesel products, which drives the behaviour of the total: when diesel falls sharply —as in 2020— the entire system contracts.

From a broader energy-system lens, these figures highlight Spain's:

- Continued **dependence on liquid fuels**,
- Sensitivity to **mobility-related disruptions**,
- Still-limited structural shift towards alternatives

(electrification, biofuels) during this period.

2019: Pre-pandemic reference level

In 2019, consumption reached **52.63 million tonnes**, establishing the last "normal year" before disruptions. This level reflects:

- Stable industrial activity,
- High mobility,
- Sustained demand for diesel in both freight transport and private vehicles.

This year serves as a benchmark for the entire period.

2020: Sharp contraction due to mobility restrictions

Consumption fell abruptly to **41.83 million tonnes**, representing the **largest drop in the series** (a reduction of roughly **–20%** compared with 2019). This drop aligns technically with:

- COVID-19 lockdowns,
- Reduced air and road transport,
- Lower industrial output.

Diesel consumption—key to the total—was particularly affected, reinforcing the dependence of the aggregate on ground transport activity.

2021: Partial recovery

By 2021, consumption rebounded to **47.33 million tonnes**, showing a **gradual recovery** in mobility and logistics. However, the level remained below 2019 because:

- International travel had not fully normalised,
- Some structural efficiency gains (remote work, logistics optimisation) reduced demand.

This year represents a **transition phase**, reflecting asymmetric recovery across fuel types.

2022: Return to near pre-COVID levels

Consumption climbed again to **52.04 million tonnes**, nearly matching 2019. This indicates:

- Full restoration of economic activity,
- Recovery of passenger and freight mobility,

- Increased aviation kerosene demand compared with 2020–2021.

2022 shows how **hydrocarbon consumption remains strongly tied to real-economy mobility patterns**, despite growing electrification trends.

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3. Percentage Share of Fuels in Annual Totals

The comparative distribution of hydrocarbon consumption in Spain between 2019 and 2022 provides a detailed view of how each fuel type contributed to total demand during a period marked by strong cyclical fluctuations. This stacked-bar representation not only highlights the absolute consumption levels by product group, but also the **internal composition of the energy mix**, revealing how different fuels responded to the macroeconomic disruptions and subsequent recovery.

Throughout the four-year period, **diesel products** remain the dominant driver of national consumption, consistently representing the largest share of the total mix. In 2019, this structure reflects a **pre-crisis baseline**, with stable contributions from gasoline, fuel oils, kerosene, LPG, and Biofuels. The picture changes markedly in 2020, where the **demand shock** generated by the COVID-19 pandemic leads to a sharp contraction across most product categories—particularly those linked to mobility, such as kerosene and gasoline.

The energy mix begins to rebalance in 2021, showing a **progressive recovery** that is visible both in the growth of total consumption and in the gradual return of aviation fuels and diesel usage. This trend culminates in 2022, a **year of normalization** in which overall consumption returns to levels close to those of 2019. Importantly, the proportional structure by fuel type also stabilizes, indicating a re-establishment of typical mobility patterns and industrial operations across the country.

Together, these comparative profiles offer a comprehensive understanding of how each hydrocarbon product contributed to the decline, recovery, and normalization phases of the Spanish energy system during this four-year period.

Figure 2. Consumption Evolution of Main Fuel Families in Spain (2019-2022)

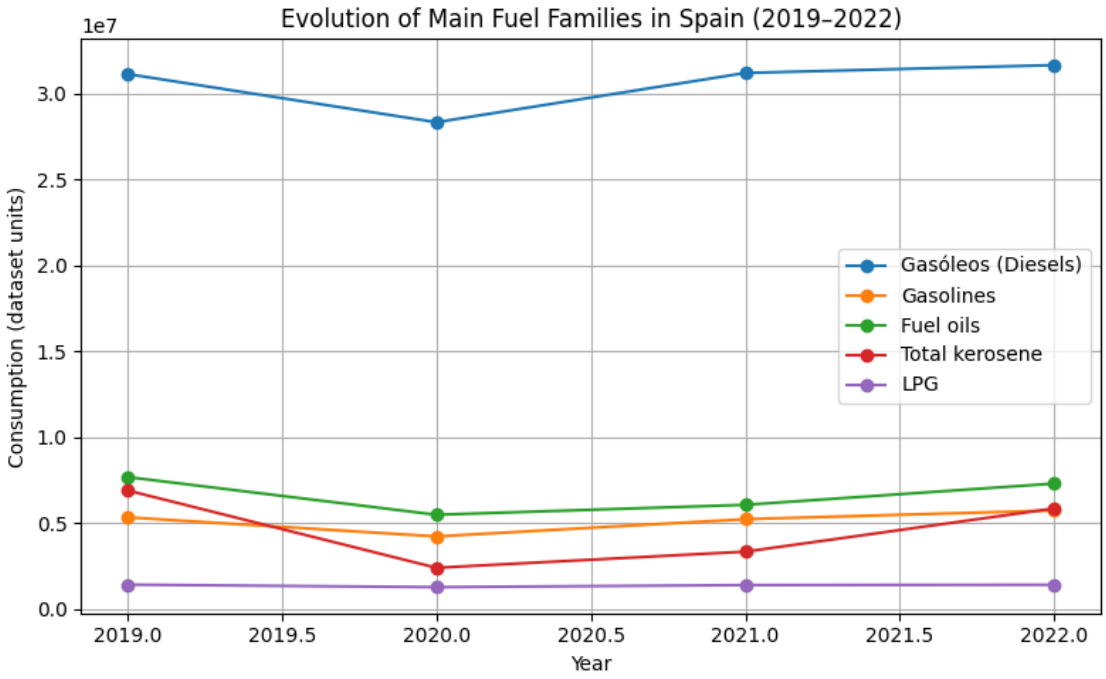
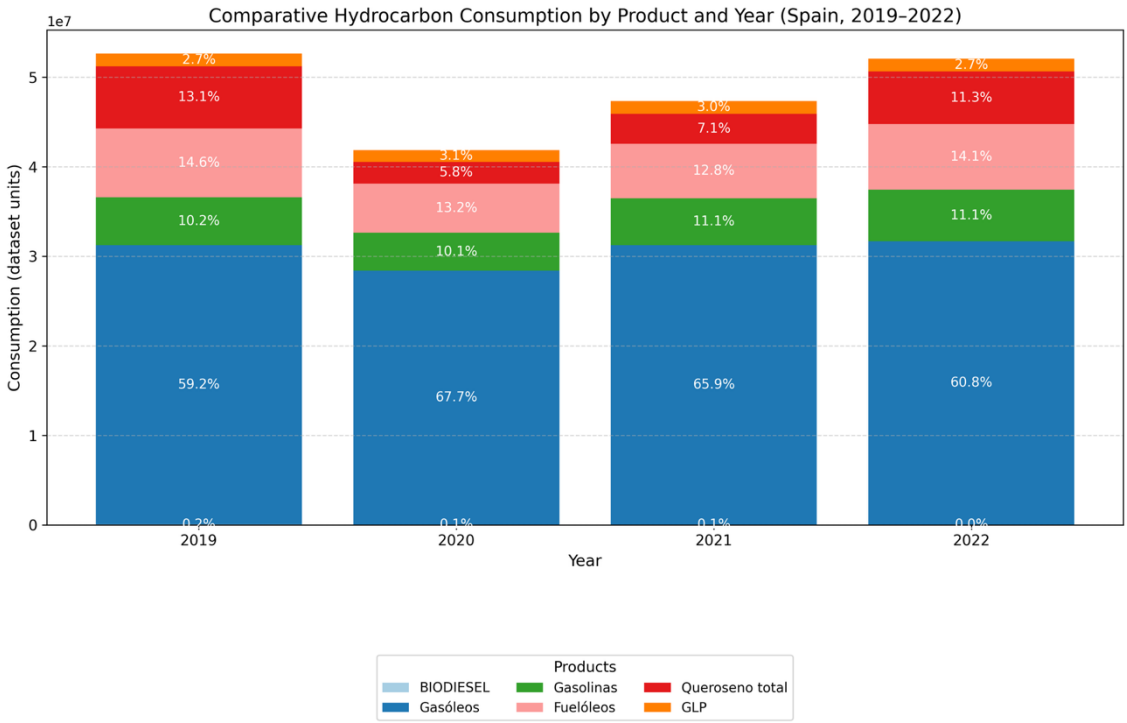


Table 1. Consumption Evolution of Mail Fuel Families in Spain (Spain, 2019-2022)

AÑO	BIOFUELS	DIESELS	GASOLINES	FUEL OILS	KEROSENE	GLP	TOTAL
2022	14790,54	31657408,7	5755499	7317584	5871009	1428065	52044376,2
	56,79%	*101,46%*	*109,69%*	*120,34%*	*174,87%*	*101,13%*	*109,97%*
2021	26043,44	31201724,6	5247231	6080797	3357355	1412146	47325357
	67,11%	*110,12%*	*123,68%*	*110,49%*	*138,85%*	*109,26%*	*113,14%*
2020	38807,73	28334203,9	4242558	5503327	2417937	1292490	41829739,6
	47,11%	*90,99%*	*79,22%*	*71,50%*	*34,94%*	*89,87%*	*79,47%*
2019	82385,57	31140171,4	5355280	7696824	6920796	1438251	52634601,6

Figure 3. Comparative Hydrocarbon Consumption by Product and Year (Spain, 2019-2022)



2019 – Normal pre-pandemic activity

- Diesel products: **59.16%**
- Fuel Oils: **14.62%**
- Kerosene: **13.15%**
- Gasolines: **10.17%**
- GLP: **2.73%**
- Biofuels: **0.16%**

This distribution represents Spain's *steady-state energy demand*. Diesel dominated due to freight transport and diesel vehicle prevalence. Kerosene was strong, reflecting a record period of air mobility, particularly linked to tourism.

2020 – The COVID-19 collapse

- Diesel products: **67.74%**
- Fuel Oils: **13.16%**
- Gasolines: **10.14%**
- Kerosene: **5.78%**
- GLP: **3.09%**
- Biofuels: **0.09%**

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Spain underwent one of Europe's strictest lockdowns (March–June 2020).

Aviation virtually shut down → kerosene consumption plummeted by ~65% vs. 2019.

Road transport reduced sharply but remained essential for logistics, making diesel's relative share inflate to nearly 68%.

Fuel oils stayed resilient due to industrial, and power-generation uses, less sensitive to mobility constraints.

GLP increased slightly in share due to stable residential and industrial uses.

Biofuels fell sharply as blending mandates became less binding during reduced demand.

The year represents the deepest contraction in Spain's modern hydrocarbon history.

2021 – The restricted recovery

- Diesel products: **65.93%**
- Gasolines: **11.09%**
- Fuel Oils: **12.85%**
- Kerosene: **7.09%**
- GLP: **2.98%**
- Biofuels: **0.06%**

Mobility returned gradually, supported by vaccines and phased reopening.

Road transport recovered faster than aviation → diesel consumption strengthened.

Aviation remained limited due to international restrictions, explaining kerosene's weak share.

Rising oil prices in the global market impacted consumer behavior, dampening gasoline recovery.

Industrial output normalized progressively, keeping fuel oils stable.

2022 – Near return to pre-crisis levels

- Diesel products: **60.83%**
- Fuel Oils: **14.06%**
- Kerosene: **11.28%**
- Gasolines: **11.06%**
- GLP: **2.74%**
- Biofuels: **0.03%**

The lifting of most mobility restrictions caused a steep rebound in aviation (kerosene increased by nearly 75% vs. 2021).

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Tourism in Spain nearly matched 2019 levels, boosting air travel and gasoline demand.

Economic reopening revived industrial consumption of fuel oils.

Diesel remained dominant but its percentage fell slightly as all other categories grew.

Tensions in global energy markets (including the war in Ukraine) impacted refinery behaviour and pricing, altering consumption elasticity.

Biofuels continued to decline, reflecting market shifts, regulatory changes, and price pressures on bio-feedstocks.

Concluding Insights: Most Consumed Fuel Each Year

Across all four years, the **most consumed fuel was always Diesel products**, representing:

- A structural dependence on diesel transport, especially freight.
- High penetration of diesel cars in earlier decades.
- Industrial and agricultural uses that remained relatively stable.

Even during the pandemic, diesel demand decreased less than other fuels, solidifying its central role.

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4. Key Interannual Variations for each product

Biofuels

2019 → 2020: −52.9%

- Lower blending needs due to reduced diesel demand.
- Biofuel supply disruptions and market uncertainty.

2020 → 2021: −32.9%

- Persisting structural decline in Biofuels use

2021 → 2022: −43.2%

- Global price volatility of vegetable oils increased production costs
- Shift toward other renewable alternatives in transport policy debates

GLP

2019 → 2020: −9.8%

- Industrial slowdown during lockdowns

2020 → 2021: +9.3%

- Recovery in certain manufacturing activities

2021 → 2022: +1.1%

- Continued stability in industrial and residential sectors

Diesel products

2019 → 2020: −9.0%

- Sharp reduction in mobility but essential logistics kept demand relatively high

2020 → 2021: +10.1%

- Strong rebound in trucking, commerce, and mobility

2021 → 2022: +1.5%

- Stabilization at levels slightly above the pre-pandemic baseline

Kerosene

2019 → 2020: −65.1%

- Global aviation shutdown, grounded fleets, collapse in tourism

2020 → 2021: +38.8%

- Partial reopening, domestic flights recovering first

2021 → 2022: +74.8%

- Tourism resurgence and normalization of international travel

Concluding Insights

The dataset clearly maps onto Spain's broader socio-economic trajectory:

- **2020 stands out as the historical anomaly**, with fuel consumption reflecting lockdown and economic paralysis.
- **2021 was a transition year**, partial recovery uneven across sectors.
- **2022 marks a full rebound**, driven by tourism and industrial normalization.
- **Diesel remains the structural backbone** of Spanish hydrocarbon consumption, underpinning freight and economic activity.
- **Kerosene is the most sensitive fuel** to external shocks, particularly mobility and tourism.
- **Biofuels' decline appears structural**, not just cyclical.

These insights provide a holistic picture of how Spain's energy consumption reacts to crises, recoveries, and long-term market shifts.

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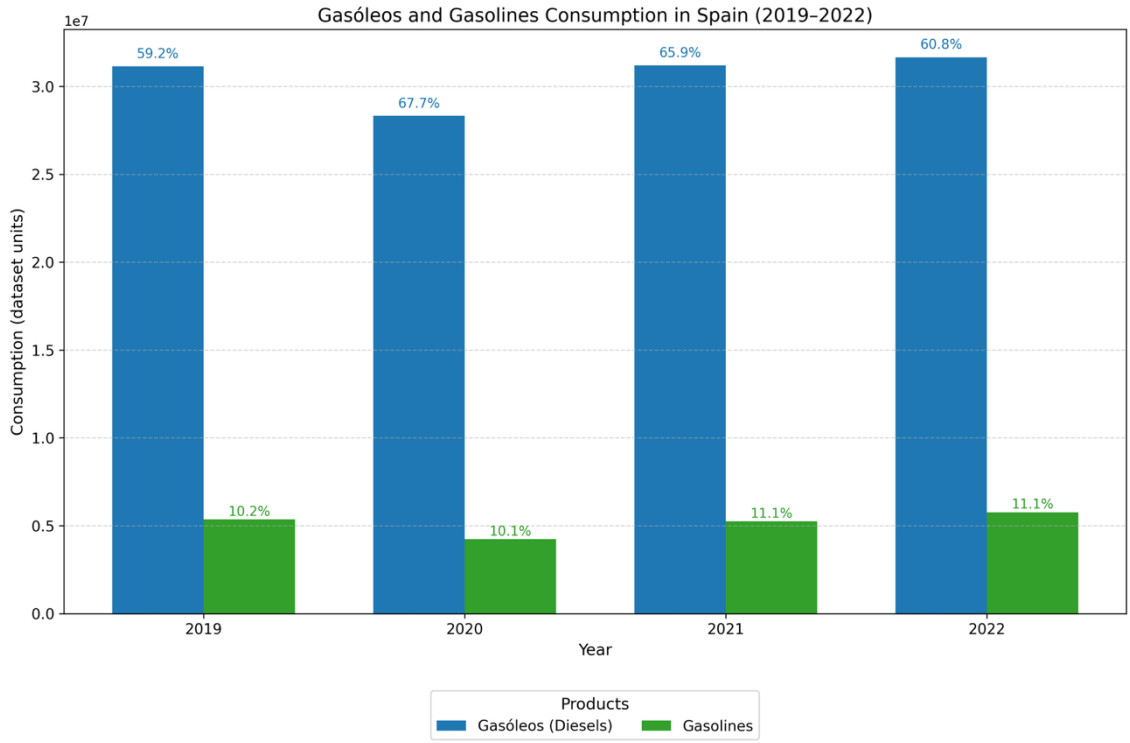
5. Consumption of Diesels and Gasolines

This chart compares the **percentage distribution between Diesel Fuels** and **Gasolines** within **total road-transport fuels** for each year from 2019 to 2022.

The key message is **the structural dominance of diesel in Spain's road-fuel mix**, and how it fluctuated slightly due to major contextual events such as the pandemic and the post-pandemic recovery.

Figure 4. Diesel and Gasolines Consumption (Spain, 2019-2022)



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Diesel products consistently dominate the road-fuel market

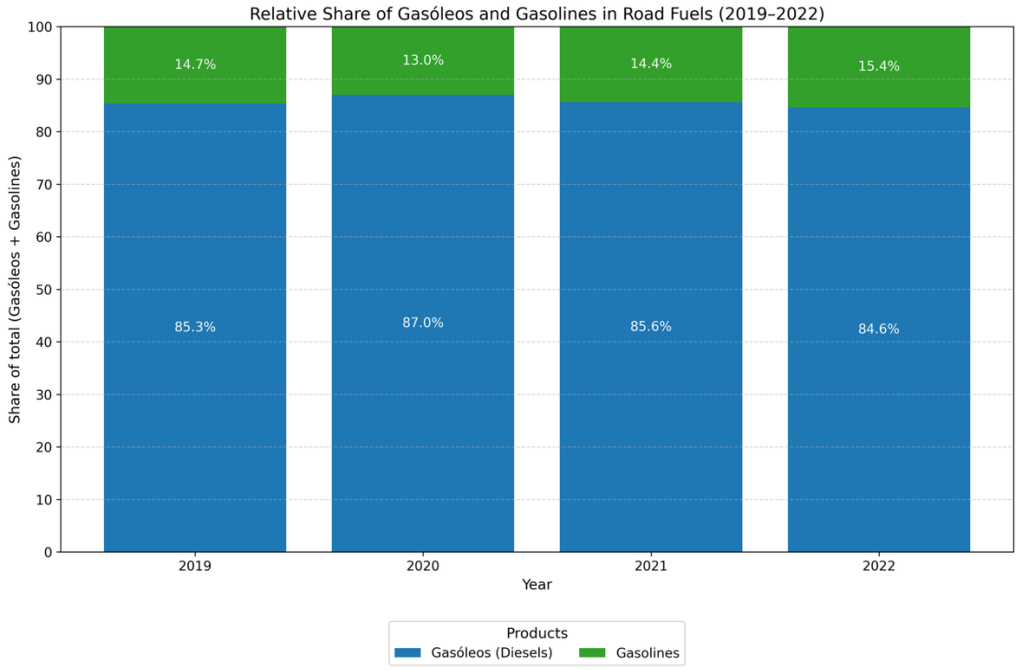
Across all four years, diesel represents between **84% and 87%** of the total road fuels consumed.

Why diesel dominates in Spain:

- A historically large diesel passenger-car fleet.
- Freight transport heavily reliant on diesel trucks and vans.
- Agricultural and construction sectors also contribute to diesel demand.

This structural dependence explains why even major shocks (like COVID-19) did not significantly alter the diesel–gasoline balance.

Figure 5. Relative Share of Diesel Products and Gasolines in Road Fuels (Spain, 2019-2022)



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Year-by-year interpretation

2019 – Pre-pandemic normality

- **Diesel products:** 85.3%
- **Gasolines:** 14.7%

This reflects Spain's typical pre-COVID road-fuel profile: diesel clearly dominant, gasoline steady around 15%.

2020 – Pandemic shock and lockdowns

- **Diesel products:** 87.0%
- **Gasolines:** 13.0%

The diesel share **increases** to its highest point in the period. **Why?**

- Road mobility collapsed for leisure travel → gasoline (linked to private cars) took the biggest hit.
- Essential logistics remained active → diesel fell less than gasoline.
- Agricultural and industrial uses of diesel also continued despite restrictions.

This explains why the share of diesel rose even though its absolute consumption fell.

2021 – Partial reopening, mobility recovering unevenly

- **Diesel products:** 85.6%
- **Gasolines:** 14.4%

As social and economic activity resumes:

- Gasoline use rebounds faster (vacation travel, domestic tourism).
- Diesel remains strong but loses part of the inflated share it gained during lockdowns.

The ratio thus moves back toward 2019 levels.

2022 – Near full normalization, strong tourism recovery

- **Diesel products:** 84.6%
- **Gasolines:** 15.4%

This is the **highest gasoline share** of the entire period. **Reasons:**

- Tourism in Spain returned close to 2019 levels, boosting gasoline consumption in private vehicles and rental fleets.

- Road freight remained strong but grew more slowly than private mobility, slightly reducing diesel's share.
- High diesel prices in 2022 (linked to global tensions and refinery constraints) may also have mildly affected consumption patterns.

Even so, diesel remains overwhelmingly dominant.

What the chart reveals at a glance

A. Diesel dominance is structural

Regardless of crisis (2020) or recovery (2022), diesel remains above 84% of road-fuel consumption.

B. Gasoline is more sensitive to mobility patterns

It decreases sharply during lockdowns (2020) and increases during tourism rebounds (2021–2022).

C. The pandemic temporarily distorted, but did not alter, Spain's long-term fuel mix

By 2022, the diesel–gasoline balance returned close to pre-pandemic proportions.

Bigger-picture interpretation

Spain's transport system is structurally diesel-intensive, and how:

- Gasoline tracks personal mobility.
- Diesel tracks logistics and essential economic activity.

The balance between the two therefore acts as a proxy for the broader economic and social context.

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6. Market Dimension and Network Structure

Spain closed 2022 with approximately 11,900 service stations. Independent operators accounted for around 43% of stations, while Repsol, Cepsa and BP jointly controlled close to half of the national network.

Spain closed 2022 with about **11,900 service stations**, structured as follows:

Figure 6. Network Shares by Operator Groups (Spain, 2022)

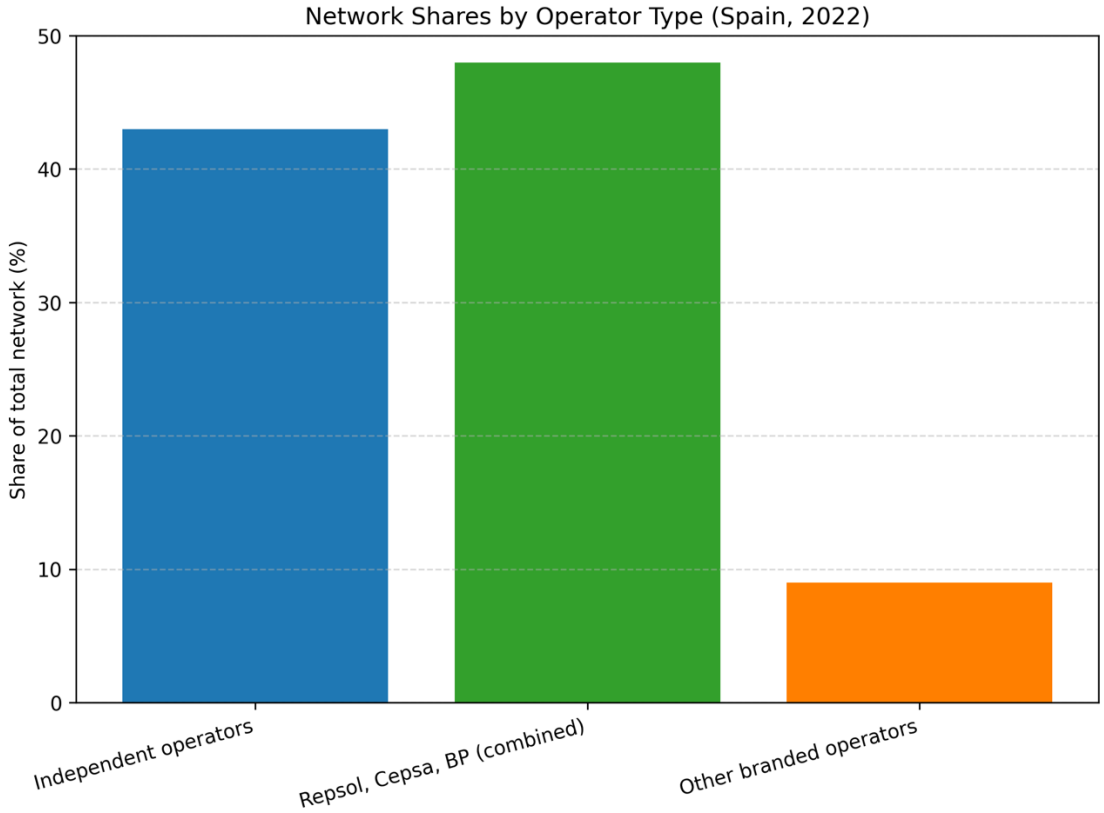
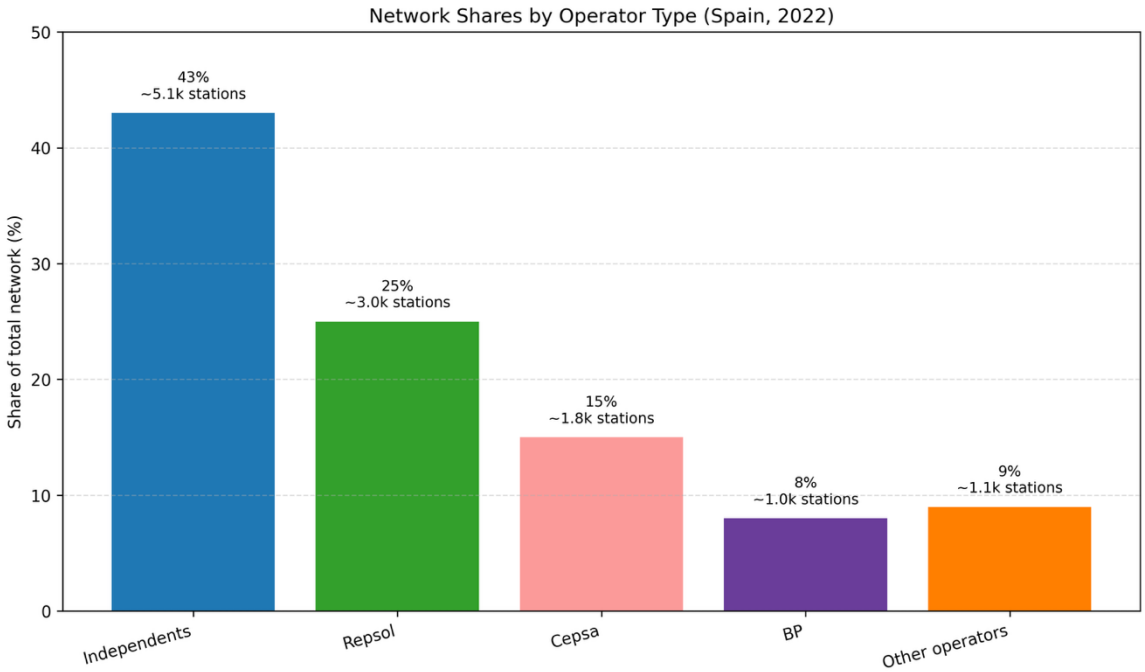


Table 2. Gas Stations Distribution by Operator Type (Spain, 2022)

Operator segment	Network share (%)	Estimated no. of stations*
Independent operators	43%	5,117
Repsol, Cepsa, BP (combined)	48%	5,712
Other branded operators	9%	1,071
Total (assumed)	**100%**	**11,900**

Figure 7. Gas Stations Distribution by Operator (Spain, 2022)



While independents dominate by number, refining operators control a **disproportionately larger share of total volumes**, due to higher average throughput and strategic locations.

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Fuel Consumption by Operator Type: Volumes and Mix (Diesel vs. Gasoline)

The distribution of diesel and gasoline consumption by operator segment reveals a well-defined structural pattern in the Spanish retail fuels market. Across all segments, **diesel clearly dominates the mix**, reflecting the strong weight of road freight transport and the persistent prevalence of diesel passenger vehicles in the national fleet.

Independent operators show the highest proportional reliance on diesel, with **78.8%** of their total diesel-gasoline sales coming from this product. This profile is consistent with their strong presence in high-traffic corridors and logistics-intensive areas, where demand is driven primarily by commercial transport rather than private mobility.

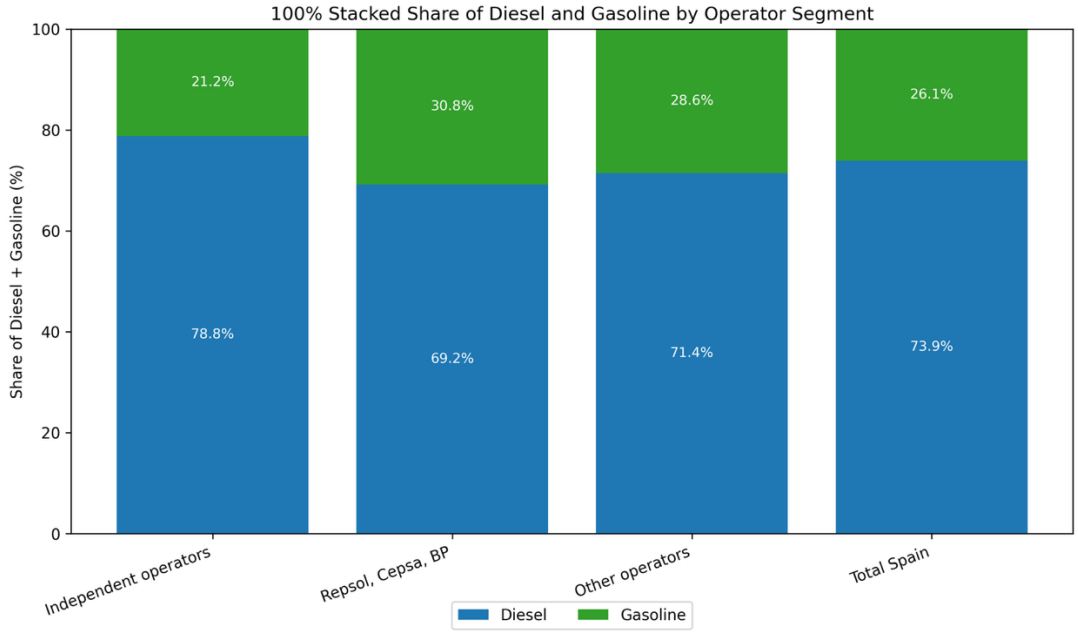
In contrast, the large integrated operators (**Repsol, Cepsa, BP**) present a more balanced fuel structure, with diesel accounting for **69.2%** and gasoline for **30.8%**. Their higher gasoline share reflects their broader presence in urban and peri-urban markets, where private vehicle mobility is more relevant.

The segment labelled **Other operators** falls between these two profiles, with diesel representing **71.4%** of the mix. This intermediate position suggests a combination of market niches, ranging from local distribution to smaller regional networks.

At the aggregate level, **Total Spain** shows a diesel share of **73.9%**, confirming the national pattern: **diesel predominates across all operator categories**, though with notable variations depending on the commercial positioning and geographic footprint of each segment.

This chart highlights not only the structural dominance of diesel in the Spanish fuel landscape but also the strategic segmentation of operators, whose customer bases and station networks shape the relative importance of each product.

Figure 8. 100% Staked Share of Diesel and Gasoline by Operator (Spain, 2022)



The next table quantifies the distribution of **diesel and gasoline sales in Spain**, highlighting both the **volume by operator segment** and each segment's **share in the national market**.

At the aggregate level, **Total Spain** reaches **33.75 million tonnes**, of which **24.75 million tonnes** correspond to **diesel** and **8.75 million tonnes** to **gasoline**. This confirms the **structural predominance of diesel**, which represents roughly **three quarters of total road fuel consumption**.

From the perspective of market structure:

- **Repsol, Cepsa and BP** collectively account for the **largest share of the market**, with **17.35 million tonnes** sold, equivalent to **51% of total Spanish diesel + gasoline consumption**. Their portfolio combines **12.0 million tonnes of diesel** and **5.35 million tonnes of gasoline**, reflecting a broad and diversified station network covering both freight and private mobility.

- The **independent operators** group reaches **13.75 million tonnes**, or **41% of the market**, with **10.75 million tonnes of diesel** and **2.9 million tonnes of gasoline**. This profile is more heavily oriented towards diesel, consistent with their strong positioning on high-throughput corridors and price-sensitive segments frequented by professional transport.
- The category **Other Operators** adds **2.8 million tonnes**, equivalent to **8% of total demand**, with **2.0 million tonnes of diesel** and **0.8 million tonnes of gasoline**. Although their quantitative weight is more limited, this segment contributes to coverage in specific regional and niche markets.

Overall, the table shows a **highly concentrated market** in volumetric terms—where the three largest integrated operators exceed half of national sales—while **independent operators together constitute a substantial 41%** of the diesel and gasoline market. The combination of volumes and shares underscores both the **central role of diesel** in Spain's mobility model and the **relevant competitive space** occupied by independent brands alongside the traditional majors.

Table 3. Diesel and Gasoline Distribution by Operator Type (Spain, 2022)

(Million tonnes)

Segment	Diesel	Gasoline	Total	Share
Independent operators	10.75	2.9	13.75	41%
Repsol, Cepsa, BP	12.0	5.35	17.35	51%
Other operators	2.0	0.8	2.8	8%
Total Spain	24.75	8.75	33.75	

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7. Final Conclusions

The analysis of hydrocarbon consumption in Spain between 2019 and 2022 reveals a period defined by profound disruption, rapid adaptation, and eventual normalization. The dataset clearly shows how Spain's energy demand is tightly coupled to macroeconomic activity, mobility patterns, and structural characteristics of the national transport and industrial system.

First, **diesel products remain the backbone of Spanish hydrocarbon consumption**, consistently representing the largest share across all years. Its resilience—even during the unprecedented contraction of 2020—highlights the centrality of logistics, freight transport, and diesel-dependent industrial sectors in the national economy. Despite gradual electrification trends, no structural shift away from diesel is yet visible within this timeframe.

Second, the pandemic year **2020 stands out as an exceptional anomaly**, marking the steepest decline ever recorded in several fuel categories. Kerosene experienced the most dramatic collapse, reflecting the near-shutdown of aviation and tourism. Gasoline also contracted substantially due to mobility restrictions. By contrast, fuels linked to essential services—such as diesel and fuel oils—demonstrated relative stability, underscoring their critical role in maintaining economic continuity.

Third, **the recovery phase (2021–2022) shows a clear and consistent rebound**, though with notable asymmetries. Road transport fuels recovered more steadily, while aviation fuels depended on the timing of international travel normalization. The strong resurgence of kerosene in 2022 illustrates the importance of tourism to Spain's energy demand. By the end of 2022, total hydrocarbon consumption had effectively returned to pre-pandemic levels, demonstrating the sector's capacity for rapid re-equilibration once mobility resumed.

Fourth, the data supports the interpretation that **2022 marks a full normalization** of Spain's hydrocarbon consumption landscape. Most fuel categories

converge again toward their 2019 structures, confirming that the pandemic, though disruptive, did not fundamentally alter the long-term configuration of the Spanish fuel mix. Gasoline's recovery and the stabilization of fuel oils reinforce this continuity.

Fifth, **Biofuels emerges as the one product with a structural—not cyclical—decline**. Supply chain tensions, price pressures on feedstocks, and evolving policy signals appear to be reshaping its role within the fuel portfolio. In contrast, GLP shows relative stability, reflecting its embedded use in both residential and industrial segments.

Finally, the market analysis highlights a **dual structure** in Spain's supply landscape: a concentrated core dominated by integrated operators (Repsol, Cepsa, BP) that control a majority of total volumes, and a highly **relevant independent operator segment that accounts for over 40% of diesel and gasoline sales**, particularly in logistics-intensive corridors. This balance sustains competitive dynamics and ensures broad territorial coverage.

In sum, the **2019–2022 period provides a unique lens through which to understand the vulnerability and resilience of Spain's hydrocarbon system**. While consumption patterns were deeply affected by temporary shocks, **the underlying structure of demand has remained largely intact**.

Diesel continues to dominate, aviation fuels remain sensitive to global events, and the **national fuel mix shows strong alignment with Spain's mobility, industrial, and economic foundations**. These insights offer a robust foundation for future forecasting, strategic planning, and regulatory assessment in an energy landscape that is gradually—but not yet structurally—transitioning toward alternative solutions.