Future of the UK downstream oil sector Call for Evidence

FUELS Industry UK

EXECUTIVE SUMMARY

- The UK's downstream fuel sector remains a strategically important part of the energy and wider economic system.
- The sector provides 47% of the UK's final energy consumption including an increasing volume of lower carbon products.
- The sector is critically linked to a wide range of other economic activity, as well as providing highly skilled jobs and billions of pounds of exports.
- It is vital for the UK's resilience, its ability to credibly reduce overall emissions, as well as domestic jobs and GDP that the UK Government urgently address areas of policy that have diminished the UK's competitiveness in the global market.

The sector has undergone significant structural change over the past two decades, with domestic refining capacity falling from nine major refineries in 2000 to six in 2015 and four today in 2026. This reduction has materially increased the UK's dependence on imported products in particular middle distillates. Diesel imports have risen from 3.8 Mt in 2000 to 12.8 Mt in 2024 even though their total UK demand peaked in 2017, and kerosene imports have more than doubled over the same period (4.7 Mt to 11.7 Mt).

The sector continues to deliver substantial economic value. It has made progress in improving efficiency and delivering lower carbon fuels. Renewable fuel supply reached 3.8 billion litres in 2024 with an average 77% greenhouse gas saving, and the introduction of the SAF Mandate is accelerating the deployment of sustainable aviation fuels although both fuels are also highly dependent on imports which are blended. However, major decarbonisation technologies, particularly Carbon Capture, Usage and Storage (CCUS), hydrogen and advanced lower carbon fuel (LCF) production, will take a many more years to be operational and of sufficient scale to meet ambitious UK Government targets. While government has selected early projects, delivery on the ground remains limited today, and the UK risks falling behind competitor regions where investment conditions are more favourable.

Looking ahead, long-term demand projections show that, even in net-zero-aligned scenarios, the UK will continue to require substantial volumes of liquid fuels and other hydrocarbon products – particularly for aviation, maritime and heavy transport. This will continue well into the 2040s and 2050s. The Government must, therefore, recognise the urgent need to retain domestic production capability or otherwise increasingly rely on imports. A fully import-dependent model would increase exposure to global market volatility, reduce flexibility during emergencies and expose the UK to key supply choke points like the

Strait of Hormuz, whilst accelerating the offshoring of industrial emissions leading to the increase in global CO2 emissions.

Using the International Energy Agency's MOSES framework, the UK has moved from the lowest-risk category for middle distillates to the higher-risk low resilience grouping, reflecting both increased import dependence and the loss of flexible domestic refining production. These trends have strengthened, rather than weakened, the conclusions of the Government-commissioned Deloitte "Black Swan" study. This study found that domestic refining capacity becomes more valuable during global supply shocks, not less. The events of 2026, where diesel and jet prices spiked more sharply than petrol during geopolitical tensions as global markets competed for limited middle distillate supply, illustrate this growing vulnerability.

A competitive policy framework that can retain and ideally increase investment into the sector would see the sector meet domestic demand more securely than relying solely on imports, benefit the economy directly through tax take, skilled jobs and avoided volatility from falling fuel and products security, as well as increasing export income from supply to a global market that could continue to grow and would benefit from UK's lower carbon intensity supply. This is not simply an economic opportunity; it is a strategic one. If the UK maintains and modernises its refining base, it can:

- Export lower carbon products into markets where demand remains strong
- Support high-quality UK jobs in industrial regions
- Generate tax revenues from a sector that supports UK economy
- Improve the UK's balance of payments by reducing reliance on imported fuels and increasing export volumes
- Retains sovereign capability in an area that underpins national resilience.

The sector stands ready to work with Government to ensure that the UK maintains a resilient, competitive and lower carbon fuels system. A stable, predictable policy environment, one that recognises the strategic value of domestic refining and supports investment in lower carbon technologies, will be essential to achieving this.

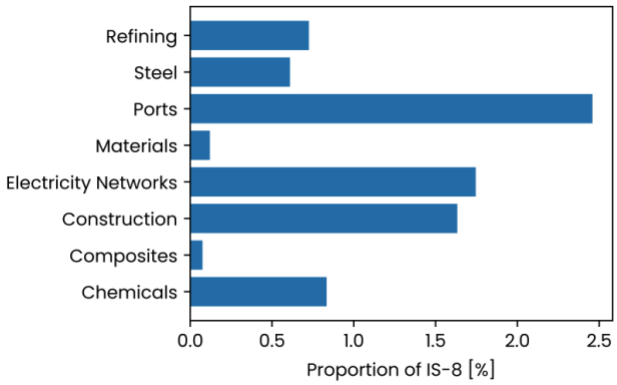
1. THE FUELS SECTOR IS KEY TO THE UK'S INDUSTRIAL ECONOMY

Refineries are strategic national assets, undervalued by Government

The UK Industrial Strategy (2025) did not recognise either the manufacturing of fuels nor the products themselves as central to the UK economy, the eight growth sectors and the foundational sectors that support them. This sends a strong market signal that deters multi-billion-pound investment in the UK in favour of other jurisdictions abroad.

The economy cannot function if 47% of its energy consumption is disrupted or removed. Without reliable fuels supply staff cannot get to work and freight and food cannot travel by road, ship or air. The graphic below shows that refining underpins the UK economy and contributes more to the IS-8 sectors than other sectors considered "foundational" including steel, materials and composites.

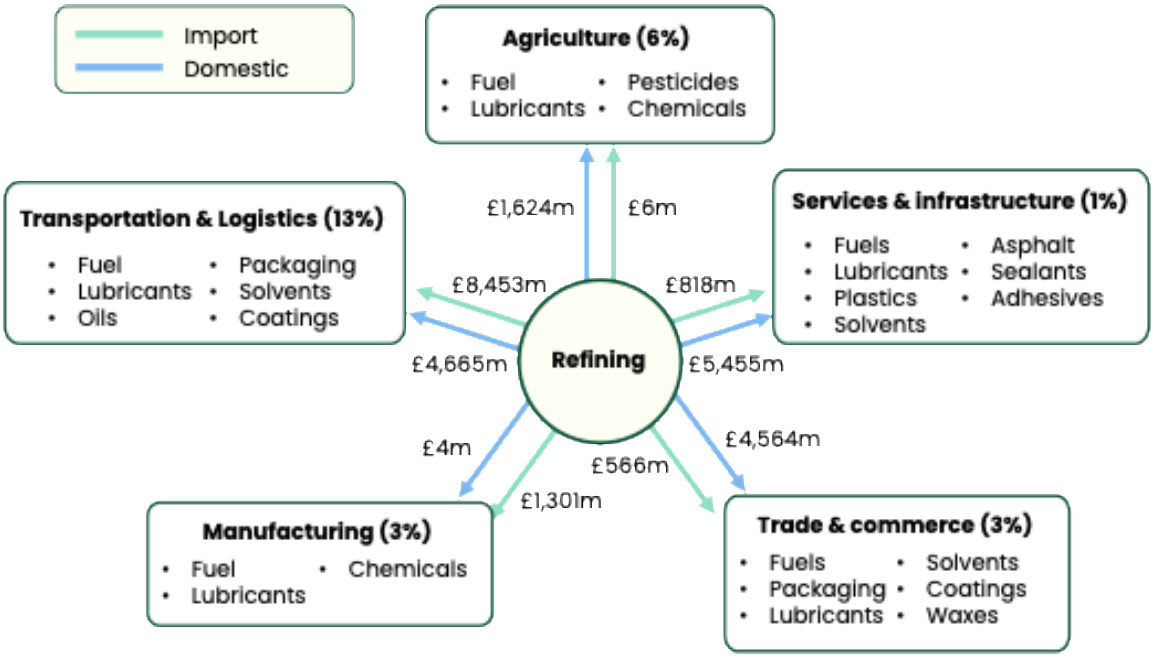
Refining sector contribution to Industrial Strategy 8 growth sectors (IS8)



Source: Fuels Industry UK analysis of Office for National Statistics (ONS) showing proportion of Industrial Strategy growth sectors' dependence on products from 'foundational sectors' as well as refining (not recognised by HMG as a foundational sector), released 20 February 2025, ONS website, dataset, UK input-output analytical tables: industry by industry: "Sheet IOT"

The fuels sector forms the backbone of the UK's energy system, supplying 47% of UK final energy consumption. Even as we move towards net zero, oil products will remain essential for decades to come supporting not just transport, but also agriculture, chemicals, pharmaceuticals and defence. Refineries provide essential non-fuel products such as feedstocks for pharmaceuticals, chemicals, speciality coke used in battery manufacture, and bitumen for construction, which are vital for UK infrastructure and manufacturing.

Flow diagram for refining sector contribution to other economy sectors and typical uses within each sector



Source: Fuels Industry UK analysis of ONS Input Output data, released 20 February 2025, ONS website. Value of usage of CPA_C19, the product of the "Coke and refined petroleum product" SIC C19 sector, by other aggregated sectors in £million.

It is preferable that the products to meet the UK's industrial demand be produced in existing, efficient UK refineries rather than less efficient and more carbon intense refineries overseas. Without a strong domestic refining base, Britain risks becoming dangerously exposed to instability abroad and losing control of its energy future.

Conclusions

The Government should formally acknowledge refineries as a foundational or strategic sector and ensure that status is reflected in cross-departmental policies. This would send a strong market signal to encourage multi-billion-pound investment in the UK.

Refineries are essential for employment and the economy

A strong refining sector shows that Britain is serious about growth, skills and its industrial base. The sector contributes significantly to the Treasury, collecting over £37 billion in fuel duty and VAT in 2024 alone. It supports over 100,000 jobs across the supply chain, with around 4,000 directly in refineries and many more in engineering, construction, logistics, retail and chemicals.

Refineries stand at the core of industrial heartlands such as the Humber, Merseyside and South Wales, regions which are central to the government's growth agenda. The highly trained apprentices and technicians trained in refining are the same workforce needed for

future projects in hydrogen, LCFs, and CCUS. Without this base, the UK risks eroding its industrial backbone and deepening regional inequality, becoming a country that no longer supports its manufacturing sector.

It is too soon to confirm how many jobs have been lost due to the closures of Lindsey and Grangemouth refineries, as future plans for both sites are still to be confirmed, but current estimates are around 700. At Grangemouth, the refinery contributed £403m of local economic activity each year before its closure. Every direct role supported five more in the wider supply chain, from welders and electricians, to truck drivers and service staff.

That is why, when a refinery closes, it is not just a facility shutting down. It damages an entire community, having a knock-on effect on local high streets, housing markets and public services.

With an awareness of this wider impact, the UK and Scottish Governments announced a joint effort called Project Willow[1] to support new investment opportunities at Grangemouth. While it would have been obviously preferable to keep the original employees in place without the need for employment schemes, this was a welcome scheme. However, few new opportunities have emerged showing that the conversion of refineries to biorefineries or SAF plants is far from easy even where there remains demand, skills and infrastructure. By way of example, Project Willow offers a range of £750-900MM in order to create a HEFA-SAF/Hydrogenated Vegetable Oil (HVO) plant that would offer 90-120 jobs where the Grangemouth refinery had employed over 500, with the output of that proposed plant being around 10% of the overall output.

Conclusions

A strong refining sector underpins UK growth, skills and regional economies, supporting jobs, revenue and future clean industries. Refinery closures harm communities and weaken industrial capacity. Producing a clear strategy reflecting the importance of the fuels sector's importance the would help Government ensure greater coherence across policies and help industries and governments (national and devolved) manage these challenging periods of transition

The illusion of progress in UK statistics

While the sector understands the legislative commitment to Net Zero remains an overarching goal for UK Government, the practical reality of maintaining a domestic industrial base whilst decarbonising is a challenge. A "reality check" of the last five years reveals that while there has been a reduction in UK emissions, that is not due to fundamental evolution of policy and supply side interventions that some policy makers expected to deliver a net zero economy.

[1] EY (funded by Petroineos, Scottish and UK Governments), Project Willow, March 2025, https://www.sdi.co.uk/media/vlubfykz/project-willow_pid_v214.pdf

Instead, it has been in large part due to closures of sources of emissions, including refineries, and a proportional increase in imports.

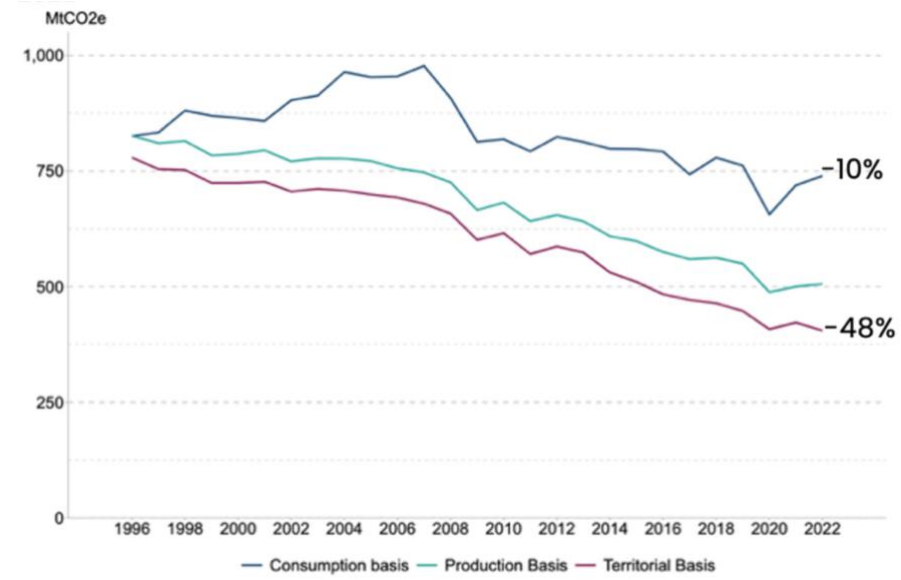
There is a wide range of projections and scenarios that consider global oil demand from now until 2050 (considered in other sections of this response) that may reduction, be similar to today's levels or even grow, however, all agree that the products made by refineries will still be needed.

Closing UK refineries does not reduce demand, it shifts production abroad with additional emissions from long-distance shipping. While imports of crude or products are essential regardless of domestic production capacity, the import of oil products occurs on smaller and more carbon intensive vessels than crude oil. Therefore, on a per-tonne basis, oil product imports emit 10kg more CO_2 than crude oil imports. In a scenario where all production for domestic use is replaced by imports an additional 320,000 tCO_2 would be emitted from oil product imports.

Britain's refineries operate under some of the strictest environmental and safety standards in the world - 80% of our top ten import partners have higher carbon intensity than the UK. Therefore, ending domestic refining does not cut emissions, it raises them by relying on fuels imported from countries with lower or no costs of carbon and lower environmental and safety standards. That makes the planet worse off, while creating the illusion of progress in UK statistics as carbon accounting does not include embedded emissions.

In reality, the UK is still highly dependent on fuel for its energy – 47% of final energy consumption at present - and will continue to be for decades to come. This this can be seen through DEFRA's consumption-based emissions measures which show that that while UK territorial emissions have fallen significantly since 1996 (-48%), consumption emissions have only fallen 10%. The data indicates that the UK has seen carbon leakage – appearing to reduce emissions domestically but in fact simply shifting most of its emissions to other countries.

Relationship of different measures of the UK's GHG emissions to 1996 to 2022



Source: DEFRA Carbon footprint for the UK and England to 2022,

Between 1996-2022, while UK demand for refined products fell 24% (75Mt to 57Mt), refining output fell further - by 43% (89Mt to 51Mt) yet imports as a proportion of total inland supply rose from 12% to over 50%[2]. Global fuel demand rose by 21%[3] during this period meaning that the UK refining sector could have grown during this time to meet rising global demand as a carbon-efficient manufacturer of the fuels which other countries need.

Considering latest UK Emissions Trading Scheme data, we can see there has been a reduction in free allowances to industrial sites by 36% from 2021 to 2026. Deindustrialisation – the closures of UK businesses - rather than decarbonisation, accounts for 20% of the reduction of allowances — a clear indication of carbon leakage.

[2] DESNZ, Digest of UK Energy Statistics (DUKES): petroleum, https://www.gov.uk/government/statistics/petroleum-chapter-3-digest-of-united-kingdom-energy-statistics-dukes

[3] IEA, World oil supply and demand, 1971-2020, https://www.iea.org/data-and-statistics/charts/world-oil-supply-and-demand-1971-2020

2. THE LOSS OF DOMESTIC REFINING CAPACITY RISKS SECURITY OF SUPPLY

The UK is at a "tipping point" and risks relying on fuel imports

Britain relies on a resilient liquid fuels supply whether they be conventional or lower carbon fuels, or both. However the closures of Lindsey and Grangemouth refineries in 2025 left the UK with just four operating refineries, down from nine in 2000. They represented around 20% of UK capacity and, prior to their closure, demand already exceeded refining capacity. The UK is now short on middle distillates (both diesel and jet fuel) and balanced on gasoline, whereas the EU is also short on middle distillates but has a surplus of gasoline. The result without intervention is that the UK, being increasingly import reliant, will also be dependant on longer and more risky supply chains as our nearest market will be unable to supply the products on which we are short

If current market conditions persist without policy intervention, there will be further site closures. The UK is at a "tipping point" with the lowest number of operating refineries in modern history, creating extreme import exposure on key products such as jet fuel and diesel, and risks relying on imports only for fuel. Domestic refining provides a critical sovereign capability that acts as a buffer against global supply shocks. With 100% of UK aviation, 97% of road transport, and 61% of rail still dependent on liquid fuels[4], a domestic manufacturing base is essential to prevent total reliance on volatile international import markets. Recent crises show how quickly global energy supplies can be disrupted, with the conflict in Iran in March 2026 leading to fears around national-level supply shortages as well as inflation and cost-of-living rises. Retaining sovereign refining capacity is the essential long-term protection against supply uncertainty.

While the UK has the pipelines, terminals and other infrastructure to support an import model in theory, they are currently sustained by the present market structure which has been historically refinery focussed. National storage capacity reduced as refineries closed, and it is unclear how the country would maintain the necessary storage and distribution capabilities as demand falls over the long term.

The link between fuels supply infrastructure in the UK and security is longstanding with some of our infrastructure (such as fuel pipelines) first constructed to meet the needs of our armed forces in World War 2 and our member companies continue to fuel critical military vehicles on air, sea and land today. Government statements in publications like the Defence Industrial Strategy and the Strategic Defence Review reference the need to ensure "logistic support arrangements…[are] more resilient to disruption and military assault". These statements fail to acknowledge that domestic fuel manufacturing capability is still essential for all forms of military transport and that international supply chains (both for crude and finished products) only work efficiently in times of peace where international law prevails.

[4] Fuels Industry UK analysis of DfT data, 2023 data

3. DELOITTE "BLACK SWAN" REPORT

A Deloitte report was commissioned by DECC in 2015, titled "Assessing the impact of reduced UK refining capacity on the resilience of UK fuel supplies to "black swan" disruptions".

This report assessed the impact of crude oil and product supply to the UK in the event of hypothetical disruption scenarios under varying domestic refining capacity scenarios.

While the report is now over 10 years old; the overall findings of the report that domestic refining capacity improves the UK's ability to supply fuels in all disruption scenarios remain valid, it is also useful to articulate changes in the scenarios on which the assessment is based in the intervening period.

Original report findings:

If global markets are working freely and efficiently, the UK can continue to source supply from abroad as imports at a new (unspecified) global market price. The report concludes that the additional benefit of having UK refining capacity to prevent a supply disruption is likely to be limited. However, a warning is given about the price impact: it is expected that the UK would need to pay either higher prices to secure these products or reduce demand to balance demand and supply.

In the context of a potential trade disruption where global markets break down, the report sets out that UK refining capacity enhances the resilience of the UK. Again, the price impact is not shown, but the report says that it is likely that the potential impact of this disruption on prices would be very significant and perhaps significant enough to lead to price controls and therefore rationing.

Global Geo-political relationship

Since 2015, there has been a worsening in geo-political relationship with the source nations in the report (former Soviet Union, Middle East, Africa) as well as new players in the market such as India and China with some arguing Europe has suffered "from the decay of the post-war international order, economic coercion from both China and the United States, and aggression from Russia"[5]. The report assumes that markets between UK and USA will continue to operate well during the significant disruption and that the USA will supply stocks to mitigate the impact in the UK, however, it is noteworthy that even the US may not be able to fully meet a UK shortfall for certain products e.g. jet fuel where the UK imports around 6.5 Mt from the Middle East with total USA exports for jet being ~11Mt with it unlikely that half of all US exports would be directed solely to the UK (with recent years showing UK bought 5% of

[5] Sapir, A., J. F. Kirkegaard and J. Zettelmeyer (2025) 'Geopolitical shifts and their economic impacts on Europe: Short-term risks, medium-term scenarios and policy choices', Report 1/2025, Bruegel

exports in 2025)[6]. This is likely to make the UK more susceptible to both volume and price impacts.

UK Refining Capacity

At the time of the original report, there were six major UK oil refineries in operation (Humber, Grangemouth, Pembroke, Lindsey, Stanlow and Fawley) with a total refinery capacity of around 1.4m barrels per day.

Grangemouth and Lindsey refineries both closed in 2025, leaving four remaining in operation as of April 2026. This leaves a current total UK refining capacity of around 1.0m barrels per day.

UK Product Demands

2013 consumption data was used in the evaluation of impacts in the original report. Over time, the demand profile has changed, reflecting the evolution of the transport sector over the same period.

The table below illustrates the consumption data for key fuels between 2013 (taken from the Deloitte report), and 2024 (the latest data available from the Digest of UK Energy Statistics, DUKES [7]). All data is in million tonnes per annum. Gasoline demand has been broadly flat in the intervening time. However, diesel and kerosene demand has increased, reflecting amongst other factors, the impact of economic growth on the haulage sector for diesel, and increased demand in the aviation sector.

Fuel Type	2013	2024
Gasoline	11.5	11.8
Diesel*	22.0	24.9
Kerosene**	11.6	15.1

* Includes both white and red diesel demand
** Includes both aviation kerosene and marked kerosene for heating

UK Product Imports

The changes in refinery capacity and fuel demand described above has led to increases in the volume of imports of fuel into the UK in the intervening period. The table below illustrates the changes to these import volumes between 2013 (taken from the Deloitte report), and 2024). There has been a notable increase in diesel and kerosene imports as expected, with the Middle East and India being major sources of these fuels, especially kerosene.

[6] EIA, US exports of major transportation fuels in 2025 were about the same as in 2024, March 2026, https://www.eia.gov/todayinenergy/detail.php?id=67304
[7] https://assets.publishing.service.gov.uk/media/688a0852048fff613a4d5b90/DUKES_3.2.xlsx

Fuel Type	2013	2024
Gasoline	4.5	4.2
Diesel	10.0	12.8
Kerosene	5.1	11.3

This data does not include any impact of the Grangemouth and Prax closures in 2025, for which no public data is available, but is likely to increase the volume of imports further.

The impact of lower refining capacity

Reduced refining capacity scenarios were included in the original report. Based on the above data, we believe that the 50% refining capacity scenario would be broadly consistent with the current situation in terms of the UK not being able to cover (theoretically or in practice) its diesel or kerosene demand, however, with 2026 refining capacity still over 45Mtcoe we are still in a better position than that scenario, even following the refinery closures of 2025.

Further details on this can be found in the table below, extracted from the report. We see that while the UK refining capacity it is in a considerably better place when markets breakdown – this is intuitive as in an import only scenario, the value of the UK's crude oil production is effectively zero as it is not a useful final product.

Table 12: Volume disrupted under current/reduced/no UK refining capacity scenarios with UK in isolation

	100% UK refining capacity				50% UK refining capacity				0% UK refining capacity			
Pre-disruption position	**Crude Oil**	**Gasoline**	**Diesel**	**Jet Kero**	**Crude Oil**	**Gasoline**	**Diesel**	**Jet Kero**	**Crude Oil**	**Gasoline**	**Diesel**	**Jet Kero**
Production	38	17	15	5	38	8	7	2	38	-	-	-
Consumption	58	12	22	12	28	12	22	12	-	12	22	12
Net Imports (Exports)	20	(6)	7	7	(10)	3	15	9	(38)	12	22	12
Refining cover (%)	*66%*	*148%*	*67%*	*39%*	*136%*	*72%*	*33%*	*19%*	*NA*	*0%*	*0%*	*0%*
UK isolation	**Crude Oil**	**Gasoline**	**Diesel**	**Jet Kero**	**Crude Oil**	**Gasoline**	**Diesel**	**Jet Kero**	**Crude Oil**	**Gasoline**	**Diesel**	**Jet Kero**
Crude oil (loss)/gain	(20)				10				38			
Crude oil stocks	4				4				4			
Net crude oil (loss)/gain	(16)				14				42			
Net crude oil to use	42				33				-			
Crude oil loss (% of consumption)	-27%				17%				0%			
Product (loss)/gain due to crude oil loss		(5)	(4)	(1)		1	1	0		-	-	-
Product imports (loss)/gain		6	(7)	(7)		(3)	(15)	(9)		(12)	(22)	(12)
Product stocks		1	2	1		1	2	1		1	2	1
Net product (loss)/gain		2	(10)	(7)		(1)	(12)	(8)		(10)	(20)	(10)
Refining cover (%)		*108%*	*49%*	*28%*		*84%*	*38%*	*22%*		*0%*	*0%*	*0%*
Effective Refining Capacity	66				33				-			
Difference relative to Base year refining scenario												
Change in Net product (loss)/gain						(3)	(2)	(1)		(12)	(11)	(3)

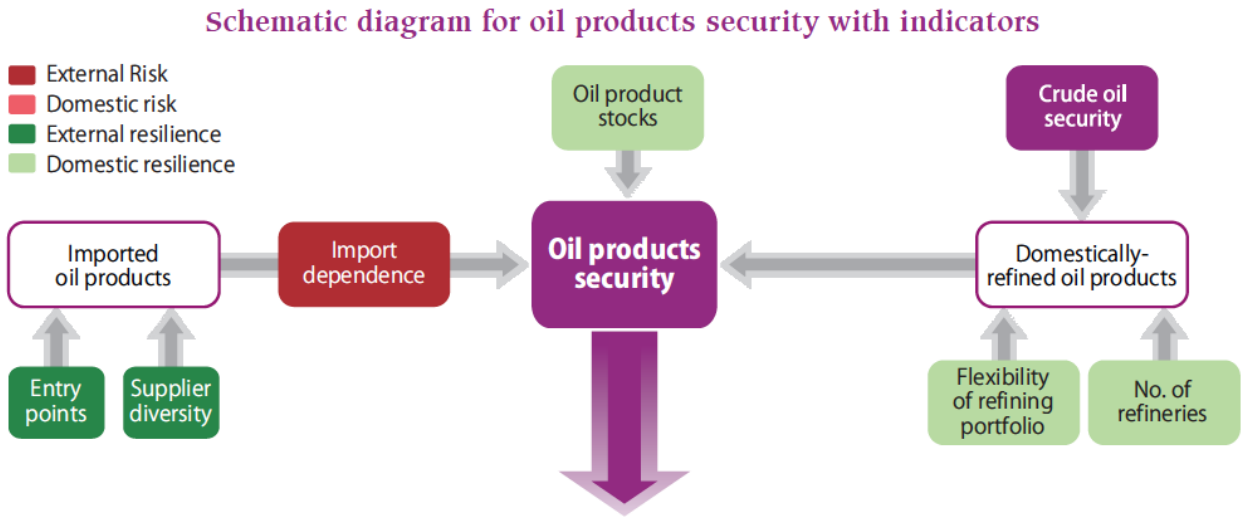
Source: Deloitte analysis. Note: Effective Refining Capacity is assumed to be 95% of nameplate capacity.

Conclusions

The changes in the UK refining capacity, and the fuel demands noted above have increased the volume of imports of finished grade fuels into the UK. This amplifies the importance of the recommendations of the report on the benefits of the refining sector on UK energy resilience. In particular, the finding that the value of refineries increases where the risk of the UK being in isolation is greater.

4. THE INTERNATIONAL ENERGY AGENCY'S MODEL OF SHORT-TERM ENERGY SECURITY

The International Energy Agency's Model of Short-Term Energy Security (MOSES) provides a useful, structured way to assess the UK's downstream oil resilience. MOSES evaluates security of supply through two dimensions - risk and resilience - each split into external and domestic factors. As the assessment notes, MOSES "measures risks of energy supply disruptions and resilience, or the ability of a national energy system to cope with such disruptions".



Applying this framework to the UK highlights how the combination of domestic refining and import infrastructure underpins national resilience.

Oil Products

As seen in the schematic above, oil products supply security considers imports as well as domestically refined products. Under MOSES, domestic risks include "volatility of domestic production" and the "number and flexibility of refineries" for oil products.

The UK's remaining refineries provide important resilience benefits:

- MOSES highlights that the flexibility of refining infrastructure is a key determinant of product security. UK refineries are generally complex and able to process a range of crudes including those from the UK Continental Shelf, which supports resilience during supply shocks.
- Domestic refining reduces dependence on imported middle distillates—products MOSES identifies as particularly sensitive to import reliance, with countries importing ">45% of their middle distillates consumption" moving into higher-risk groups unless supported by strong stockholding or port capacity. Latest data for gas oils (both white diesel and other gasoil) shows that UK refining cover is around 70% (although lower for road diesel), however, kerosene including heating oil is predominantly met through imports.

However, the UK's reducing refining capacity results in:

- Greater exposure to global product markets and potential logistics interruptions or shutting in products from exporting countries.
- Higher sensitivity to disruptions in international diesel and jet markets (as seen in March 2026 where prices for diesel and jet have risen more quickly than petrol in the UK in response to the Iran war).
- Increased reliance on import infrastructure functioning without interruption.

Summary of findings on middle distillates

Group	Countries that:	No. of countries
A	Import ≤45% of their middle distillates consumption and ▮ have ≥9 weeks of middle distillates stocks and are either ▮ in Crude oil groups A through C or ▮ in Crude oil group D with a highly flexible refining portfolio and at least 2 refineries.	9
B_1	Import ≤45% of their middle distillates consumption and are ▮ in Crude oil groups A through C with ≥3 weeks of middle distillates stocks.	10
B_2	Import ≤45% of their middle distillates consumption and are ▮ in Crude oil groups D or E with a moderate to highly flexible refining portfolio and ≥6 weeks of middle distillates stocks or Import >45% of their middle distillates consumption with ≥9 weeks of middle distillates stocks and either moderate supplier diversity or ≥5 oil products ports.	5
C	Import ≤45% of their middle distillates consumption and in Crude oil group E with 1 highly flexible refinery and ≥6 weeks of middle distillates stocks.	1
D	Import >45% of their middle distillates consumption with moderate supplier diversity and 3-6 weeks of middle distillates stocks.	2
E	Import 100% of their middle distillates consumption through 1 pipeline with low supplier diversity and ≤3 weeks of middle distillates stocks.	1

The image above shows the 2011 findings on middle distillates (diesel and jet fuel), with the UK being one of the 9 IEA member countries in Group A "High "Low risk and high resilience" at that time – that rating was also the case for gasoline and other products too.

Considering the UK's status in 2026, however, the situation has worsened for vulnerability of middle distillates and it is a 'high risk and low resilience position' in which the UK now finds itself (Group D). The negative change in vulnerability assessment is due to the large increase in import dependence for both jet and diesel, a direct result of refinery closures, as well as increased demand (2Mt for diesel and 0.3Mt for jet fuel). Imports are now greater than 45% for diesel and jet and with stock levels not having risen as that import dependence has grown.

The UK was and continues to be in a strong position in terms of its import diversity and infrastructure scoring, according to the assessment criteria. However, as 2026 has shown, the model does not adequately account for diversity of supply sources all being affected by a

single point of failure – the Straits of Hormuz. This emphasises that domestic production offers greater certainty against potential disruptions.

Crude Oil

MOSES also assesses crude oil supply security. Under MOSES, high import dependence increases external risk, particularly for crude oil, where countries importing "≥80% of their crude oil consumption" fall into higher-risk categories unless mitigated by strong resilience factors.

While the UK does source most of its crude from imported sources, there are some mitigations, including:

- **Theoretical supply vs Business as Usual:** While 9% of the UK's crude supply to refineries came from the UK Continental Shelf in 2024, this is not the maximum that could have been supplied, but reflects the position of the UKCS as a premium and highly traded crude. While it would not be optimised, UKCS crude could theoretically cover 59% of UK refinery demand (2024).
- **Multiple crude and product import terminals :** MOSES identifies the number of entry points (ports and pipelines) as a key resilience factor for both crude and products . The UK benefits from a geographically dispersed set of deepwater ports (e.g., Milford Haven, Immingham, Fawley), reducing vulnerability to localised disruption.
- **High supplier diversity:** MOSES also emphasises that supplier diversity mitigates import risk. The UK sources crude and products from a broad global mix, reducing exposure to political or regional instability.

Together, these factors place the UK closer to MOSES' mid-range import-dependent profiles (Groups B/C), where high import reliance is offset by stronger external resilience – however, the point above about overvaluing diversity of supply when all sources can be affected by the same Straits of Hormuz chokepoint applies equally to crude as it does to products..

<u>Conclusions</u>

Overall, using the MOSES framework, the UK's current mix of domestic refining and import capability provides a balanced situation for energy security but one that has significantly worsened for diesel and jet fuel over the last decade.

External resilience is theoretically strong under the assessment's criteria, however, as noted above does not adequately account for common points of failure such as the Straits of Hormuz implying domestic supply should be more greatly valued. In addition to that weakness, and as the updated assessment shows, the UK's domestic resilience has weakened as refining capacity has declined due to diminishing global competitiveness.

5. REFINERIES ARE PLATFORMS FOR THE FUTURE

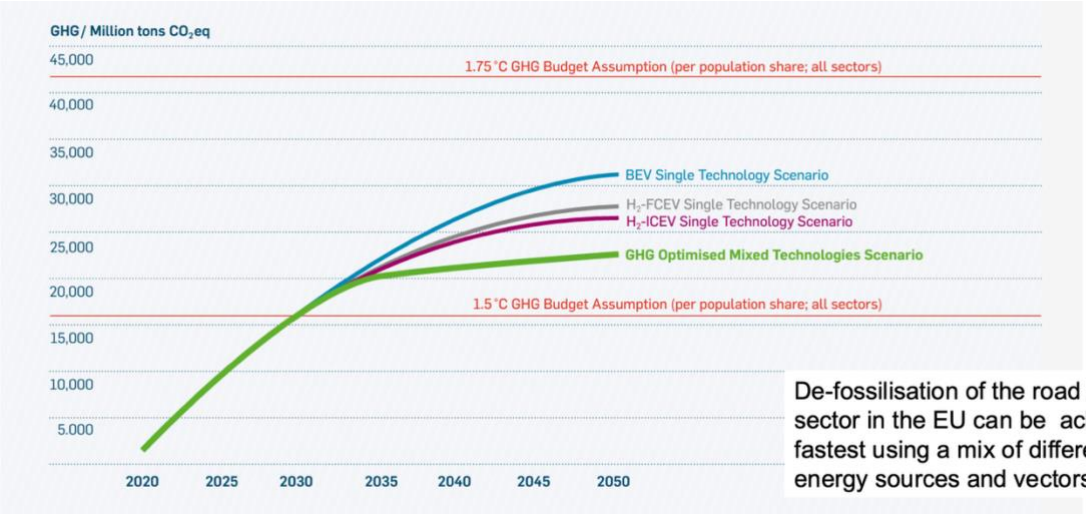
The UK should be technology neutral in policymaking

Policy should support the most efficient decarbonisation pathway or else the consumer and businesses will be encumbered with higher-than necessary and unproductive policy costs. The only proven means to deliver efficient change at a national scale is to allow market forces to drive delivery.

The example of the internal combustion engine phase out by 2030 shows how technology choices are being restricted by poor and ideological policy choices. Electrification of transport is a route to transport decarbonisation, however it must not be the only route and is not technology neutral with assessments required that consider the full lifetime of assets and products. A comprehensive, technology neutral policy framework assessed over the lifetime of an asset is vital. This would lead to a reduction in the emissions of vehicles in their production and end of life treatment, as well as in the energy they require for operation.

Analysis from FVV[8], which assesses pathways to road transport decarbonisation in Europe, shows that a blend of technologies is the fastest and most efficient means to reduce emissions. The report noted that: "using only one technology to achieve carbon neutrality would dramatically delay the achievement of net-zero emissions".

Maximum possible share of climate-neutral energy carriers in the EU road transport sector by 2050 under ideal regulatory framework condition



Source: Climate-neutral mobility that is resource-friendly: How we are speeding up the green transformation – FVV 2023

8 FVV, Climate-neutral mobility that is resource-friendly: How we are speeding up the green transformation, 2022

In previous energy transitions that have occurred, the transitions were typically driven by businesses and consumers, with adoption being as a result of various considerations including:

- Fall in producer cost: The change lowers the producer's costs for an existing need; it is driven by the producer with minimal input from the consumer. The profit driver for the producer is sufficient.
- Fall in consumer cost: A change lowers consumer prices and forces all producers to respond by providing the same product/service at a lower cost. This can also be achieved by growth in the consumer base spreading fixed costs more thinly.
- Capability gain: The change meaningfully improves the consumer experience or has a gain of capability, such that consumers are willing to pay more for the product than before.

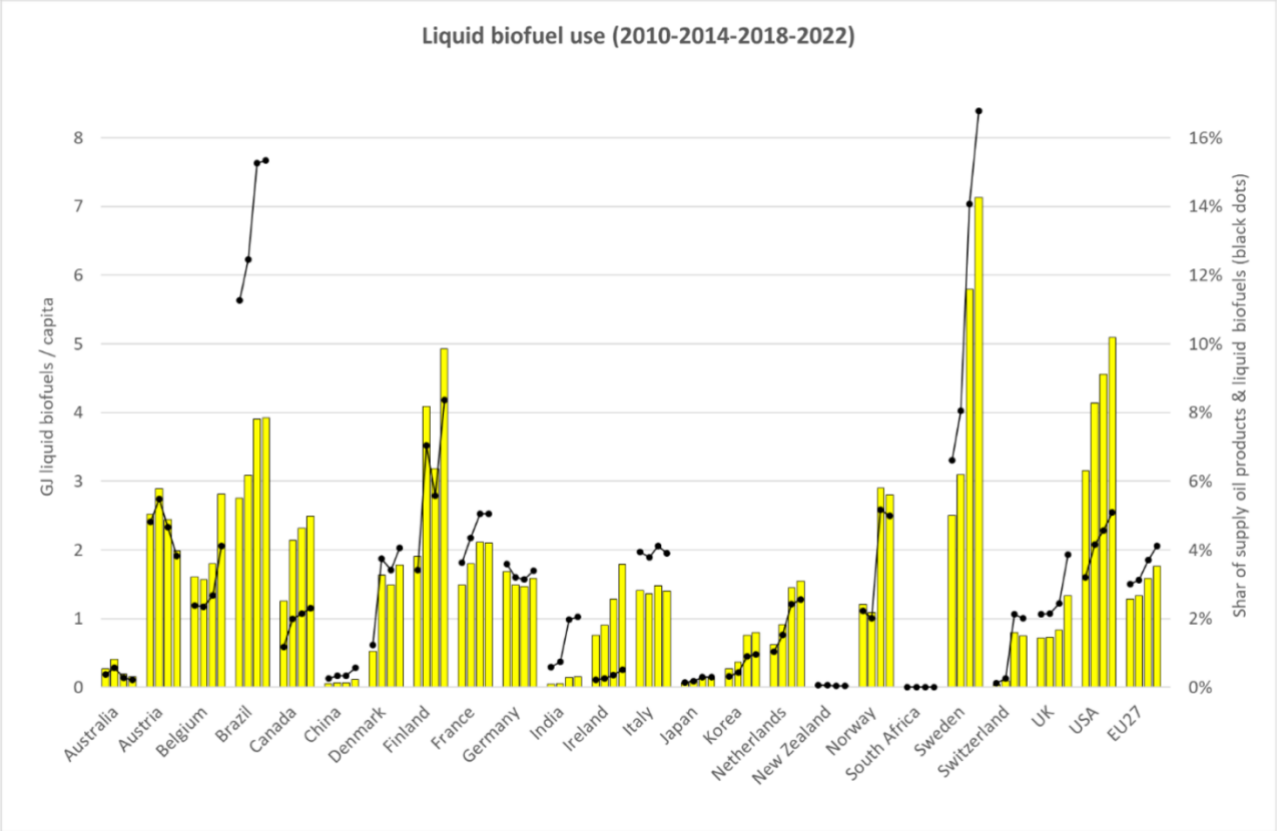
In the UK's current energy transition, policy intervention tends to focus on the supply side or disadvantage hydrocarbon-based options even when they overall contribute to decarbonisation. This introduces interventions and potential distortions in the market which mean that consumers may end up with energy solutions that are not the cheapest (even considering carbon costs).

Given the policy driver in the current transition, it is important that energy options should all be allowed to compete within a technology neutral framework, rather than certain options being required as substitutes for others, or worse being introduced as others are banned. Only technology neutrality and allowing the market to be the principal driver of change will result in a cost-effective and widely adopted transition for all consumers.

The role of lower carbon fuels

Following proposals to change the EU's combustion engine ban, the UK should similarly make greater use of lower carbon fuels, LCFs (biofuels, synthetic fuels and those made from wastes) in a more "technology-neutral" approach that decarbonises the UK's existing fleet .While purchases of EVs and hybrids have grown in recent years, there are 33 million cars that use fuels in the UK today – well over 90% of which will need fuels for decades to come. LCFs offer an immediate, "ready-to-go" solution that is already in fuels today and saves the same amount of carbon each year as removing 3 million cars from the roads. They can be ramped up quickly within the existing mandates policy structure (RTFO as well as SAF for aviation), and do not require consumers to buy new vehicles and offer an efficient and effective decarbonisation of transport by utilising existing infrastructure rather than requiring expansion to the UK Grid.

Evolution of liquid biofuels in the IEA Bioenergy member countries



Source: IEA Bioenergy Countries report 2024, 2024 https://www.ieabioenergy.com/wp-content/uploads/2025/01/CountriesReport2024_final.pdf

As the chart above shows, while there has been a considerable step-up from the 2010-2014 period in recent years in terms of the supply of liquid biofuels into the UK transport sector – which will have continued in its upward trajectory with growth of the RTFO as well as introduction of the SAF mandate. While countries like Sweden Finland and Brazil are the outliers with very high levels of LCF deployment, the UK is still slightly below the EU-27 average and behind the USA indicating there could be room for greater deployment of lower carbon fuels in the UK which would reduce carbon emissions of ICE vehicles.

If there was to be greater policy ambition to deliver lower carbon fuels, as well as addressing key competitiveness issues as highlighted elsewhere (e.g. carbon and energy costs) refineries are well placed to process LCFs more than the case currently, with specialist lower carbon fuels manufacturing plants also potentially being better incentivised following recent closures of bioethanol production in the UK.

It should be noted that the UK imports 90% of the feedstocks for its renewable fuels so the opportunity would be for processing rather than for the full supply chain to benefit, however, there are other opportunities to increase UK feedstocks use potentially through reducing the existing crop cap to allow a wider range of feedstocks such as intermediate crops (certified against relevant sustainability requirements) or those grown on marginal or degraded land that could expand the feedstock base without triggering Indirect Land Use Change (ILUC).

The November 2025 report from Logistics UK "Powering Change" notes the logistics industry needs LCFs at least until Zero Emission Vehicles are commercially viable for all Heavy Goods Vehicle use cases, with the report identifying barriers for zero tailpipe HGVs including "significant challenges on grid infrastructure, costs, payload loss, and technology maturity". LCFs offer immediate impact – whether deployed in logistics or other critical sectors - delivering well-to-wheel Greenhouse Gas emission savings ranging from 76% to 125%. Achieving a 50% LCF uptake in the long-haul HGV fleet would reduce cumulative emissions by 24MtCO2e over the period to 2035 (vs BAU scenario) and require around 1.5 billion litres of additional LCFs vs the current total UK supply. While this would be an ambitious uplift given total RTFO volumes are around 3 billion litres, confidence on additional demand and a clear support for use of LCFs could support investment both in the fuels supply infrastructure but potentially in UK manufacturing of these fuels, although feedstocks would be likely to continue to be sourced from imports.

Many critical services require a reliable fuel supply chain – from hospital generators to emergency services. Drop-in solutions such as renewable diesel (HVO) and biomethane require minimal investment, infrastructure and operational change. This seamless switch is vital for freight logistics which have long payback periods and years of operation and reduces the need for new build infrastructure and consumer behavioural change.

Net zero technologies are integrated to the refining and North Sea base

The UK Government should avoid approaching the need to reduce economy-wide emissions as requiring the managed decline of our sector and the wider oil and gas sector of the UK and instead recognise the strategic value of maintaining and adapting refining and fuel-manufacturing capability with a skilled, safety-driven workforce and world-class industrial infrastructure. Britain has considerable assets and advantages such as its coastal location that allows both import and export products easily and the capability to adjust crude slates, rebalance product slates and maintain supply even when international flows might be constrained. These features as materially advantageous and strategically valuable to energy security but without support and acknowledgement that fossil and sustainable fuels need to work together, investment will flow to the US, the Middle East and Asia, leaving Britain dependent on imports.

The UK can deliver products to any international market. With global demand for liquid fuels projected to remain resilient in many countries rather than shrink, Britain has an opportunity to diversify outputs and secure a competitive export position. UK refineries should be preferred suppliers for overseas customers, given they are generally lower carbon intensity producers than competitors elsewhere.

It is also an asset as set out in the energy security of supply sections of this response, that having a successful and resilience refining sector alongside a productive North Sea basin benefits the UK economy and whole energy system. The UK's energy system is highly

integrated, with the value chain extending from North Sea extraction, through refining transport and processing, to refining and final consumption. Likewise, much of the UK's North Sea production plays an essential role in wider European and UK fuel security – with 65% of UKCS crude oil exported returning to the UK as refined products.[9]

The regulatory and technical issues associated with processing renewable feedstocks make investment challenging as regardless of progress made and efficiencies, these products are still more expensive than their fossil equivalents – which is key given costs of living considerations. But with the right policy framework, refiners will be able to increase investment in resilient fuel supply today and the technologies and products needed for net zero. These are billion-pound growth markets – subject to demand measures already supported in policy - and the UK has the expertise and infrastructure to compete.

Refineries are not merely fuel producers but industrial anchors. They offer essential scale as for new technologies (e.g. CCUS or hydrogen) and infrastructure – such as logistics hubs for the delivery of SAF into the existing supply chain. Refining operations are co-located manufacturing and logistics sites where existing fossil fuel assets provide the immediate demand, technical expertise and cash flow necessary to enable multi-billion-pound investments in vital emerging technologies. That is why co-production remains most efficient at-scale production pathway.

The evidence for export and investment potential

Exports are vital to the sector. With the right conditions, UK refineries could expand their exports (worth £11bn in 2024), strengthening Britain's position as a clean energy leader as well as delivering investment and therefore a continuing and resilient UK supply chain given UK demand remains in all future scenarios.

- UK blending requirements for SAF will increase fivefold by 2030 under the SAF Mandate and the Humber refinery is already producing it at scale, with plans to expand further. Government projections show there will be at most a small reduction in the amount of fossil jet alongside SAF to 2040[10]. This means that even if the SAF mandate of 22% is met in 2040 then the UK will still need over 10 Mt of conventional jet fuel – three times what is produced today. Therefore, the UK needs to retain all UK refineries for its jet demand even in 2040 and even if very ambitious targets are met.

[9] Wood Mackenzie, The UK's critical role in Europe's integrated oil system , November 2025 https://www.woodmac.com/news/opinion/uk-critical-role-in-europe-integrated-oil-system

[10] Shows 2025 demand of 11.5Mt (all fossil derived) and 2040 total demand of 13.3Mt (of which 22% would be SAF under the mandate) meaning 10.4Mt fossil jet demand - DfT, Pathway to net zero aviation: developing the UK sustainable aviation fuel mandate, Final Stage cost benefit assessment Fuel Demand, April 2024 https://www.gov.uk/government/consultations/pathway-to-net-zero-aviation-developing-the-uk-sustainable-aviation-fuel-mandate

- Refineries are among the UK's largest hydrogen users and producers. With investment, they can provide lower carbon hydrogen, creating supply chains for transport and heavy industry. Refineries should be an essential stepping stone in the build out of hydrogen networks, as existing production could be converted to low carbon hydrogen and/or refineries could be offtakers for industrial scale-hydrogen production, helping to unlock investments in hydrogen production and decarbonise direct emissions.
- Refineries are central to industrial clusters like the Humber and the North-West, where carbon capture will be deployed at scale to decarbonise heavy industry.

The potential of the sector is demonstrated by the projects that refineries have already and are considering investing in, which includes both investment in fuel supply today as well as in lower carbon technologies.

Investments:

- The Esso Fawley Refinery recently completed delivery of a £1 billion investment to increase low sulphur diesel output and reduce UK import dependence.
- Valero has invested £4 billion in the US in LCFs such as ethanol and renewable diesel production, including £315m in a SAF facility at the Port Arthur site.

Proposals:

- EET Fuels (Stanlow) has invested £1.2 billion to reduce refinery emissions by 95% by 2030 and is central to the HyNet carbon capture and hydrogen cluster.
- Phillips 66 is developing large-scale carbon capture projects as well as recently signing an agreement as a potential offtaker of European green hydrogen from Uniper, a European producer. Phillips 66 is the only at scale producer of sustainable aviation fuel (SAF) in the UK, providing SAF to Heathrow airport on a multi-year contract.

<u>Conclusions</u>

A well-designed transition would prioritise continuity, capability and competitiveness. This includes supporting investment that allows existing sites to manufacture a broader slate of lower carbon products while retaining the core engineering, operational and process expertise that already exists.

6. PROGRESS TO DECARBONISE THE SECTOR

Our 2020 report "Transition Transformation and Innovation" considered UK fuels sector pathways to Net-Zero. For each Net-Zero scenario considered, there are many possible pathways to achieve Net-Zero and the report showed one such pathway, building on modelling carried out by Concawe. Based on the European Commission's Clean Planet for All 1.5ºC scenario, the Concawe work showed that, in combination with electrification and hydrogen, road transport can reach Net-Zero emissions and aviation, and marine transport can achieve a 50% reduction in GHG emissions with an implication for the role of carbon offsets (Greenhouse Gas Removals / GGRs) in a net zero economy.

The report showed one illustrative pathway that could deliver a Net-Zero outcome for the downstream oil sector, with the total emissions of manufacturing and lifecycle emissions of LCFs all included. It identified certain technologies that would need to be deployed as well as indicating the scale of those technologies. As noted at the time, this is just one potential pathway and the actual delivery could look quite different depending on many factors such as how technologies develop and are ready to be deployed, the economics that determine investment and of course the influence of government policies. Nonetheless, it is useful to consider the technologies and trends highlighted in that report and consider how progress on their development and deployment looks in the half-decade since publication.

- The UK specific pathway suggested ongoing efficiency improvements in refineries resulting in lower carbon emissions of around 0.5% per year.
- With growing hydrogen production, it was considered that refinery demand for natural gas as well as (unabated) refinery fuel gas could fall and be replaced with hydrogen.
- As early as 2030, it was thought lipid coprocessing could increase from early levels to as much as 10% of inputs and that early lignocellulosic biomass plants could be up and running with <0.15Mt/yr output.
- In later decades, e-fuels using captured carbon could be producing over 2.6Mt/yr with use of lipid feedstocks rising to as much as 6.5Mt/yr by 2050 and lignocellulosic biomass plants increasing to an output of 0.86Mt/yr for the UK.

The combination of measures and trends in the pathway, would have seen total products demand of ~16Mtoe in 2050, with production emissions of around 1.4MtCO2 pa, as well as carbon capture related and GGR offsets in excess of 20MtCO2 pa.

While delivery of technologies such as carbon capture and hydrogen was not modelled in detail in the TTI report, it is possible to set out how far the UK has progressed in its delivery towards net zero for the sector from policy announcements made around 2018-2022 period on these key technologies.

Carbon Capture, Usage and Storage (CCUS)

In 2021, the Government set out an ambition in its Net-Zero Strategy for four CCUS clusters capturing 20 to 30 million tonnes of carbon dioxide per annum by 2030, however, these ambitions have been noted by the National Audit Office as unlikely to be met[11].

Currently the Government is supporting industry through the deployment of CCUS clusters in a fundamentally inequitable, staggered manner that preferences certain regions and industrial assets over others. The two so-called "Track-1" clusters are HyNet (in the North-West of England and North Wales) and the East Coast Cluster in Teesside. In addition, eight emitter projects were selected to negotiate for support through the proposed business models in 2023. Additional projects, under the "Track-1 expansion", were proposed in late 2025.

Despite these the progress to date, delivery of CCUS at scale is not yet happening in practice. In December 2024, the government announced the first two projects in ECC would have funding available of up to £21.7 billion over 25 years. Projects within the ECC cluster were set to begin construction from mid-2025 and become operational from 2028. While in April 2025, the government announced that the Transport and Storage Network for HyNet reached FID. This shows some progress, but without any carbon yet being captured and the timelines for Track 2 projects more uncertain, the 2030 ambition appears unlikely to be met as it will take years for even these first projects to be in operation at all, and longer to scale up to.

We note that the initial "Track 1" clusters are both based around pipeline transport to the carbon storage location. This provides a potential CCUS solution for two of the UK's remaining refineries which are able to access the pipeline network. The other two remaining refineries will not have access to this infrastructure and will need to rely on non-pipeline transport (NPT) solutions and access to the pipeline network. NPT transport of CO2 will incur additional costs due to the additional transport legs involved (likely to be ship based due to scale) in a similar way to being developed in Norway through the "Northern Lights" project [12]. There may not be sufficient capacity available to support NPT CCUS within the available infrastructure. A suitable mechanism needs to be established in order to create a level playing field for all UK refineries to access suitable CCUS infrastructure, regardless of whether they have direct pipeline access to CCUS infrastructure, or are using NPT based solutions.

Low carbon hydrogen

In 2021,[13] HMG set out its ambition for 10GW low-carbon production capacity by 2030 in the UK, supporting industrial decarbonisation, domestic heating trials (20% mix), and transport, while developing a core network and establishing standards to meet Net-Zero goals.

[11] New Civil Engineer, "UK will 'struggle' to meet 2030 CCUS ambitions, NAO warns", August 2024, https://www.newcivilengineer.com/latest/uk-will-struggle-to-meet-2030-ccus-ambitions-nao-warns-06-08-2024/

[12] https://www.equinor.com/energy/northern-lights

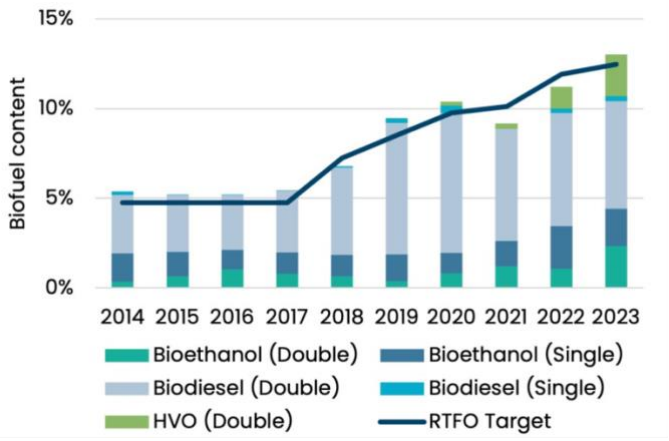
[13] https://www.gov.uk/government/publications/uk-hydrogen-strategy

As part of the Government's hydrogen programme, 27 projects were selected in 2025. Including the First Hydrogen Allocation Round, there are now 38 projects selected. The projects are for the use of hydrogen across sectors, including in power generation, glass manufacturing, brick making and SAF production, however, it should be noted that those projects do not reflect industrial-scale production of low carbon hydrogen.

As with CCUS, actual deployment of low carbon hydrogen has so far been delayed, although EET Hydrogen (based at the Stanlow refinery) hopes to finalise the government support package for its 350 MW blue hydrogen plant in 2026. The 10GW ambition for 2030 will almost certainly be missed as this project while the biggest in the HAR process, is still just 3.5% of the target and not yet confirmed and no clear pipeline of projects that could be delivered by 2030.

Lower Carbon Fuels

Lower carbon fuels already had policy support through the Renewable Transport Fuels Obligation, which requires fuels suppliers to deliver a specified volume of renewable fuels (or pay a buy out sum if they do not). The RTFO only applied to road transport fuels and Non Road Mobile Machinery at that point, with plans for lower carbon fuels use in maritime and aviation uncertain but expected to be progressed to meet Net-Zero.



There has been solid progress in the increasing delivery of lower carbon fuels in the UK transport fleet, supported by the RTFO, as well as market driven purchases of Sustainable Aviation Fuels, and since its introduction in 2025, the SAF Mandate too. Deployment of lower carbon fuels in maritime has not progressed quite as quickly but is expected to begin shortly as the maritime sector enters the UK ETS.

In 2024, 3.8 billion litres of renewable fuel were supplied with an average GHG saving of 77.1%, including indirect land use change, when compared to their fossil fuel equivalent. In 2020, the RTFO target for the proportion fuel that was renewable, including double counting waste-derived renewable fuels, was 9.75%. This rose to 13.55% in 2025 and is due to rise to 16.3% in 2030. As the chart shows, RTFO targets have generally been met (once accounting for double counting fuels and the roll-over of certificates from the previous year) meaning that the UK sees delivery of renewable fuels each year equivalent to taking 3 million cars off the road.

Looking beyond road transport and NRMM fuels, with Sustainable Aviation Fuel (SAF) being delivered in increasing volumes since their UK first delivery (as captured in the RTFO statistics) in 2021 to a point where 2024 saw supply of over 300 million litres of SAF. The

introduction of the SAF Mandate from 1st January 2025, which is a similar obligation to the RTFO but for jet fuel suppliers, is planned to deliver a growing volume of SAF into the UK, starting with a 2% obligation in 2025 which will grow to 10% by 2030. In the first year of the Mandate, the industry delivered 2.36% SAF supplied (based on provisional DfT statistics), however, as with renewable fuels delivered under the RTFO, most of the feedstocks for SAF are imported from overseas, with the Humber refinery the only UK at scale SAF producer at present.

Refinery energy efficiencies

The 2021 pathways work also noted that refinery energy efficiencies could be expected to reduce emissions over time, however, at a scale far lower than disruptive technologies like carbon capture. In 2025, Fuels Industry undertook a revised analysis of energy efficiency improvements with DESNZ officials following engagement directly with UK refinery operators. These trends covered using technologies such as improved furnace efficiency, process unit optimisation, flare gas recovery, and replacement of steam turbines with electric drives.

Both Business As Usual (BAU) and Maximum Technical Potential (MTP) scenarios were considered with the range of capital costs between the two being £290m - £1.4bn between the 2022 baseline and 2050 with refinery emissions savings between 6.6% and 13.2%.

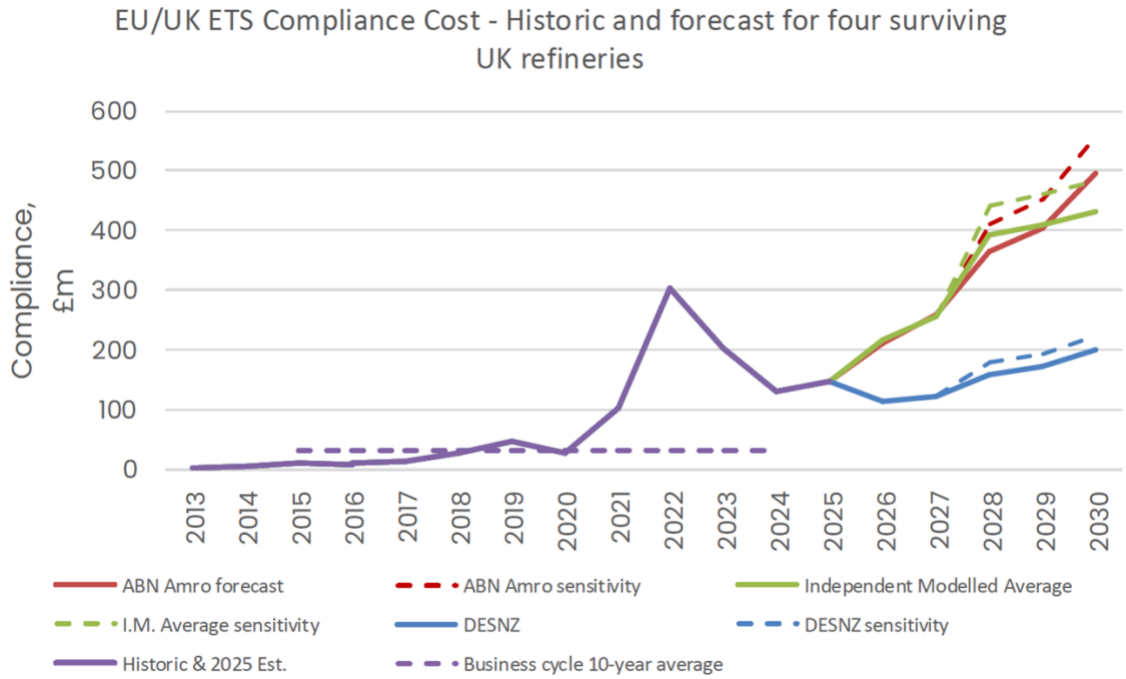
Across the period, the overall average of around 0.5% annual improvement from the TTI work still holds, however, efficiency improvements in UK refineries over the past 5 years are difficult to assess directly given both refinery closures but also new units being deployed meaning the baseline is not the same.

7. A LEVEL PLAYING FIELD FOR UK INDUSTRY – THE NEED TO ADDRESS CARBON LEAKAGE

The unfair advantage of carbon pricing harms competitiveness

The UK's current policy and investment framework fails to adequately mitigate carbon leakage nor reward the decarbonisation efforts of UK industry. It is essential that the UK can show it is a low-cost place to do business with a low regulatory burden, if it is to compete for investment. All UK refineries and much of the wider fuels sector is owned by global businesses which allocates capital across a global portfolio. Therefore, UK refineries must not just be competitive against their nearest European neighbours, but in the global market in which they operate which includes regions that do not have carbon pricing policies such as Asia, the Middle East and the Americas. If they aren't competitive, then they are less likely to receive investment allocated by parent companies.

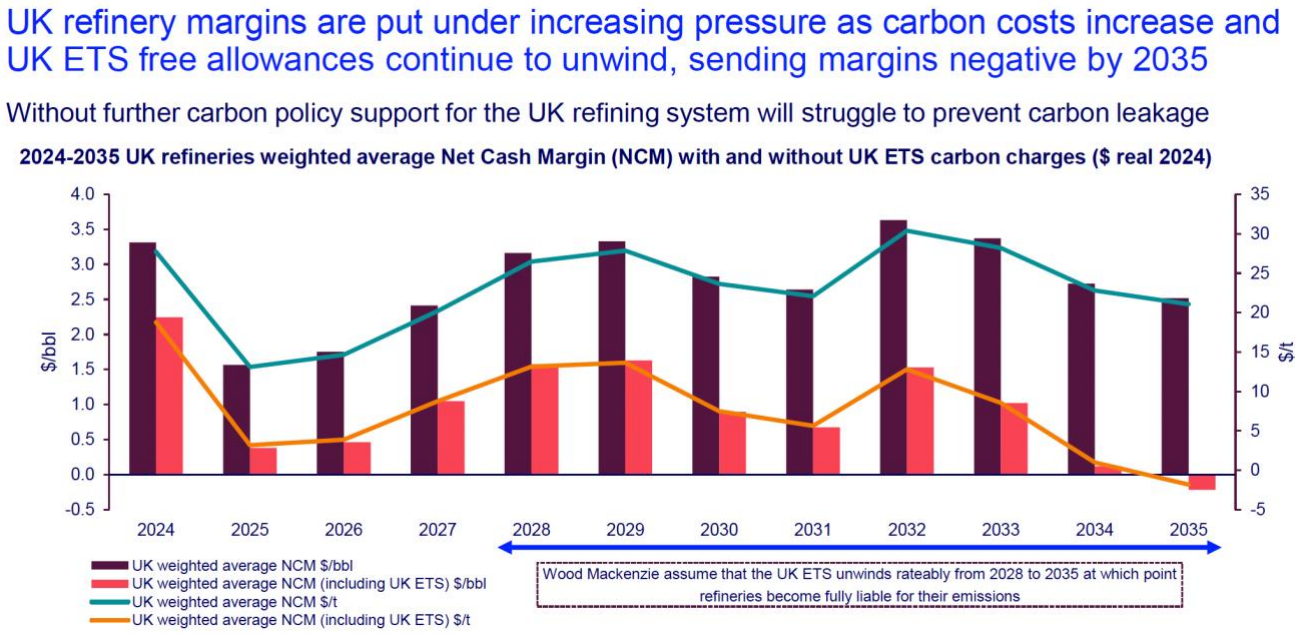
However, refineries in the UK are competing with one hand tied behind their back as they face up to £400 million a year in carbon costs every year (2022 cost for 6 refineries), which we assess could reach £600m (for four remaining UK refineries) by 2030 as shown in the chart below. Meanwhile competitors in the US, Middle East and India face no equivalent carbon pricing, giving them an unfair cost advantage even when they are less carbon efficient.



Source: Fuels Industry UK analysis (NB ETS future costs as per ABN Amro forecast ; comparison is modelled average from GMK. Assumes benchmark changes from 0.0228 current to 0.019 DESNZ estimate in 2028, Aligns with EU leak indicating benchmark reduces by "27% to 34 % with medium certainty" vs EUETS phase 3 (0.0295))

This fundamentally disadvantages British refiners and drives out our more carbon efficient domestic production, by making imports cheaper and limiting export opportunities. The result is that we export jobs, emissions and investment, and undermine our own resilience. This also causes an increase in global GHG emissions due to carbon leakage. This is when production

moves to locations and facilities with a higher carbon intensity. This strong risk of carbon leakage was confirmed in the third party word undertaken for Fuels Industry UK in 2025 with the chart below emphasising that UK refinery margins are expected to move negative by 2035 unless there is a CBAM introduced:



A solution, if the UK is to retain ETS, is critical: a Carbon Border Adjustment Mechanism (CBAM) with an effective export mechanism to put everyone on a level playing field. Other sectors (e.g. cement, steel) have been included in the CBAM. As we meet the Government's criteria, we should have one too – for both imports that compete with our own domestic supply and for UK refinery exports.

At present, the country is experiencing deindustrialisation rather than decarbonisation because carbon leakage mitigation policy is not being delivered well enough. Recent announcements have not benefitted the refining sector, with the ETS Free Allowance Allocation review likely resulting in a diminished level of free allocations and therefore growing carbon costs for the sector beyond 2028.

Given the current trend of closures and March 2026 communication from HM Treasury that refined products will not be in the UK CBAM from January 2028, other means to level the playing field if a CBAM cannot be delivered for refining should be considered urgently. It is not reasonable for the UK to continue to deindustrialise through carbon taxes that the rest of the world are not implementing. The Association has put forward many options to government on how the ETS scheme could be reformed, but so far all have been rejected. It is noted that

suggestions on ETS temporary suspension or even removal have been put forward in the UK and in the EU[14], [15] while other means to offset ETS costs could be possible.

Conclusions

Address carbon leakage more effectively by offering a level playing field globally for refineries on carbon costs. This should include a CBAM that includes the sector from January 2028 with an effective export mechanism.

If a CBAM including refined products cannot be delivered quickly, then other means of delivering a level playing field on carbon costs to compete with international competitors in global markets should be considered urgently.

The UK's high energy prices deter investment

Everything that makes it impossible to invest in the UK should be seen by Government as a vulnerability in the nation's energy security, because a lack of investment leads to long-term attrition of the sector. The best way to ensure resilience in the sector, and therefore in the UK's security, is to ensure this is an attractive country to invest in.

High energy prices are another deterrent to investing in the UK. The UK's electricity costs are the highest in the world while industrial gas is four times the cost here than in the US Gulf Coast. The British Industrial Competitiveness Scheme (BICS), which was announced in November to address such costs, does not include the refining sector in scope. The already implemented Supercharger scheme cannot be accessed to a meaningful degree by the sector, despite its being potentially eligibility, as its design does not account for the sector's complex electricity arrangements and self-generation capability.

Nevertheless, are clear that even if the refining sector was effectively brought within the scope of schemes such as the Supercharger, this does not offer anywhere near the scale of relief required compared to the cost burdens imposed by ETS. The benefits that may be derived from including refining with BICS, the Supercharger or similar schemes would be minimal and cannot be considered an alternative by UK Government to addressing the existential risk facing our industry from ETS.

With effective policies, we could keep investment in the UK, protect skilled jobs, strengthen energy security, and cut emissions credibly. Without it, we lose out on growth, resilience and climate credibility.

[14] Daily Telegraph, "Jim Ratcliffe backs Tory plans to scrap net zero taxes, 2nd April 2026, https://www.telegraph.co.uk/business/2026/04/02/ratcliffe-backs-tory-plans-to-scrap-net-zero-taxes/

[15] Politico, "Italy calls for suspension of carbon price in major attack on EU climate policy", 26th February 2026, https://www.politico.eu/article/italy-calls-for-ets-suspension-pending-overhaul/

Conclusions

The refining sector should be included in the eligible sectors for high industrial energy cost mitigations. In the case of existing schemes where there is already potential eligibility, the schemes' design should ensure that refineries are not excluded due to the structure of their energy supply nor business reporting structures and that, if one refinery meets the criteria, then all UK refineries should be considered eligible.

Beyond scheme eligibility there should be a wider concerted effort by Government to reduce the discretionary policy costs that make industrial energy prices so high in the UK.

Refineries need better support schemes

The UK's complex carbon capture sequencing and business model approach system has created several unfavourable outcomes the appearance of restricting access to investment incentives. This is a concern because CCUS (including as well as hydrogen firing and non-pipeline transport) is vital for refinery decarbonisation. As a result of the US approach to incentives, there has been a significant increase in carbon capture deployment coming online in recent years with north America having almost 50% of operational CCUS capacity in February 2026 according to the IEA.

UK schemes included in Track 1 have been left waiting for Government finance and those in Track 2 are left unsure what support they may get. Meanwhile those outside the process are left at a significant disadvantage, reflected in the decision announced in 2024 by ExxonMobil not to pursue its carbon capture project on the south coast. UK businesses need a rationalised approach to the Track process and clusters which rewards entrepreneurialism.

Conclusions

The UK should learn from other jurisdictions like the United States in designing simple and efficient support schemes. The US approach focusses on 'carrots' such as tax breaks which are available to all companies who can meet their requirements.

Refineries need the regulatory burden lifted

Our response to the *Unlocking Business: Reform Driven by You* consultation[16] (Department for Business and Trade, 2025) detailed a number of examples about how regulations are imposing unreasonable costs and limiting commercial opportunities.

i. The volumes of lower carbon fuels are currently billions of litres in any calendar year for fuel suppliers but highly detailed verification is required precisely to the litre, for little practical benefit. By contrast, other reporting (e.g.: for DESNZ) is only required at

[16] https://www.fuelsindustryuk.org/media/lsccj0t4/call-for-evidence-unlocking-business-reform-driven-by-you.pdf

the tonne level which is more proportionate – even for the millions of tonnes delivered annually.

ii. Proposals consulted on in 2025 suggest that all UK companies over a certain size will need to deliver climate related transition plans, to better inform investors. However, investors are not able to invest in the UK-registered private subsidiaries of foreign multinational parents. Therefore, this proposal has no practical benefit for the fuels sector while creating a significant new reporting requirement for companies. An exemption to the reporting requirement is required as these parent companies often follow internationally recognised frameworks which offer equivalent coverage with the UK sustainability disclosures. Additionally, private businesses should not be required to divulge their future decarbonisation plans in a public forum when those plans are confidential. Where there are alternative shareholder communication channels (as will always be the case for privately held subsidiaries) this requirement should be removed.

iii. Development fuels obligations were intended to stimulate innovation but, due to an unclear and restrictive process with lengthy approval times, progress has been very constrained there has not been significant investment in supply. There have been a number of factors involved in this, namely:
    a) Uncertainty over the requirements for development fuels, how the requirements are applied and the approval process involved. This includes a lack of rigorous grandfathering in the approvals, leading to significant investment risk.
    b) A lack of clarity on whether the drop in requirement applies to summer or winter grades of petrol and diesel (or intermediate grade for petrol)
    c) Concerns that change in the BS EN 228 petrol or BS EN 590 diesel specifications could lead to development fuels being ineligible (with no grandfathering of the fuel quality requirement)
    d) A lower than needed development sub-target buy-out price making developing business cases challenging; however, if higher it may incentivise development fuels while increasing costs for consumers.
    e) For aviation and marine applications, the fact that any lower carbon fuel used could, if found to not be sustainable, incur an obligation in its own right (as required under the prevailing primary legislation).

iv. It should be noted that the aviation option has been removed following the start of the SAF mandate in January 2025 and it has been suggested in recent years that the RTFO guidance should be updated to amend the development fuel requirements: in particular the drop-in renewability requirement. This does little for investor certainty in development fuels, particularly given the significant investment sums required.

v. Proposals to run trials where lower carbon feedstocks would be co-processed alongside fossil fuels have historically seen delays due to insufficient resources at the regulator to efficiently process applications. Similarly, where a regulator has

been supportive in allowing industrial trials, issues have arisen when companies look to increase the volumes and the ways in which feedstocks are processed. It should be noted that there has been very recent change to allow permits to be varied for standard rules to allow industrial trails, helping to streamline the process for getting permission to carry out trials.

vi. Since 2022, companies have been working with the EA trying to develop a Resource framework to use Tyre Pyrolysis Oil as a feedstock with its movement regulated under REACH, rather than as a waste. Despite high charges from the regulator, The process has still not completed.

The examples listed above are symptomatic of a regulatory burden that obstructs business and imposes an unnecessary, ineffective hurdle to Net-Zero. Alongside specific concerns such as these, the fuels sector also has 40 separate reporting requirements which contain considerable overlap and duplications of reporting. For example, areas such as company data, inventories, supply, production, governance and infrastructure are reported into at least 10 different points. Finding means for companies to only report such information once would offer a relatively simple means to reduce existing reporting burdens.

Align and simplify current lower carbon fuels regulation

The UK imports the majority of its LCFs, because the incentives through the Renewable Transport Fuel Obligation and SAF Mandate do not favour domestic production. Despite providing a helpful market signal, they have primarily driven economic growth in jurisdictions abroad such as the US and Asia.

Consumer awareness of LCFs is low, despite growing interest in low carbon technologies in transport. To maximise the decarbonisation potential of LCFs, the UK should consider introducing consumer incentives for LCFs use that could grow demand. Suppliers alone cannot encourage uptake of a product that is more expensive to produce.

In addition, domestic requirements for LCFs are typically more onerous than those required by other jurisdictions, increasing the costs of supply in the UK. For example, the cap on using Hydroprocessed Esters and Fatty Acids as a feedstock for Sustainable Aviation Fuel (SAF) supply does not apply in the US or EU. There are also other feedstocks which are currently not permitted for use in the UK at all, reducing the options available and increasing costs for producers and suppliers. For example, the US particularly benefits from crop-based feedstocks to help underpin large-scale investments.

<u>Conclusions</u>

The Government must align and simplify current regulation as part of a strategy to show investors that Government is committed to their long-term use in decarbonising the economy.

Refineries need a new approach to planning and environmental permitting

Investment decisions are complex and long-term, but too often they are held back by regulatory delays. A new approach to planning and environmental permitting is needed based around presumption of approval with consistency and coordination, with more centralisation for critical infrastructure. Integration would also be beneficial in areas like data collection where the administrative burden could be reduced by removing duplication across different public sector bodies.

The downstream fuels sector has a strong record of environmental performance. Over the last decade, UK refineries have reduced non-greenhouse gas emissions at a faster rate than the national average on a per unit / throughput basis. With NMVOCs and PM10 both having been cut by half at refineries in the last 10 year reporting periods for each. Therefore, regulators should address industry concerns about disproportionate approaches.

For example, the zero-change approach adopted by the regulators is disproportionate and would not apply to a new standalone plant. These disproportionate approaches increase costs and delays for vital decarbonisation projects, because effects are inevitable with deployment of new technologies – such as increased noise, water use and effluent pollutant levels. The urgent need for these projects and their wider significance for the economy, employment, energy security and net zero must be taken into account when considering the environmental impacts of proposals.

Conclusions

Regulators must be agile, offering timely engagement and taking an open approach that enables the use of new equipment and ways of working. Risks should be managed in a transparent and cost-effective system that makes pragmatic use of best practice and applies consistent evidence-based decisions.

8. DEMAND AND PROJECTIONS

Understanding future demand for liquid hydrocarbons is central to shaping credible, resilient policy for the UK's fuels sector. A review of historic consumption, national projections, and international outlooks shows that liquid hydrocarbons, whether fossil-derived or from sustainable feedstocks, will remain essential to 2050 and beyond. This has profound implications for the UK's fuel resilience.

UK Demand: Declining, but not disappearing

Historic petroleum product demand in the UK has been shaped by economic cycles, efficiency improvements (of vehicles and refining), and policy interventions (e.g. dieselisation of the car fleet). However, the post-pandemic picture remains incomplete; the available data does not yet show a fully stabilised "new normal" for consumption with increases in demand being seen since COVID, but still less than 2019 levels. Against this backdrop, there is uncertainty on future demand for fuels, but it is notable that all projections still see notable need for hydrocarbons – both fossil-derived and lower carbon.

The DESNZ reference scenario, which incorporates existing and stated policies alongside central assumptions for fossil fuel prices and economic conditions, projects a modest reduction of less than 30% in petroleum product demand by 2050. It illustrates that even under current policy ambition, hydrocarbons remain a substantial component of the UK energy system.

By contrast, the Climate Change Committee's Balanced Pathway — explicitly designed to achieve net zero — projects a reduction in hydrocarbon demand of around 50% by 2050 when considering all hydrocarbons (with fossil oils being around 9Mt but hydrogen and SAF and shipping fuels seeing increases in their projections). Even in this most stretching scenario, demand for existing and potential refinery produced products persists at significant scale. The CCC's modelling of possible refinery outputs, including bioenergy-derived liquids, reinforces the point: a net-zero UK still requires a sizeable volume of liquid fuels for sectors that are hard to electrify or where alternatives remain technologically or economically constrained.

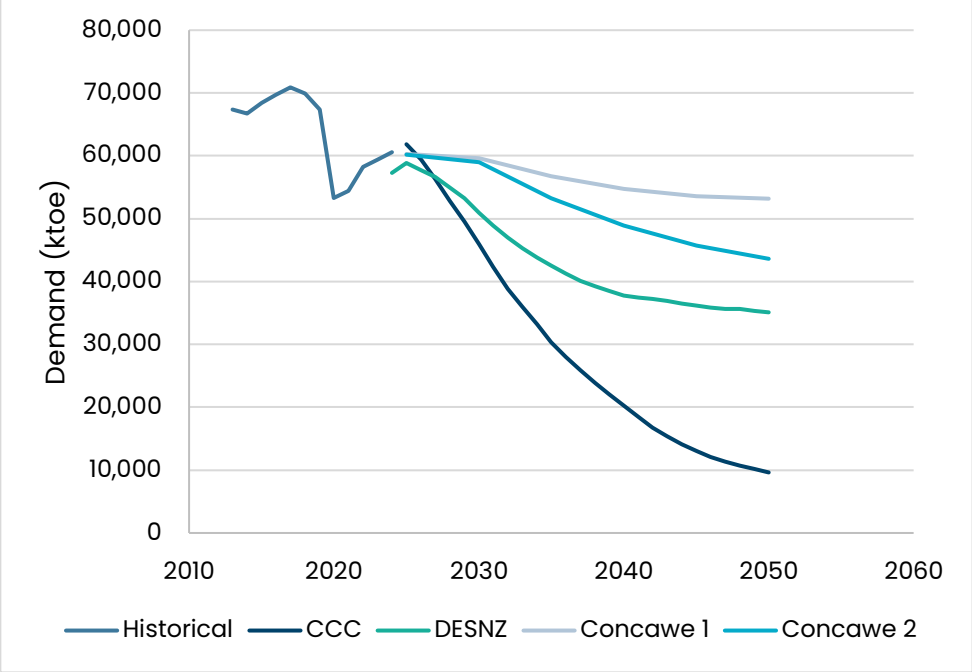
The Concawe 1.5°C-aligned scenarios add further nuance as they consider far greater use of lower carbon fuels than other projections. Concawe's two pathways: one deploying low-carbon fuels across all transport modes (shown as Concawe 1 in the chart overleaf), the other focusing on heavy-duty, maritime, and aviation (Concawe 2) — both show sustained demand for liquid energy carriers which would could still meet the UK's net-zero ambitions (in particular for transport decarbonisation), while offering a more pragmatic pathway to its delivery rather than the tailpipe focussed current UK policy.

Taken together, these projections demonstrate a consistent conclusion: UK demand for liquid hydrocarbons will remain material for decades, even under the most ambitious

decarbonisation pathways. The scale of domestic demand decline varies, but the persistence of demand does not.

The charts which follow show the combined overall projections, as well as breakdowns from DESNZ and CCC sources to give a greater indication of refinery related products i.e. demand for hydrocarbons including fuels and other products derived from both fossil and lower carbon feedstocks.

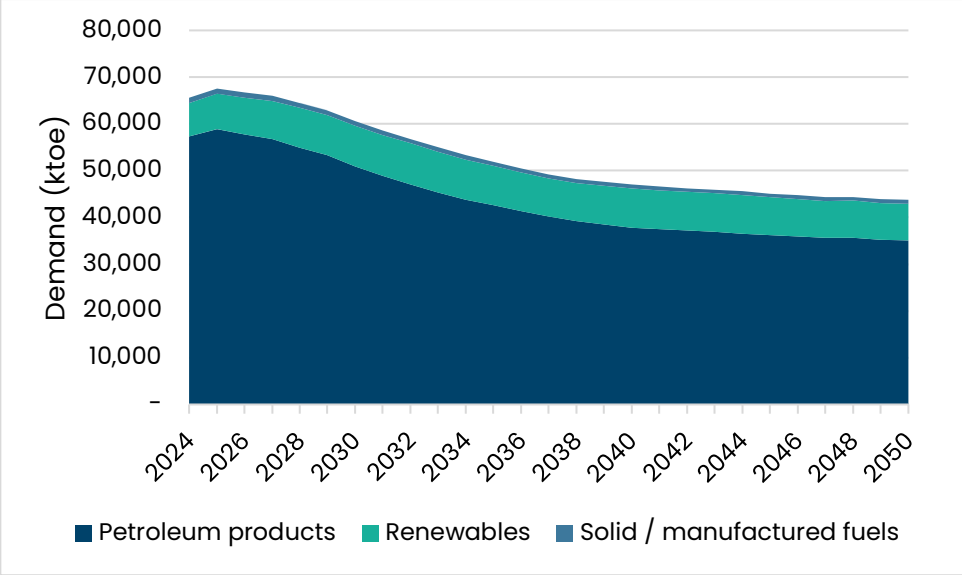
UK demand for liquid hydrocarbons projections (including LCF component for Concawe projections)



Source: FIUK analysis of DESNZ Emissions and Energy Projections, Climate Change Committee Balanced Pathway CB7, and Concawe 1.5oC pathways (1 for all transport, 2 for hard to decarbonise transport)

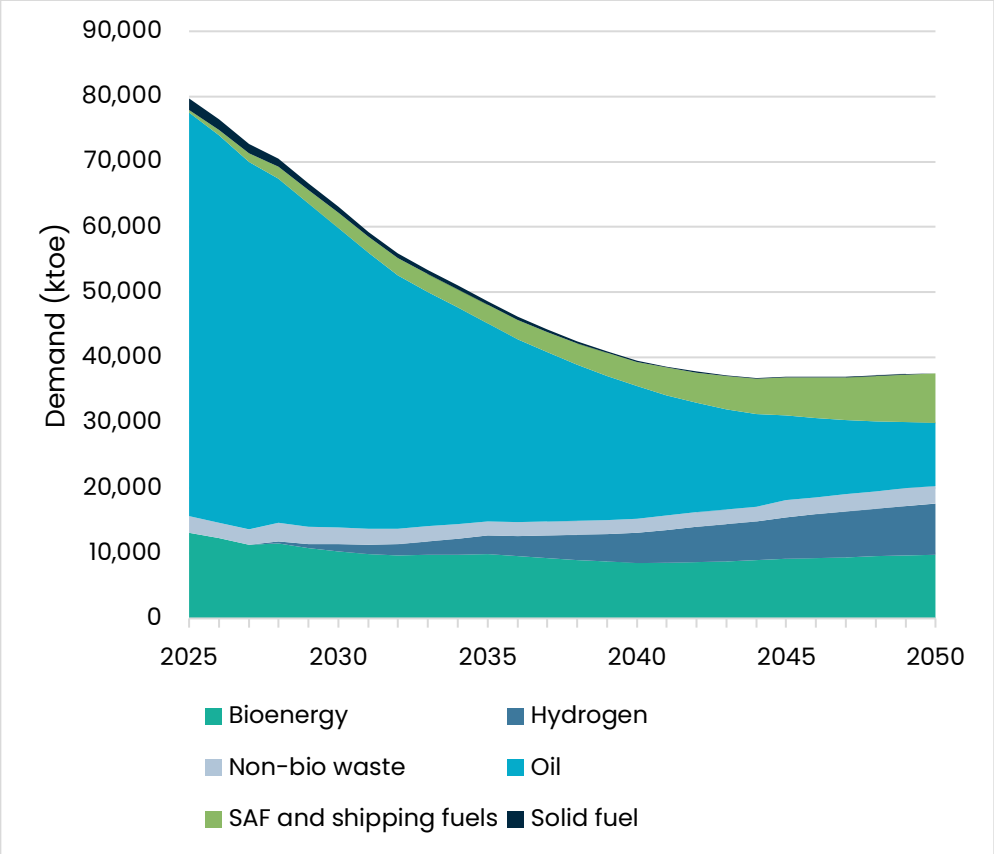
The DESNZ projections[17] including renewable fuels and solid/manufactured fuels are shown in. They show a modest reduction of less than 30% by 2050.

[17] Annex F: Final energy demand in ktoe, https://www.gov.uk/government/publications/energy-and-emissions-projections-2024-to-2050



Source: DESNZ projections for reference scenario (central assumptions for fossil fuel prices and economics) with existing and stated policies

CCC balanced pathway projections for hydrocarbons, excluding natural gas



The CCC projections[18] for possible refinery outputs, including bioenergy, are shown above. While the headline demand for oil in the CCC pathway shows considerable decline to 9Mt,

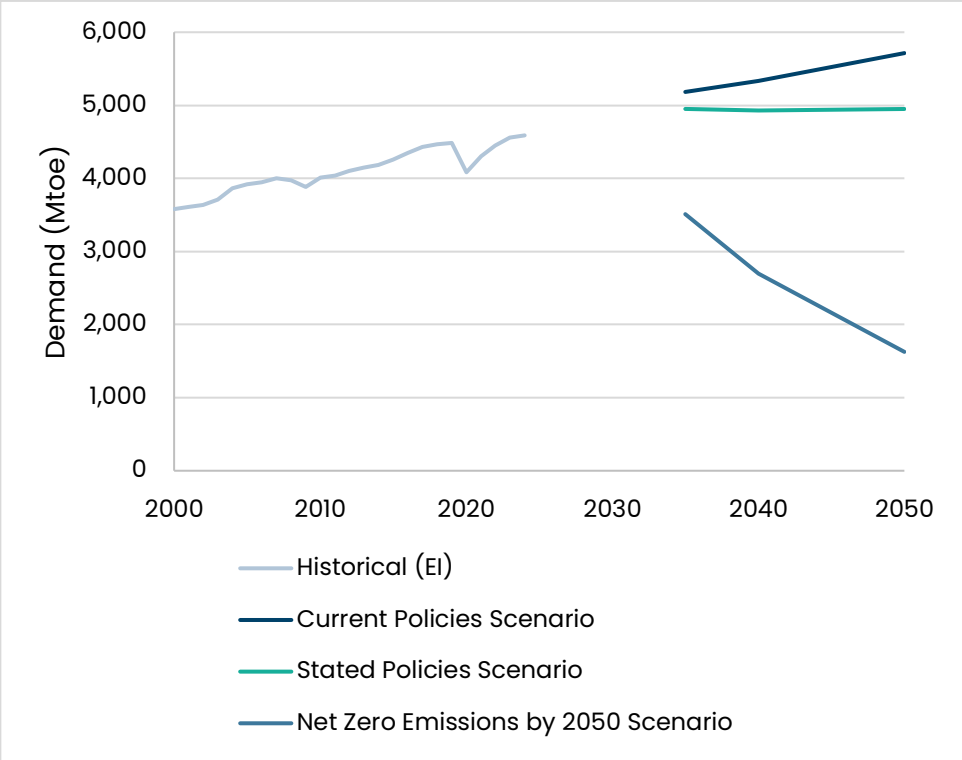
[18] The Seventh Carbon Budget, Climate Change Committee, 2025, https://www.theccc.org.uk/publication/the-seventh-carbon-budget/

wider demand for possible refinery products which can include hydrogen (refineries produce ~70% of total UK supply at present), bioenergy and wastes, SAF as well as solid fuels changes far less – with SAF and hydrogen demand increasing - in a net zero aligned pathway.

Global market: A different trajectory and potential export opportunity

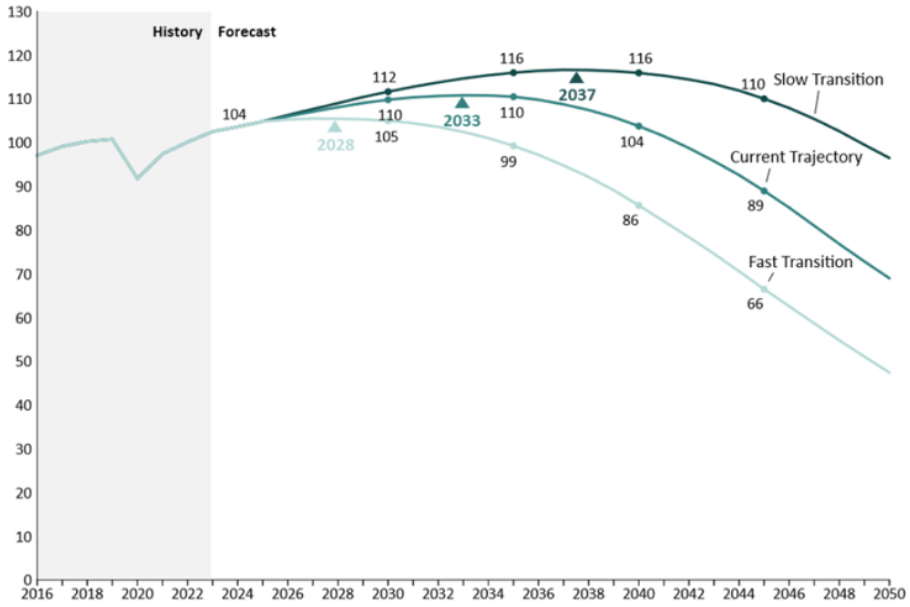
While UK demand is expected to fall, the global picture is markedly different. Historic data from the Energy Institute and projections from the IEA World Energy Outlook show that global oil consumption continues to grow under current policies, and even under stated policies it plateaus at around 5,000 Mtoe to 2050. Independent analysis by Rystad Energy also sees potentially large variances in future demand scenarios but with the potential for global demand levels growing in the medium term.

IEA Global oil demand historic and to 2050 under varying scenarios



Source: Historic World demand from Energy Institute, Scenarios from IEA World Energy Outlook (summing Oil and Oil: non-fuel use)[19]

Rystad Energy Global liquids demand by scenario (million bbl/day



Source: Rystad Energy research and analysis

As global demand continues, and in many regions increases, the UK has an opportunity to position itself as a supplier of lower-carbon-intensity liquid fuels.

This is not simply an economic opportunity; it is a strategic one. If the UK maintains and modernises its refining base, it can:

- Export lower carbon products into markets where demand remains strong
- Support high-quality UK jobs in industrial regions
- Generate tax revenues from a sector that supports UK economy
- Improve the UK's balance of payments by reducing reliance on imported fuels and increasing export volumes
- Retains sovereign capability in an area that underpins national resilience.

Conversely, if the UK allows its refining capacity to erode as we have seen in recent years, it risks becoming increasingly dependent on imports from regions with higher carbon intensity, weaker environmental standards, and less reliable geopolitical alignment.