FuelsEurope

REFINING PRODUCTS FOR OUR EVERYDAY LIFE

STATISTICAL REPORT
2015

Editor: John Cooper
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Foreword

Welcome to the FuelsEurope's Statistical Report 2015, our second such report. While the statistics were originally included in Annual Reports, the 2015 Statistical Report follows the same structure as 2014 edition thus ensuring a consistent historical overview for our readers.

The Report aims to provide high-quality data on energy markets in general but also on refining industry specific issues. Selected charts give readers a broad overview of energy and environment related data and trends over recent years.

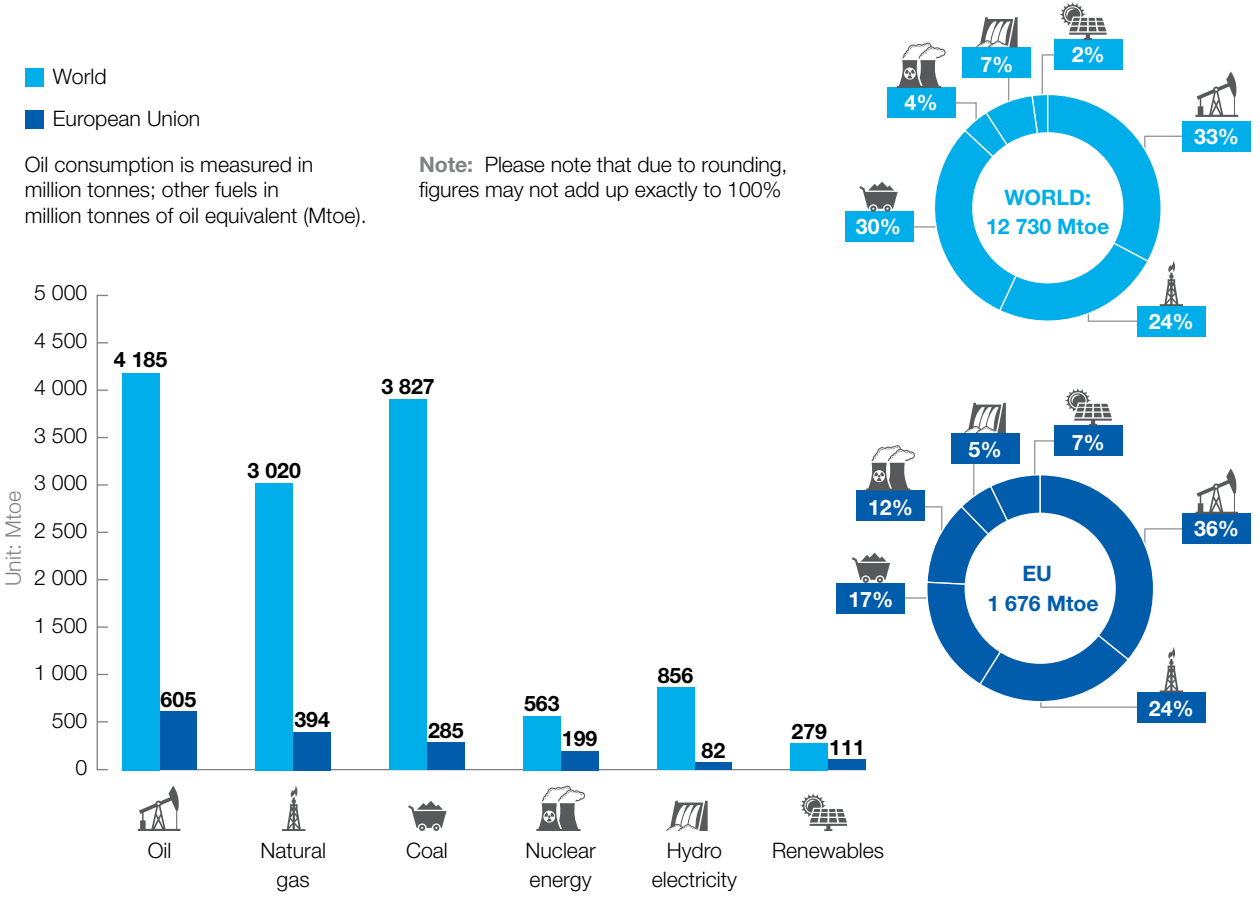
FuelsEurope's Statistical Report 2015 uses the following colour coding to help navigation easily through the document. Each colour corresponds to a specific oil-related theme making browsing between subsections user-friendly. We hope that you find this Report useful.

- **Oil & Energy**
- **Oil Products**
- **Prices and Margins**
- **Refining**
- **Marketing Infrastructures**

John Cooper
Director General

FIG.1 WORLDWIDE ENERGY CONSUMPTION BY FUEL TYPE IN 2013

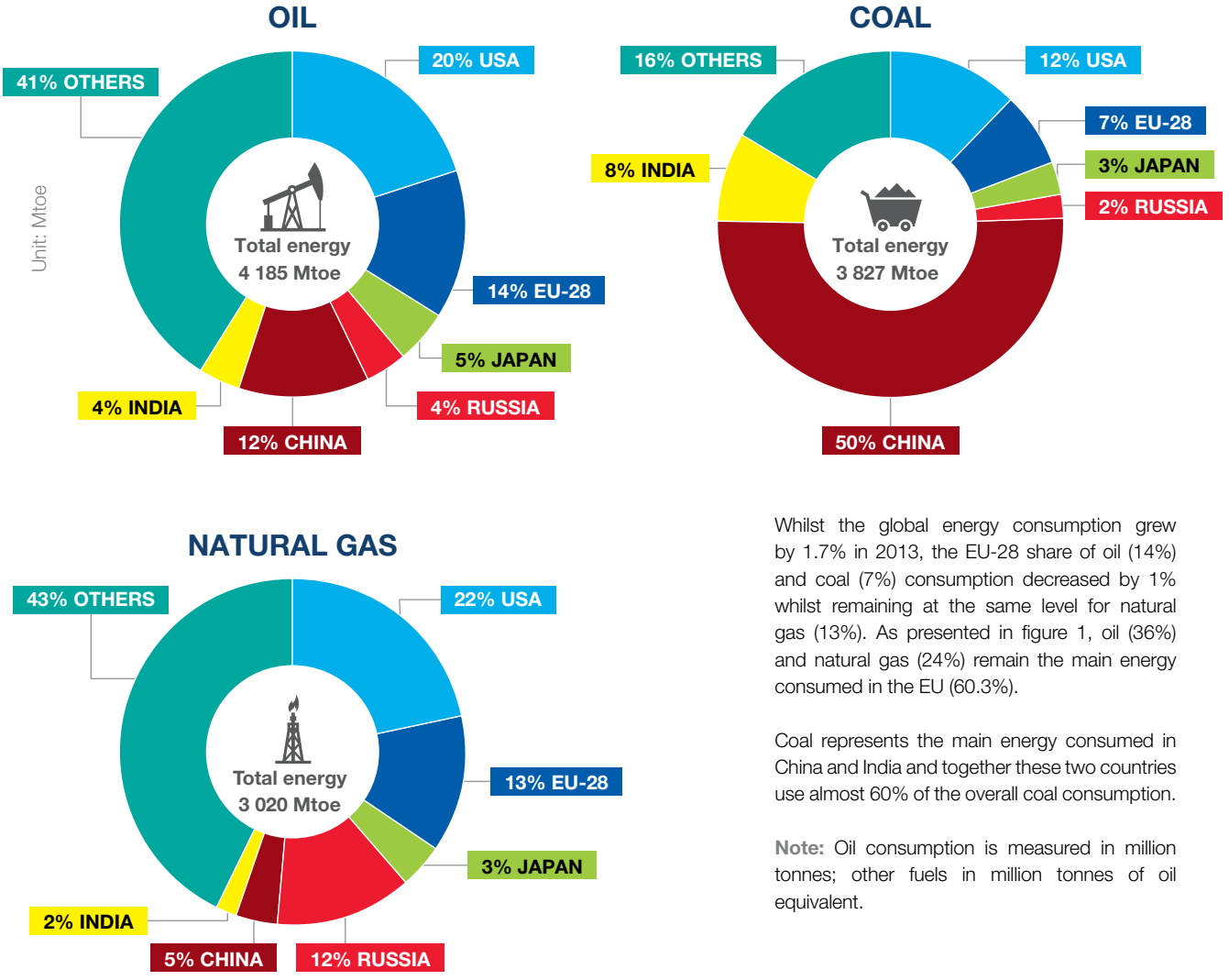
Source: BP Statistical Review of World Energy 2014



Oil, natural gas and coal currently meet the world's energy needs (together 86.8%). The overall share for renewables remains very small (8.5%). The EU, unlike other major economies, has a higher share of nuclear (12%) and renewables & hydro (12%) in its energy mix.

FIG.2 WORLDWIDE ENERGY CONSUMPTION BY REGION IN 2013

Source: BP Statistical Review of World Energy 2014



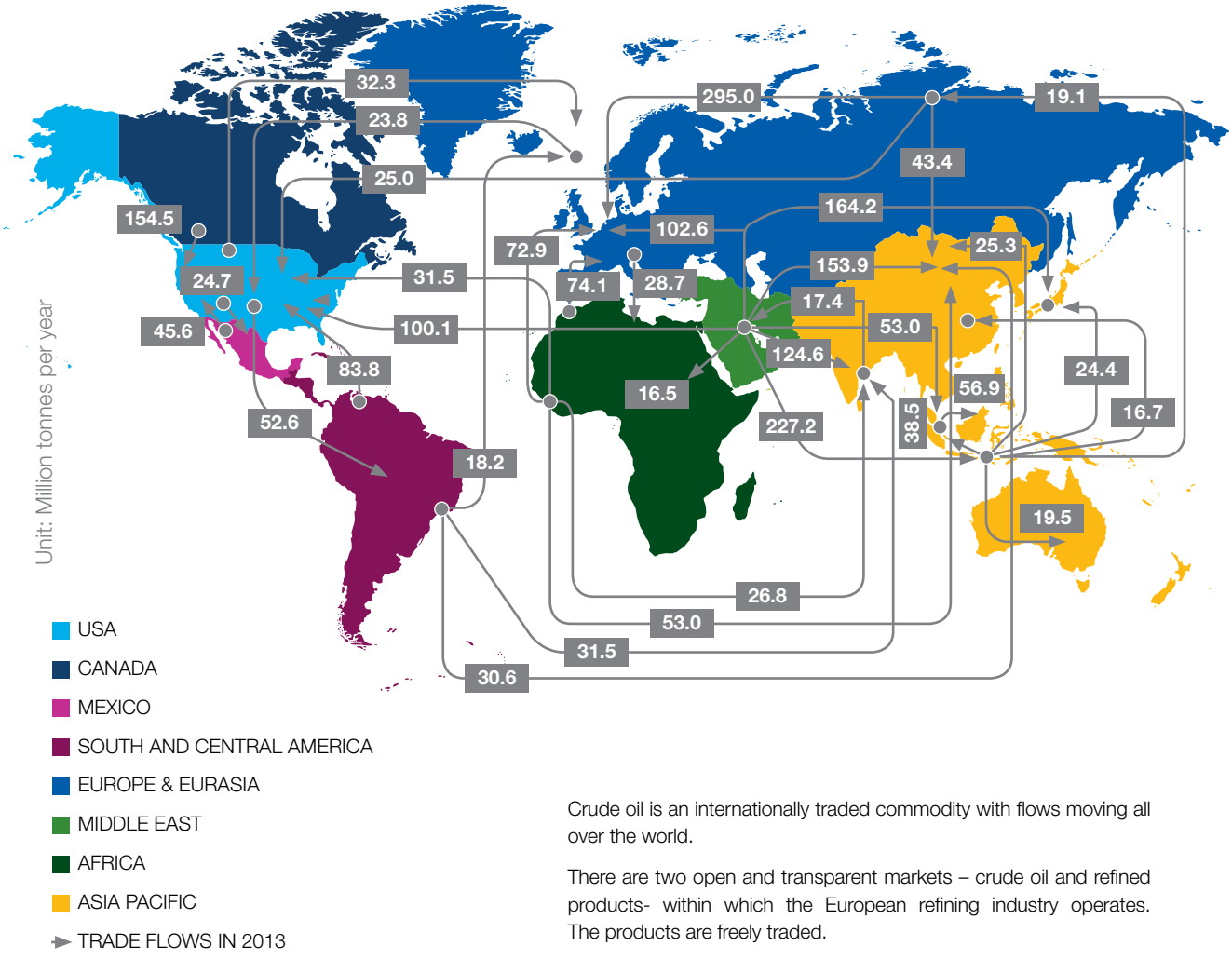
Whilst the global energy consumption grew by 1.7% in 2013, the EU-28 share of oil (14%) and coal (7%) consumption decreased by 1% whilst remaining at the same level for natural gas (13%). As presented in figure 1, oil (36%) and natural gas (24%) remain the main energy consumed in the EU (60.3%).

Coal represents the main energy consumed in China and India and together these two countries use almost 60% of the overall coal consumption.

Note: Oil consumption is measured in million tonnes; other fuels in million tonnes of oil equivalent.

FIG.3 WORLDWIDE CRUDE OIL MOVEMENT IN 2013

Source: BP Statistical Review of World Energy 2014

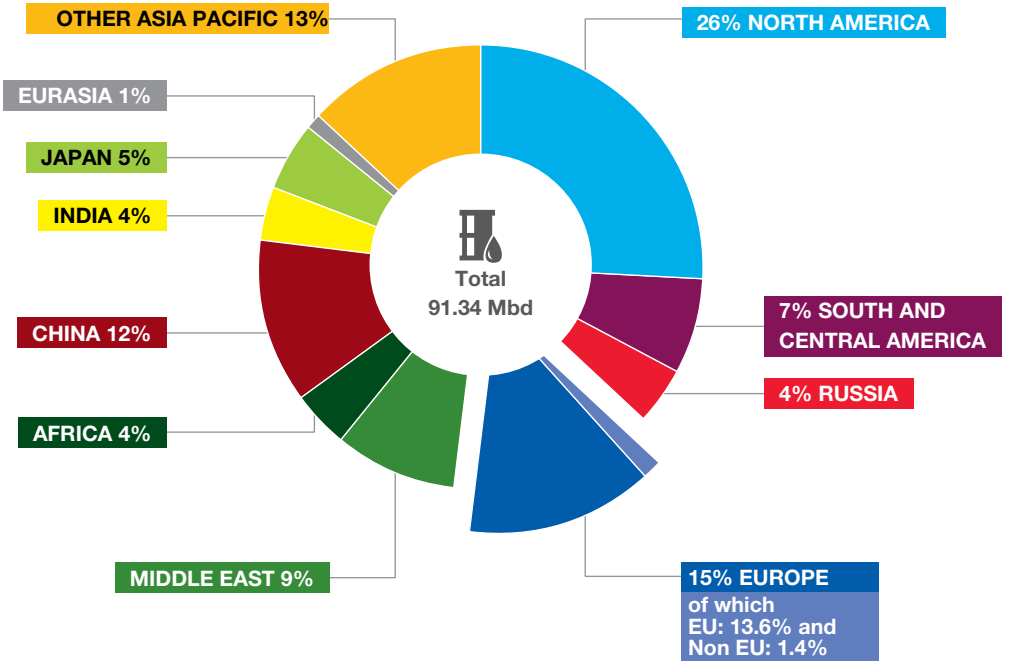


Crude oil is an internationally traded commodity with flows moving all over the world.

There are two open and transparent markets – crude oil and refined products- within which the European refining industry operates. The products are freely traded.

FIG.4 WORLDWIDE REFINED PRODUCT DEMAND AVERAGED 91.34 MILLION BARRELS PER DAY IN 2013, WITH EUROPE ACCOUNTING FOR 15%

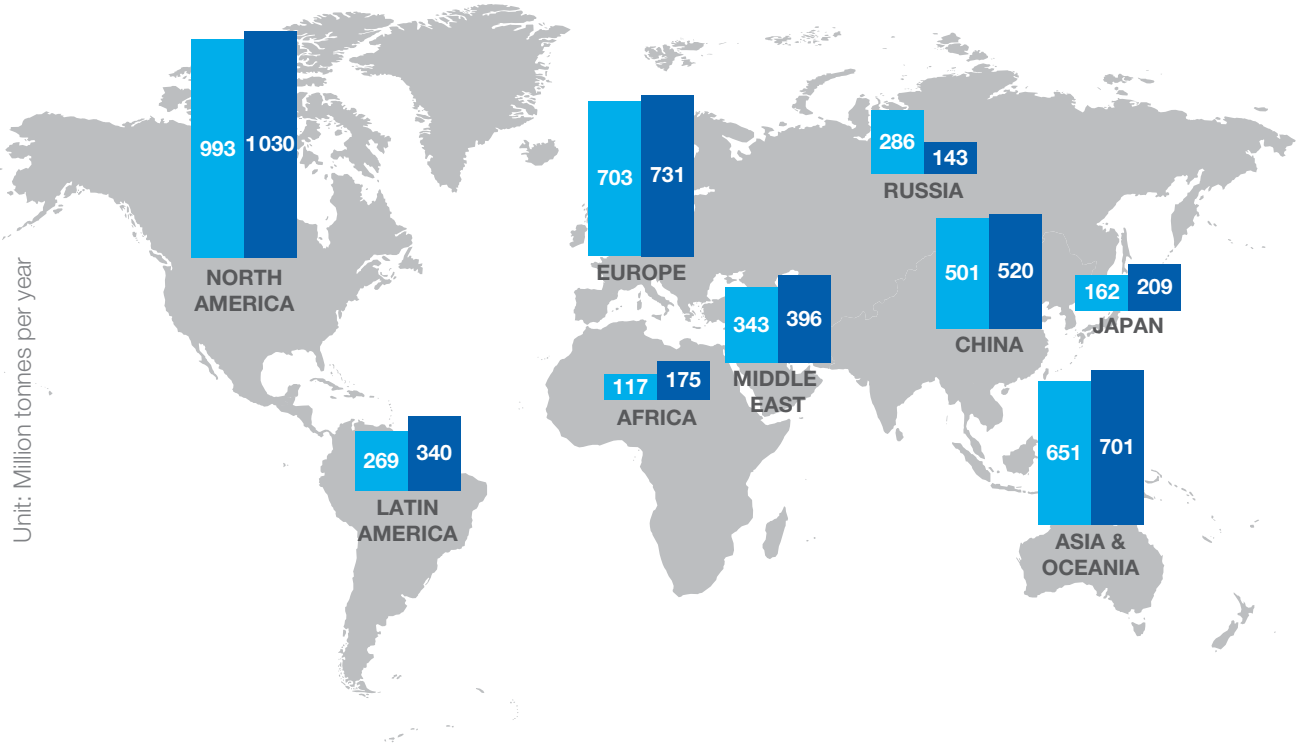
Source: BP Statistical Review of World Energy 2014



Global demand for oil refined products continues to grow from 86.77 million barrels per day in 2012 to 91.34 in 2013. Although the European market is declining it still remains the second largest in the world (15%) behind North-America (26%), but with China, Middle East and the rest of Asia catching rapidly.

FIG.5 WORLDWIDE REFINING SUPPLY/MARKET DEMAND BALANCES IN 2014

Source: Wood Mackenzie



The refining supply/market demand balance shows that most of the regions are dependent on imports to meet market demand. Russia and at a lesser extent China has a positive trade balance which provides Russia in particular a key role in supplying demand from other regions.

Apparently balanced product demand and refinery throughput in the EU hide a large surplus of EU gasoline production and a shortage of diesel and jet production.

FIG.6 EU TOTAL OIL DEMAND AMOUNTED TO 611 MILLION TONNES IN 2014

Source: Wood Mackenzie

Unit: Million tonnes per year

COUNTRY	Mt/y	COUNTRY	Mt/y
Austria	12.6	Italy	60.8
Belgium	28.9	Latvia	1.7
Bulgaria	4.5	Lithuania	2.5
Croatia	3.3	Luxembourg	2.7
Cyprus	2.7	Malta	2.6
Czech Republic	9.1	Netherlands	47.2
Denmark	7.3	Poland	23.9
Estonia	1.5	Portugal	10.9
Finland	9.3	Romania	9.7
France	81.2	Slovakia	3.6
Germany	115.1	Slovenia	2.4
Greece	13.2	Spain	60.0
Hungary	6.3	Sweden	13.3
Ireland	6.6	United Kingdom	68.6
EU TOTAL	**611.4**		
Norway	10.3		
Switzerland	11.1		
Turkey	35.9		
TOTAL NO + CH + TR	**57.3**		
TOTAL	**668.7**		

EU

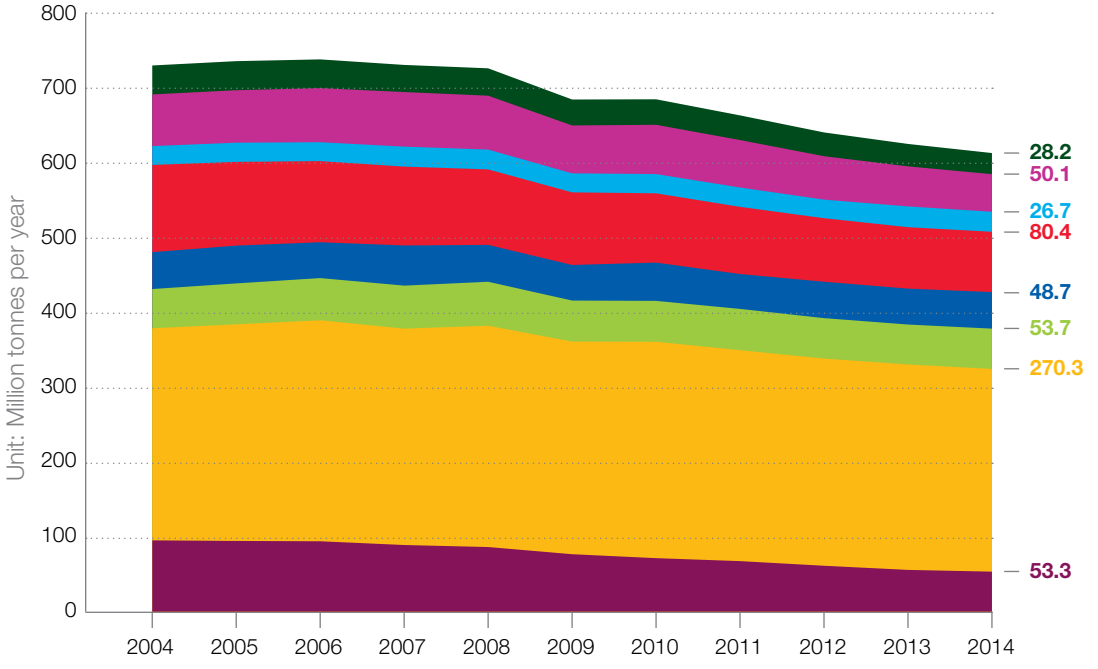
NON EU

EU-28 total oil amounted to 611 MT for 2014, representing a decrease of 3.3% compared to 2013.

While the bigger Member States such as Germany (-1.6%), France (-1.1%), UK (-2.4%) witnessed a decrease close to the European average, the Member States hit by the Eurozone crisis recorded a more significant decrease - Greece (-13.6%); Italy (-6.5%); Spain (-5.2%).

FIG.7 DEMAND HISTORY OF OIL PRODUCTS IN THE EU

Source: Wood Mackenzie

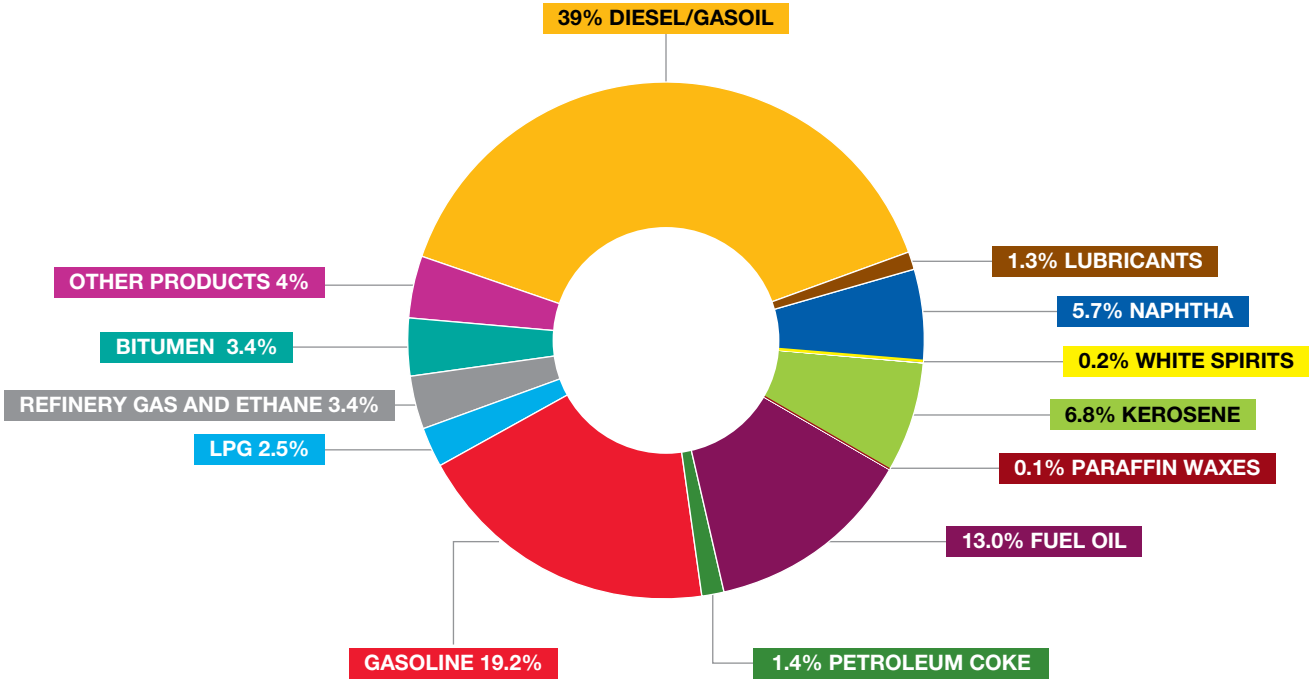


Since 2009, we can observe a downward trend for oil products demand. Over the past 5 years, the overall demand has declined by 8%. The downward trend is mainly driven by the decrease in gasoline (-17%) whilst gasoil and kerosene only decreased by 3%.

- FUEL OIL
- GASOLINE
- DIESEL/GASOIL
- LPG
- JET/KEROSENE
- OTHER PRODUCTS
- NAPHTHA
- REFINERY FUEL & LOSS

FIG.8 AVERAGE REFINERY OUTPUT BY PRODUCT TYPE IN OECD EUROPE

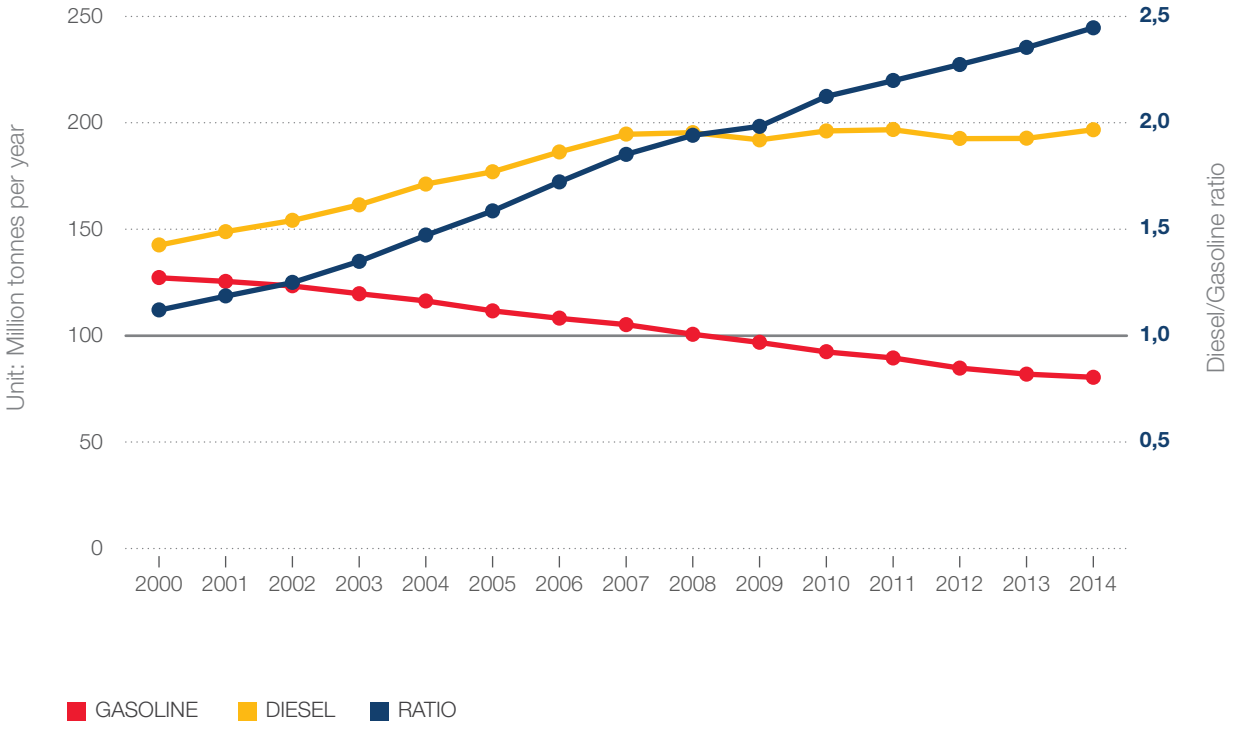
Source: OECD



A wide range of products are produced from crude oil, ranging from transportation and industrial fuels to chemical feedstock. EU refineries produce also many specialty products such as bitumen for road construction and roofing, lubricants for transport and industry, petroleum coke for the metal industry as well as waxes, solvents and other specialised products. Fuels for transport represent the biggest share of the production.

FIG.9 ROAD FUEL DEMAND IN THE EU

Source: Wood Mackenzie

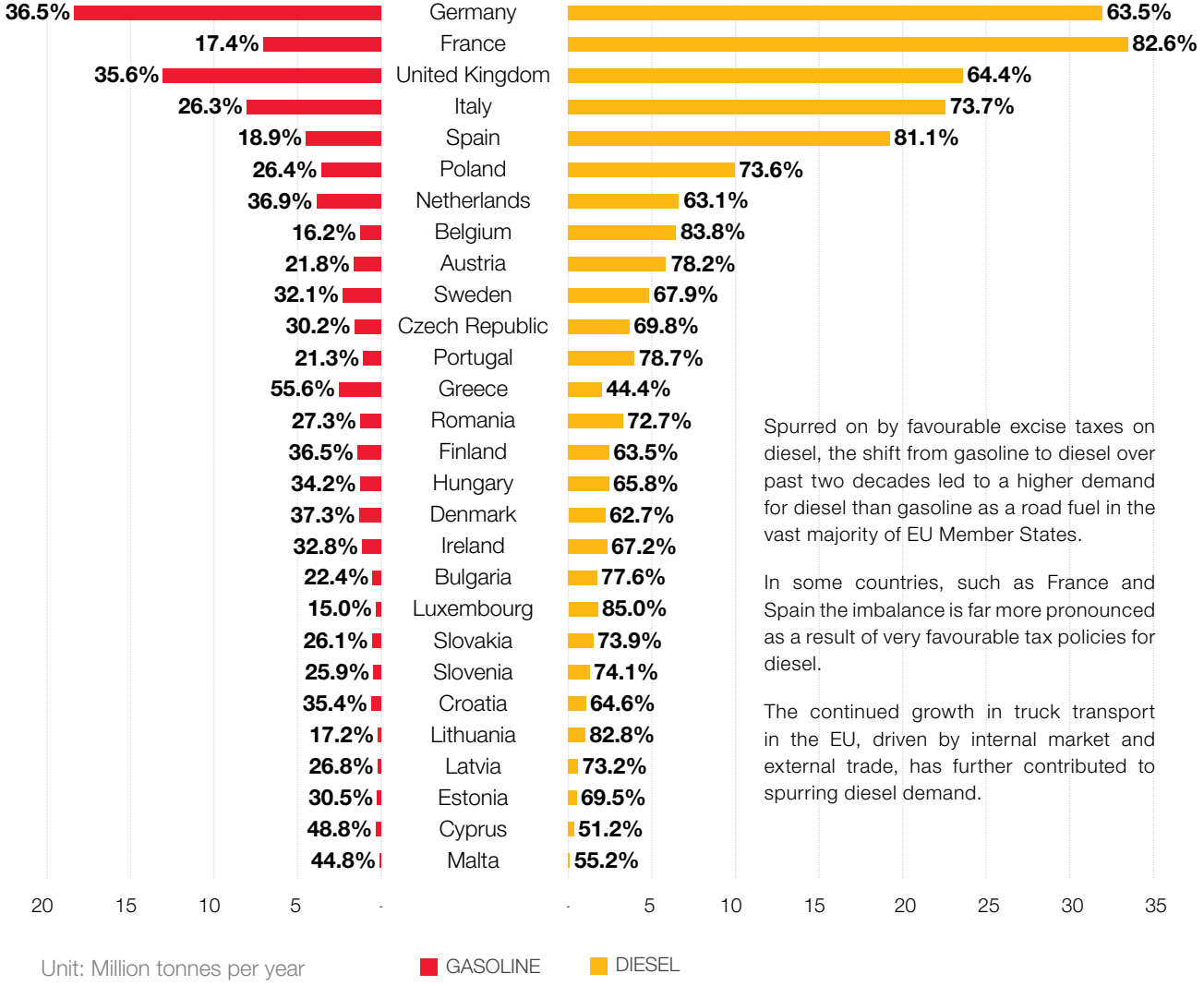


The tax-incentivised dieselisation trend has significantly contributed to a fundamental change in the EU road fuel demand structure. The shift from gasoline to diesel began some 25 years ago and led to major gasoline demand decline as well as a shortage of diesel production in the EU.

Gasoline demand continue to decline while diesel demand is on the rise, currently reaching a 2.5 demand ratio in 2014.

FIG.10 ROAD FUEL DEMAND IN THE EU BY COUNTRY IN 2014

Source: Wood Mackenzie



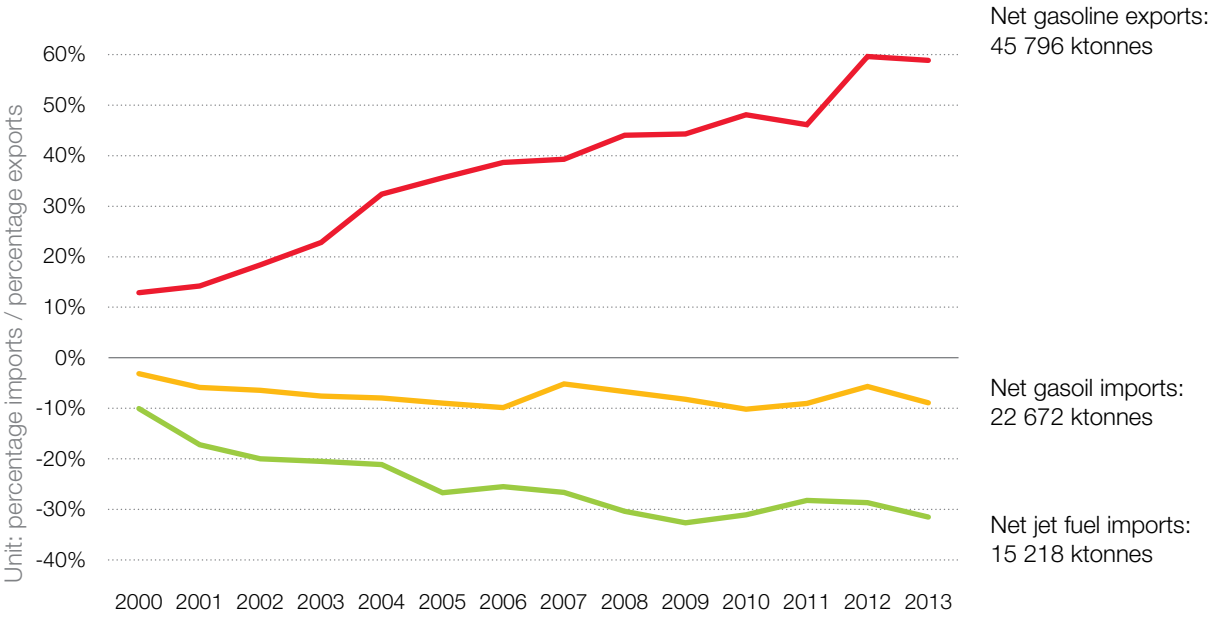
Spurred on by favourable excise taxes on diesel, the shift from gasoline to diesel over past two decades led to a higher demand for diesel than gasoline as a road fuel in the vast majority of EU Member States.

In some countries, such as France and Spain the imbalance is far more pronounced as a result of very favourable tax policies for diesel.

The continued growth in truck transport in the EU, driven by internal market and external trade, has further contributed to spurring diesel demand.

FIG.11 NET TRADE FLOWS FOR REFINED PRODUCTS DEMONSTRATE THE TREND OF GROWING GASOLINE SURPLUS AND DIESEL / GASOIL / JET FUEL DEFICITS

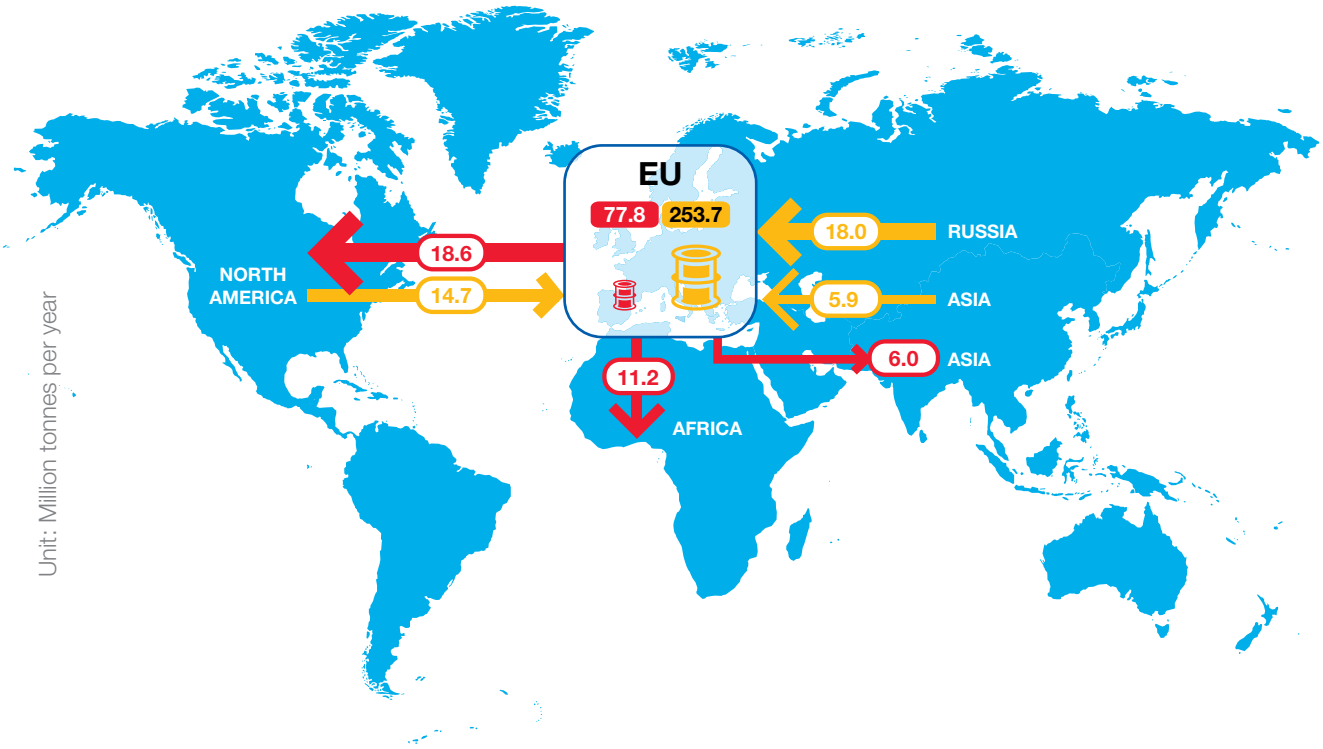
Source: Eurostat



The EU has significant excess gasoline production capacity, but is however unable to meet regional demand for diesel and jet fuel.

FIG.12 MAJOR GASOLINE AND DIESEL/GASOIL TRADE FLOWS TO AND FROM THE EU IN 2013

Source: Eurostat



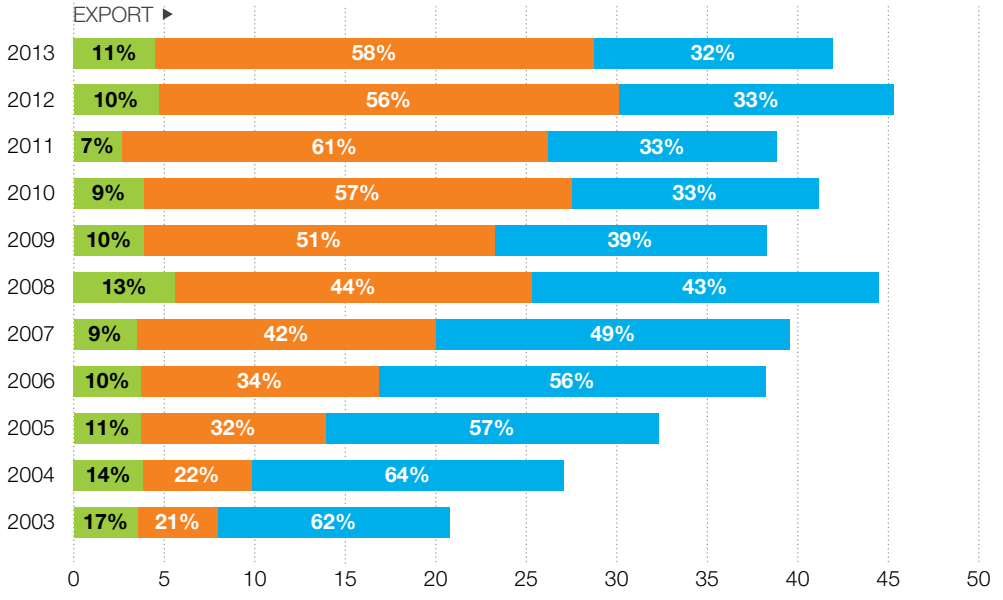
As a result of the gasoline/diesel imbalance demand Europe has significant excess gasoline production capacity that need to be exported, while to meet regional demand for diesel and jet fuel, Europe became heavily reliant on other countries for import, especially from Russia, Middle East & USA.

North America was the traditional market for exporting gasoline surplus but the recent shale oil revolution, cheap energy and reducing demand have enabled US refiners to increase their supplies for the internal market and to compete on other export markets with EU refiners.

- GASOLINE DEMAND IN 2013
- DIESEL/GASOIL DEMAND IN 2013
- MAIN GASOLINE TRADE FLOWS IN 2013
- MAIN DIESEL/GASOIL TRADE FLOWS IN 2013

FIG.13 EU GASOLINE TRADING BALANCE:
USA IS A KEY EXPORT MARKET FOR THE EU

Source: Eurostat



Note: Please note that due to rounding, figures may not add up exactly to 100%

Unit: Million tonnes per year

EUROPE NON EU
REST OF THE WORLD
USA

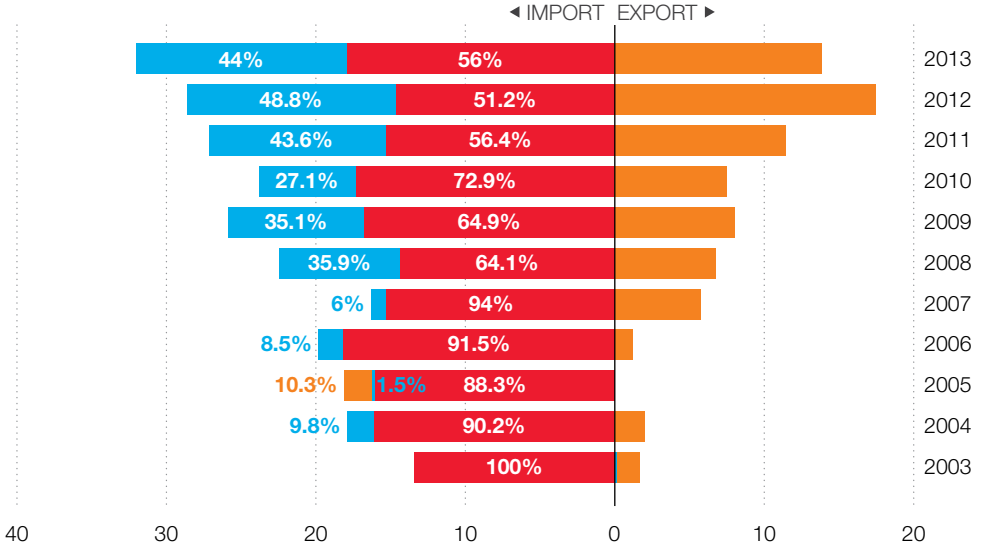
The US was the traditional export market for the structural EU gasoline surplus. The recent shale oil boom has decreased export opportunities to the US and forced EU refiners to find other markets.

The EU gasoline surplus in 2013 decreased by 8% compared to 2012. Comparatively the share of the US has decreased from 43% in 2008 to 32% in 2013 of the total exports.

FIG.14 EU GASOIL TRADING BALANCE:

RUSSIA IS A LEADING EXPORTER OF GASOIL TO THE EU

Source: Eurostat



Note: Please note that due to rounding, figures may not add up exactly to 100%

Unit: Million tonnes per year

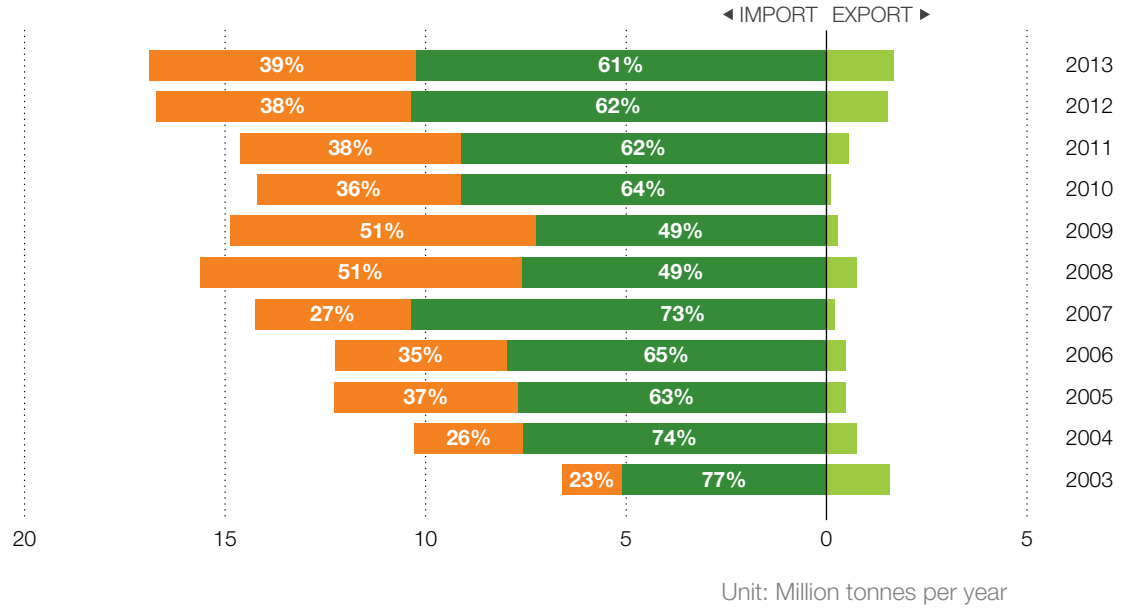
NORTH AMERICA
RUSSIA
REST OF THE WORLD

Major growth of US diesel exports to EU. EU increasingly dependent upon imported diesel, exporting lower quality gasoil.

FIG.15 EU JET FUEL TRADING BALANCE:

MIDDLE EAST REMAINS MAIN JET FUEL SUPPLIER FOR THE EU

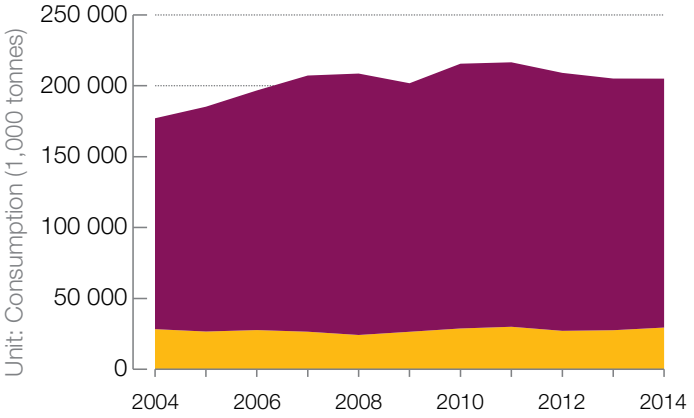
Source: Eurostat



Growing EU dependence on jet fuel imported mainly from Middle East.

FIG.16a GLOBAL MARINE FUEL CONSUMPTION

Source: Wood Mackenzie

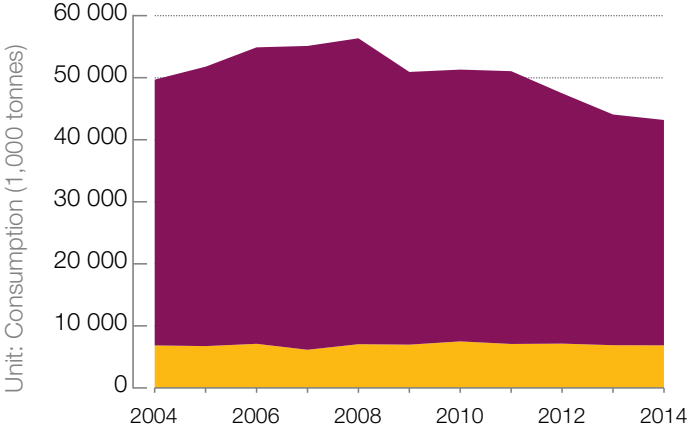


The global demand for marine fuel is mainly met by fuel oil (85%) while gasoil only represents 15% of the market.

The new limits for sulphur content of marine fuels could drastically change the market with a massive demand for low sulphur distillates, requiring major refinery investments.

FIG.16b MARINE FUEL CONSUMPTION IN THE EU

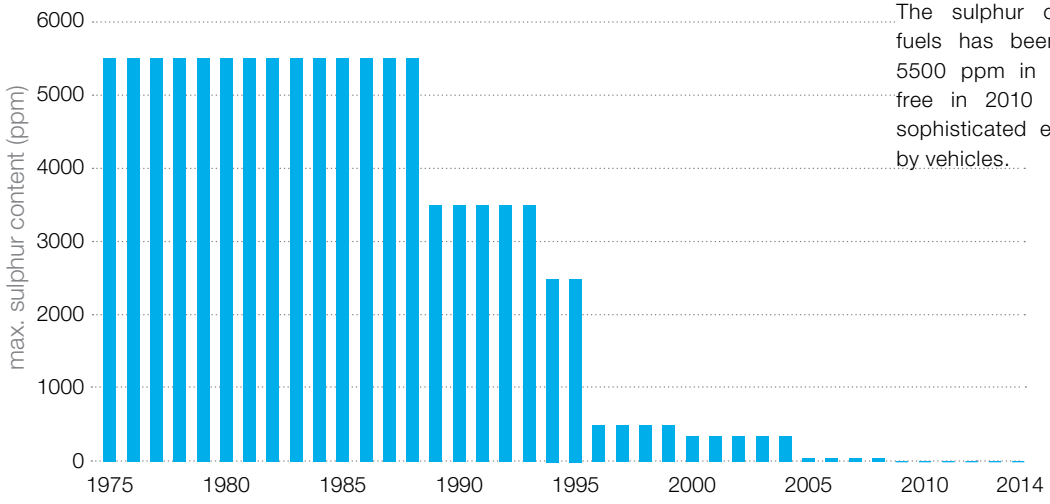
Source: Wood Mackenzie



Switch to LNG or the use of scrubbers are alternatives to new IMO emissions limits in 2020 or 2025.

FIG.17a EU ROAD DIESEL SULPHUR SPECIFICATIONS

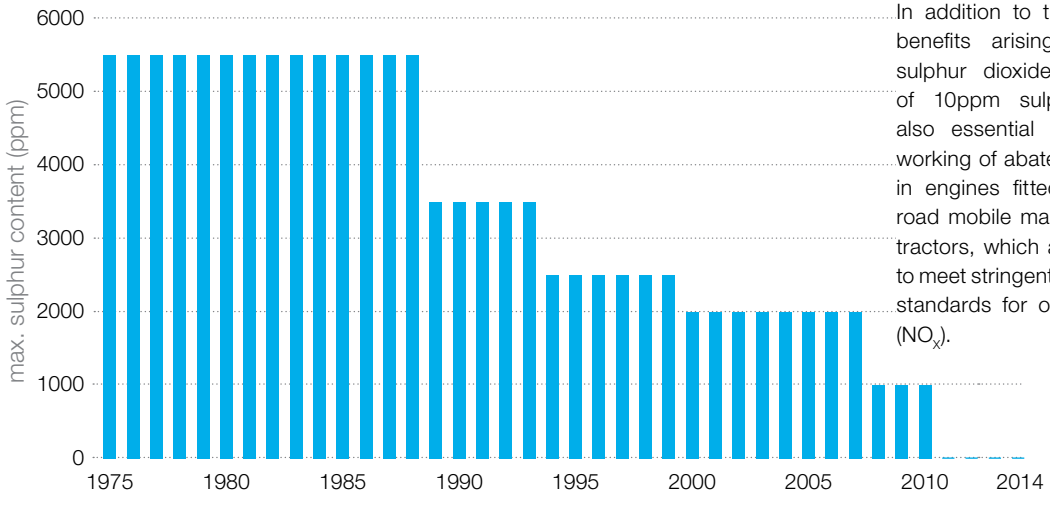
Source: PFC Energy



The sulphur content of road fuels has been reduced from 5500 ppm in 1975 to sulphur free in 2010 allowing use of sophisticated emissions control by vehicles.

FIG.17b EU OFF-ROAD DIESEL SULPHUR SPECIFICATIONS

Source: PFC Energy

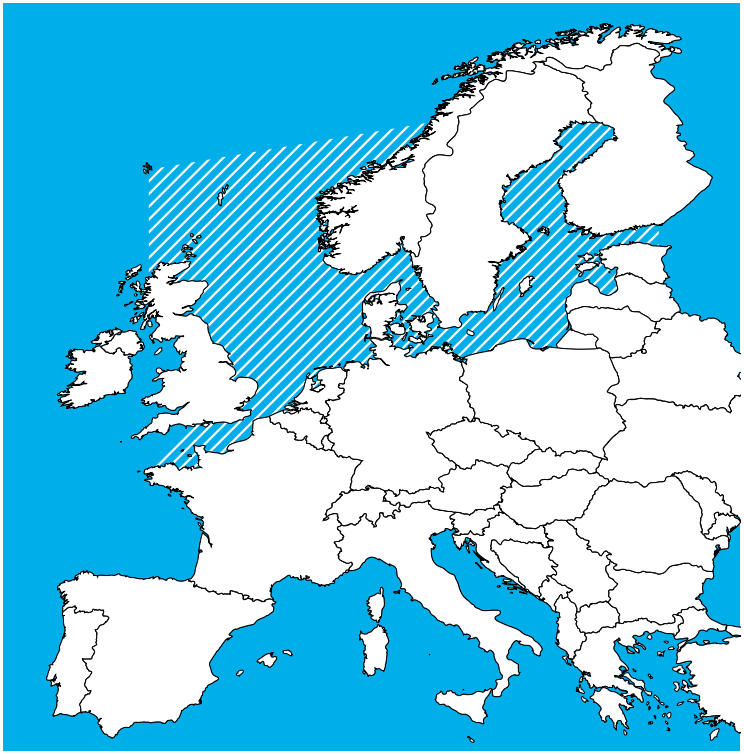


In addition to the environmental benefits arising from reduced sulphur dioxide (SO_2), the use of 10ppm sulphur gas oil is also essential for the effective working of abatement technology in engines fitted in newer non-road mobile machinery, including tractors, which are manufactured to meet stringent new EU emission standards for oxides of nitrogen (NO_x).

FIG.18 MARINE FUEL SULPHUR SPECIFICATIONS

SO_2 EMISSION CONTROL AREAS (SECAs)

Source: European Commission



SECAs cover the Baltic and North Seas and the English Channel

Limits for the sulphur content of marine fuels in SECAs:
1% until 31 December 2014
0.10% as from 1 January 2015

Limits for the sulphur content of marine fuels outside SECAs in the EU waters:
0.50% by 2020

The following areas impose limits on the sulphur level of fuel in ships travelling within them.

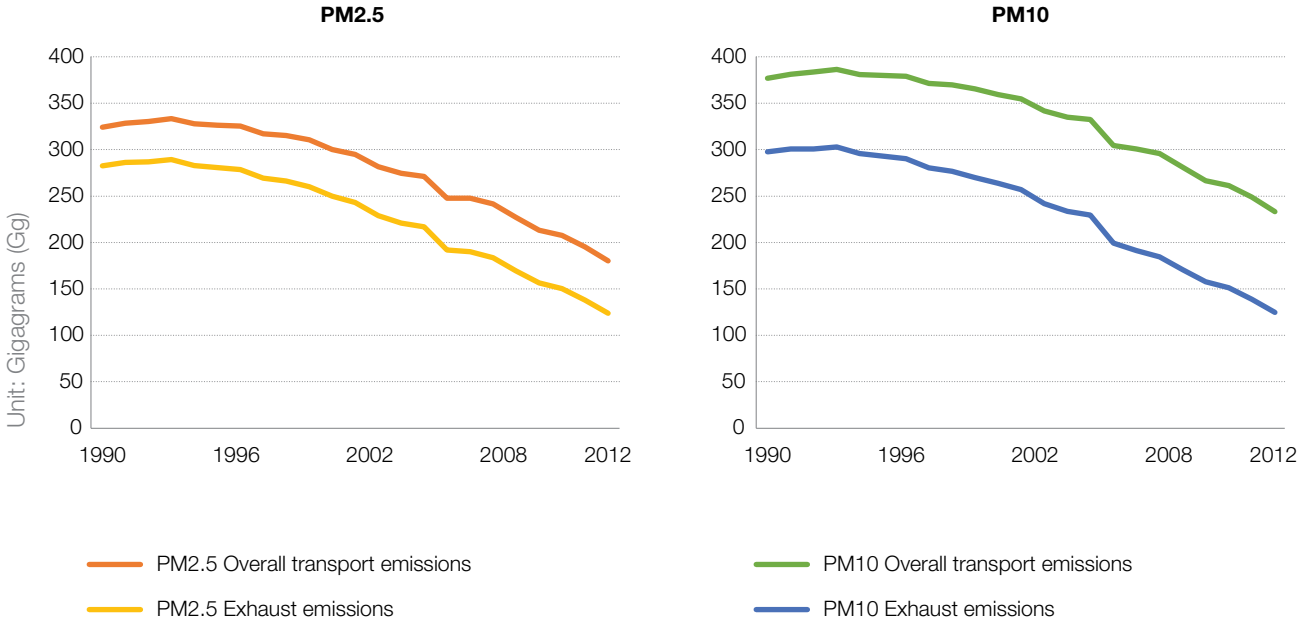
Changes in shipping fuel specifications require large-scale industry investment, by shipping and fuels supply industries.

The new 0.10% marine fuel will be difficult to produce from fuel oil and be met by marine diesel, a lighter product or potentially by LNG.

Secondary technology such as scrubbers can also be used to meet these sulphur levels but this technology is not suitable for our ships.

FIG.19a PM EMISSIONS FROM EXHAUST IN THE EU REDUCED BY OVER 50%

Source: European Environment Agency

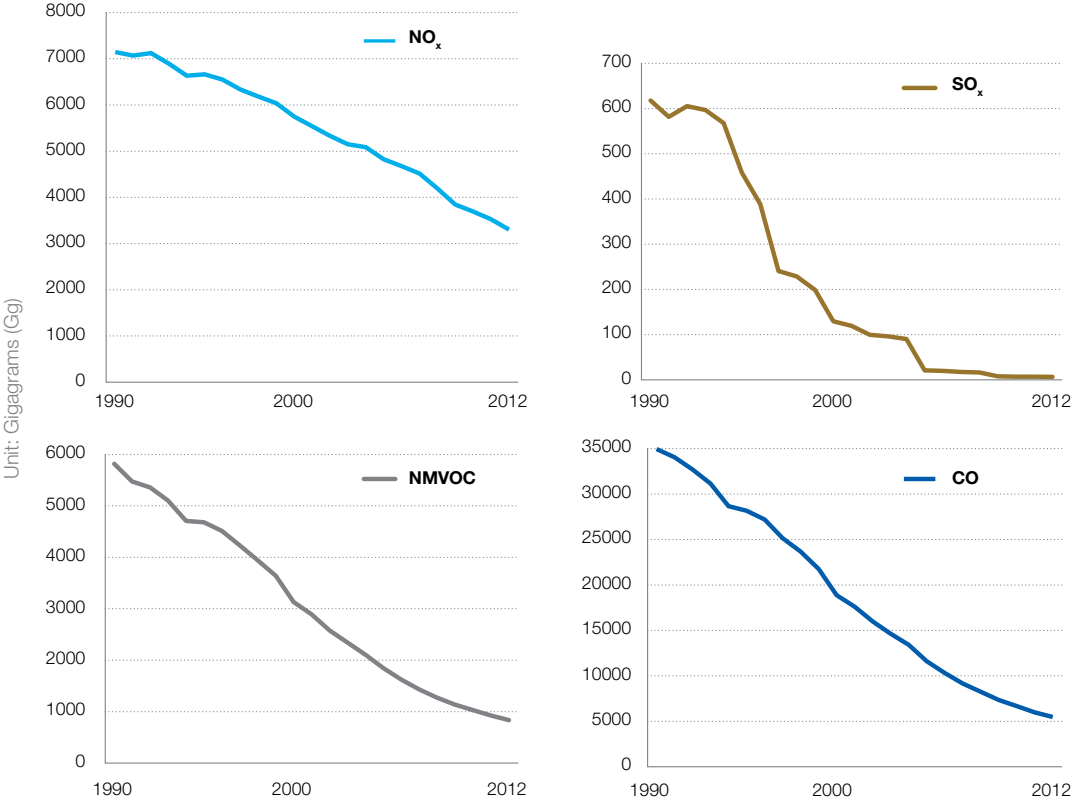


PM emissions are continuously decreasing as the result of cleaner diesel fuel, advanced engines and effective emissions control technology.

With the EURO6 standard, modern road vehicles with diesel engines are using highly efficient filters that remove over 99.9% of the number of PMs.

FIG.19b SINCE 1990 FUELS ARE GETTING PROGRESSIVELY CLEANER RESULTING IN SIGNIFICANT EMISSIONS REDUCTIONS

Source: European Environment Agency

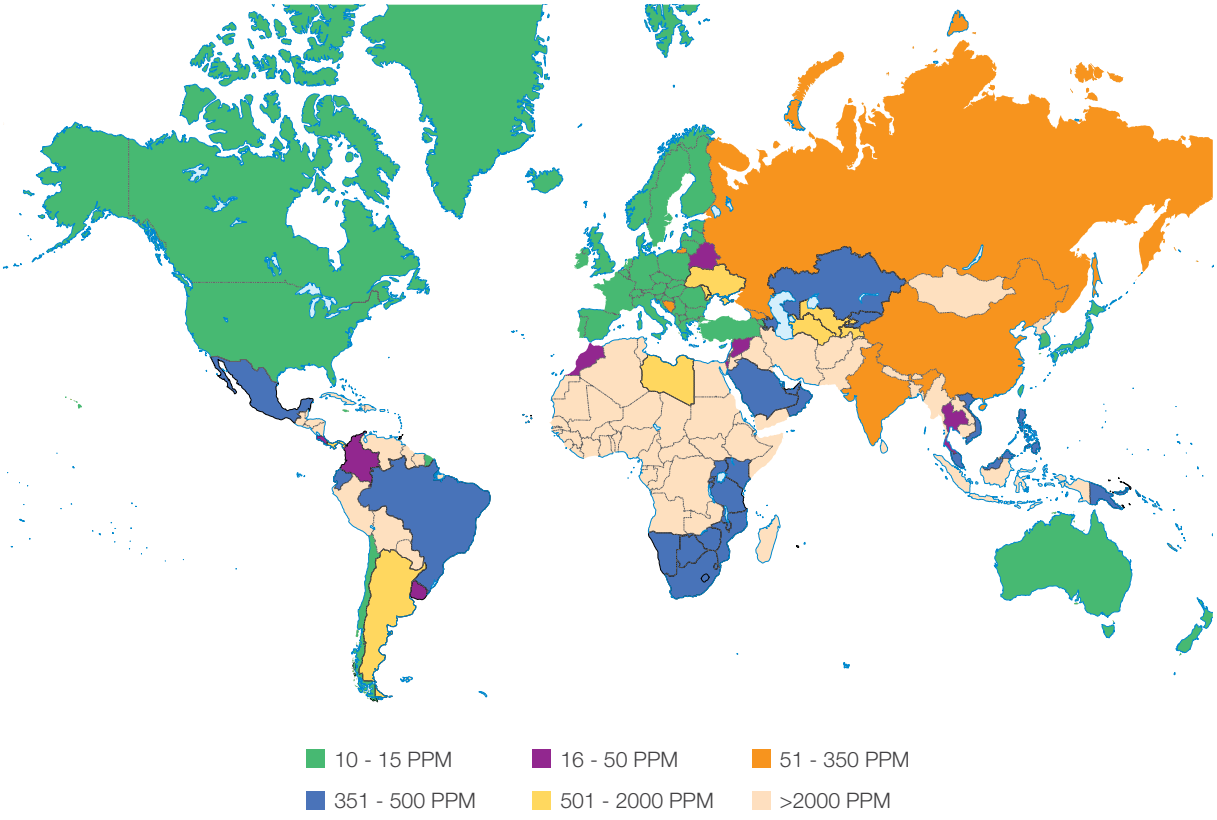


Since 1990 the refining industry has contributed to cleaner exhausts by containing today over 80% lower SOx, NMVOC & CO, while NOx emissions decreased by over 50%.
These significant improvements are the result of the partnerships with the automotive industry aiming at improving the fuel-engine efficiency and leading to multiple environmental benefits.

NOx - Nitrogen Oxides
SOx - Sulphur Oxides
NMVOC - Non Methane Volatile Organic Compounds
CO - Carbon Monoxide

FIG.20 MAXIMUM ON-ROAD DIESEL SULPHUR LIMITS

Source: Hart Energy Research and Consulting, 2014

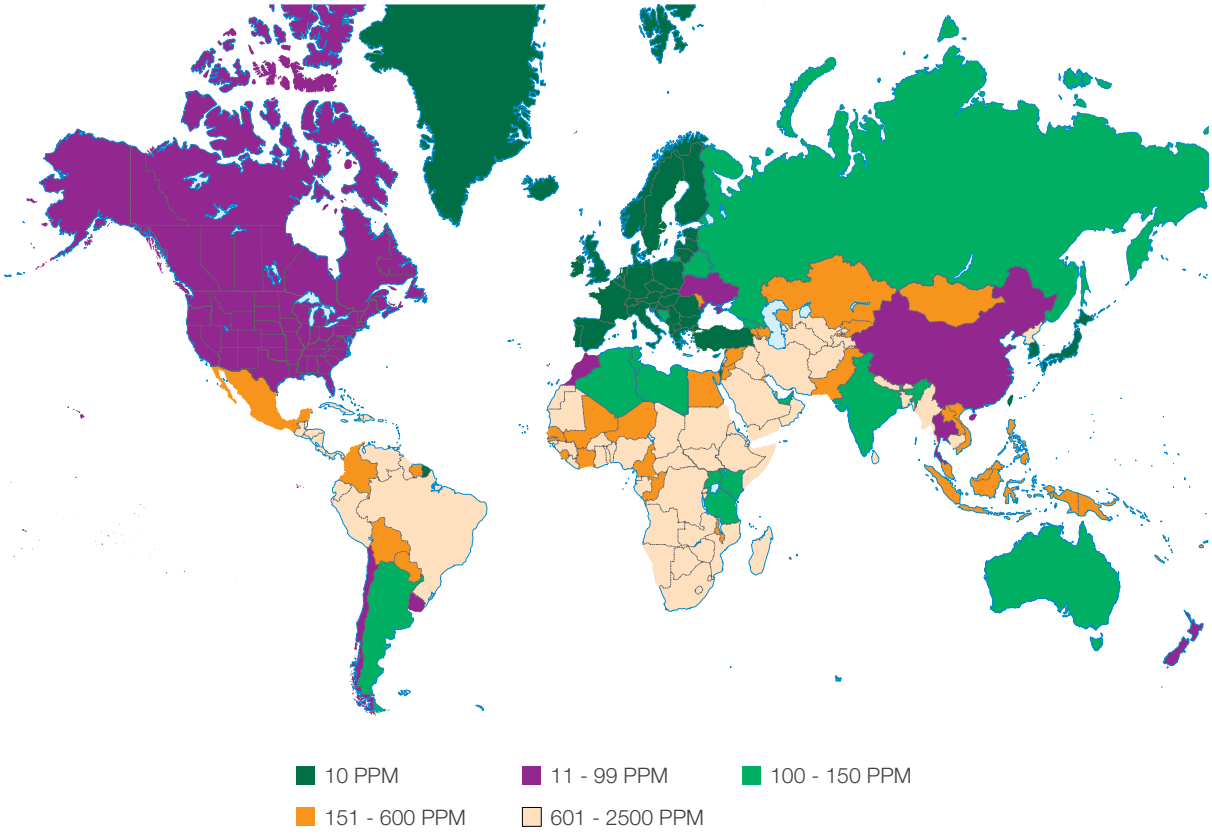


Europe together with USA, Canada, Japan, Australia and Chile apply the lowest (10-15 ppm) on-road diesel sulphur limits in the world.

Countries may apply lower limits for different grades, regions/cities, or based on average content. Detailed information on limits and regulations can be found at www.ifqc.org

FIG.21 MAXIMUM GASOLINE SULPHUR LIMIT

Source: Hart Energy Research and Consulting, 2014

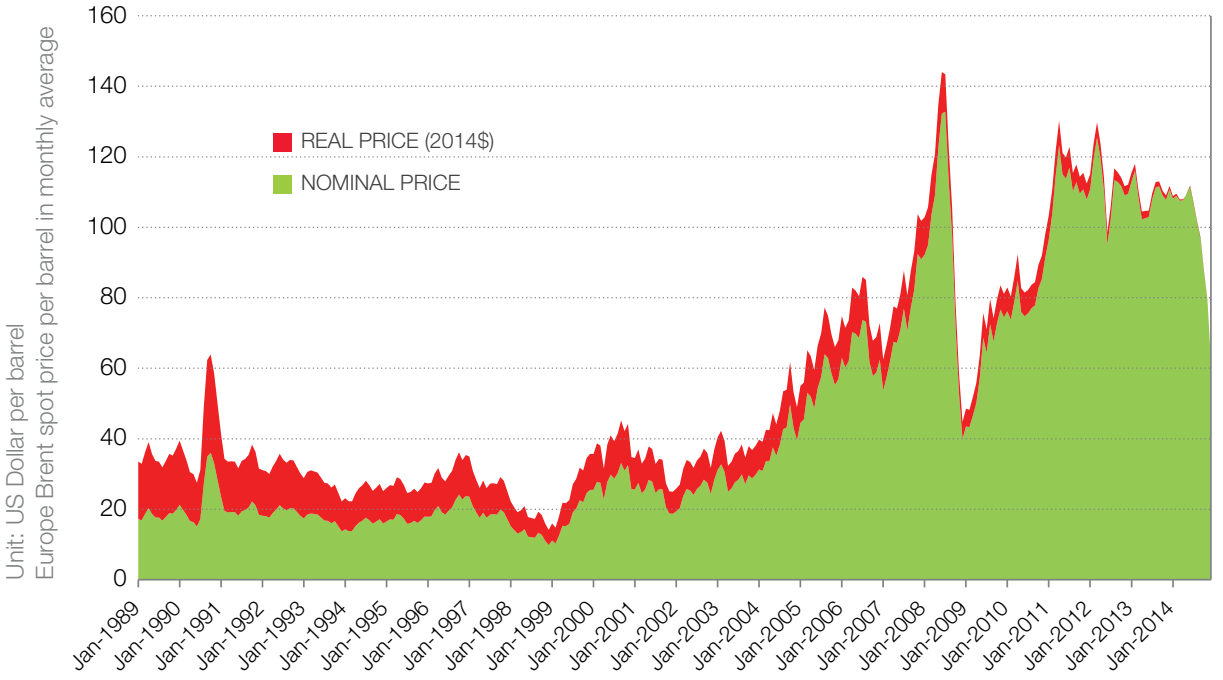


The EU has set the most stringent environmental specifications for sulphur in gasoline worldwide with a maximum level of 10 PPM.

Countries may apply lower limits for different grades, regions/cities, or based on average content. Detailed information on limits and regulations can be found at www.ifqc.org

FIG.22 CRUDE OIL PRICE EVOLUTION

Source: Energy Information Administration



The EU Refining industry operates between two global, open and transparent markets: the market of crude oil and the market of refined products. The main benchmarks are priced in dollars.

The price of crude oil is set on international spot markets and reported by designated agencies. The price of oil is an important marker for the global economy and is closely watched by businesses and policy-makers.

After a decade of relatively low prices, oil started rising last decade, leading to peaks just before the financial crisis in 2008. In the summer of 2014, oil prices started to fall, reaching daily closing prices of below 50 $.

FIG.23 REFINERS' NET CASH MARGIN ACROSS REGIONS

Source: Concawe

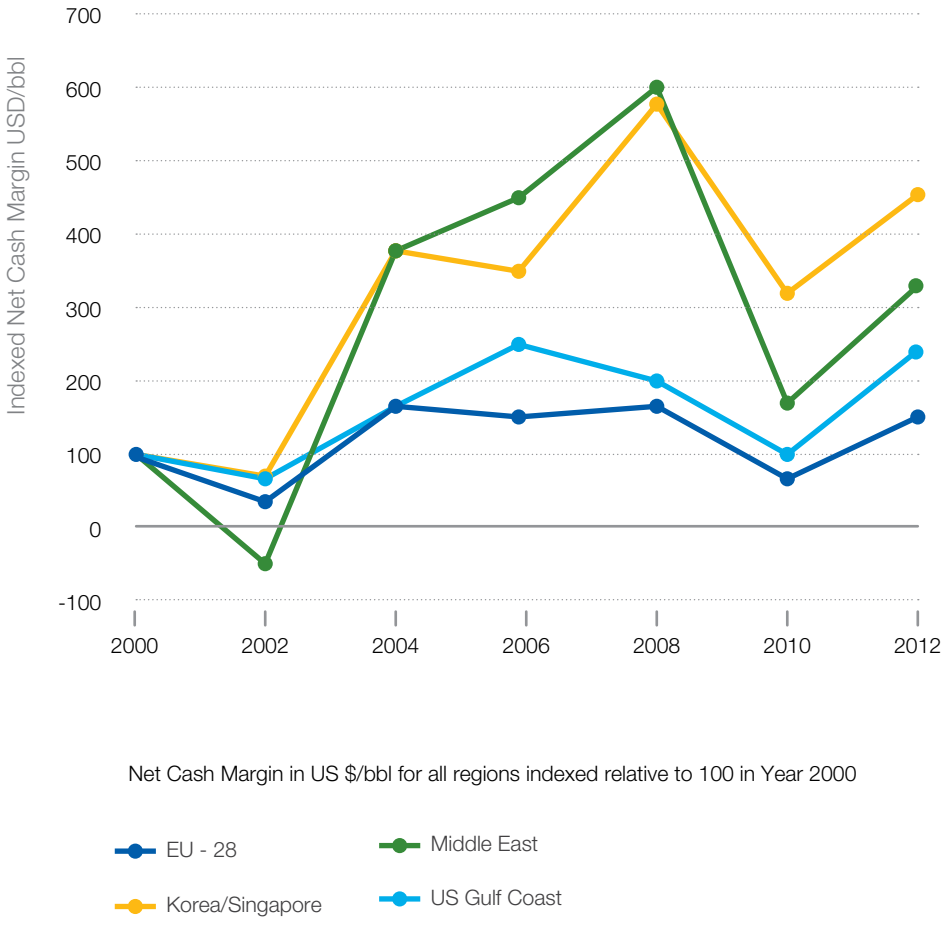
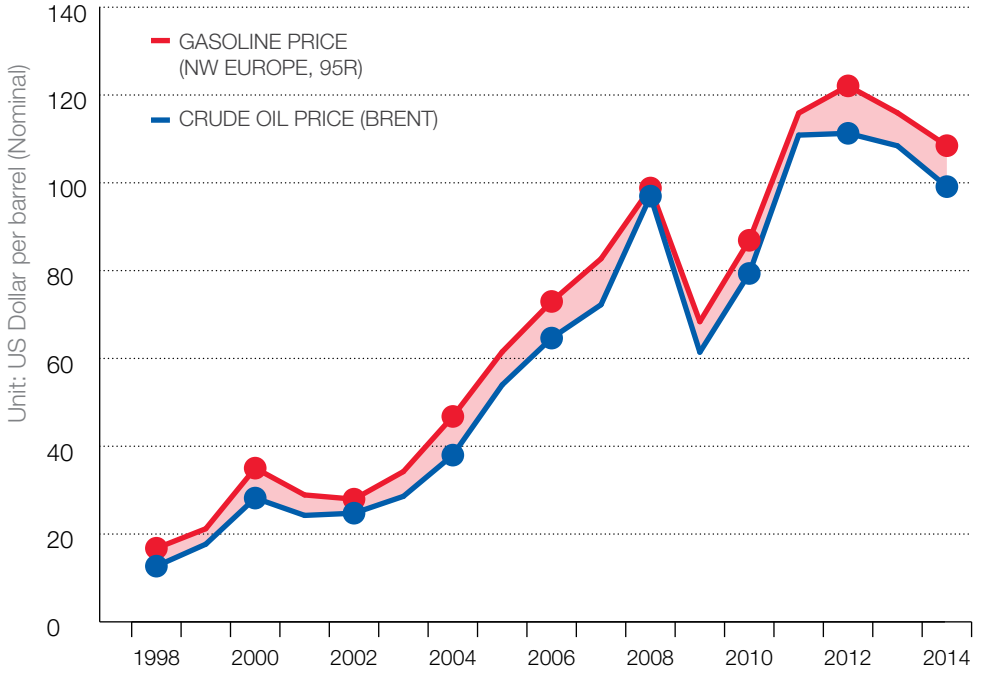


FIG.24 REFINERS OPERATE BETWEEN TWO GLOBAL COMMODITY MARKETS

Source: Wood Mackenzie & Argus Media



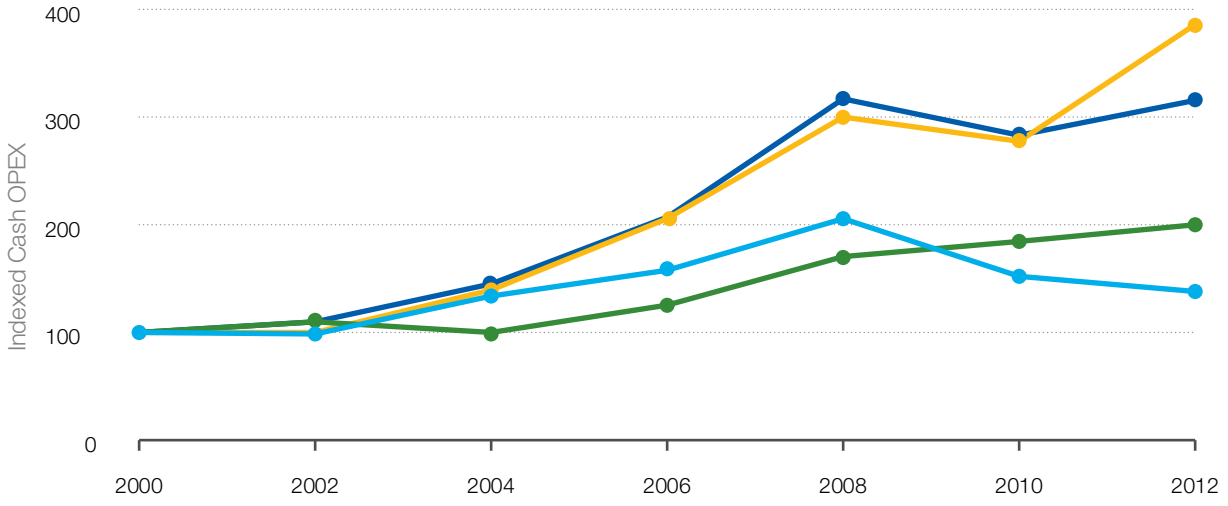
EU refining operates between two global commodity markets, the crude market and the refined products market. The 'crack spread' represents the difference between the cost of crude oil and the market sales price for refined products.

Generally product prices rise with crude prices but the drivers of the difference are many.

In historic terms, the profitability has started to decline in a context of falling demand (2008). Whilst 2012 saw a small improvement for refiners, the spread is generally tight- margins are low and the industry is highly vulnerable to the operating costs that must be deducted from the spread before profitability can be considered.

FIG.25 EU CASH OPEX
OPERATING YEARS 2000–2012

Source: Concawe

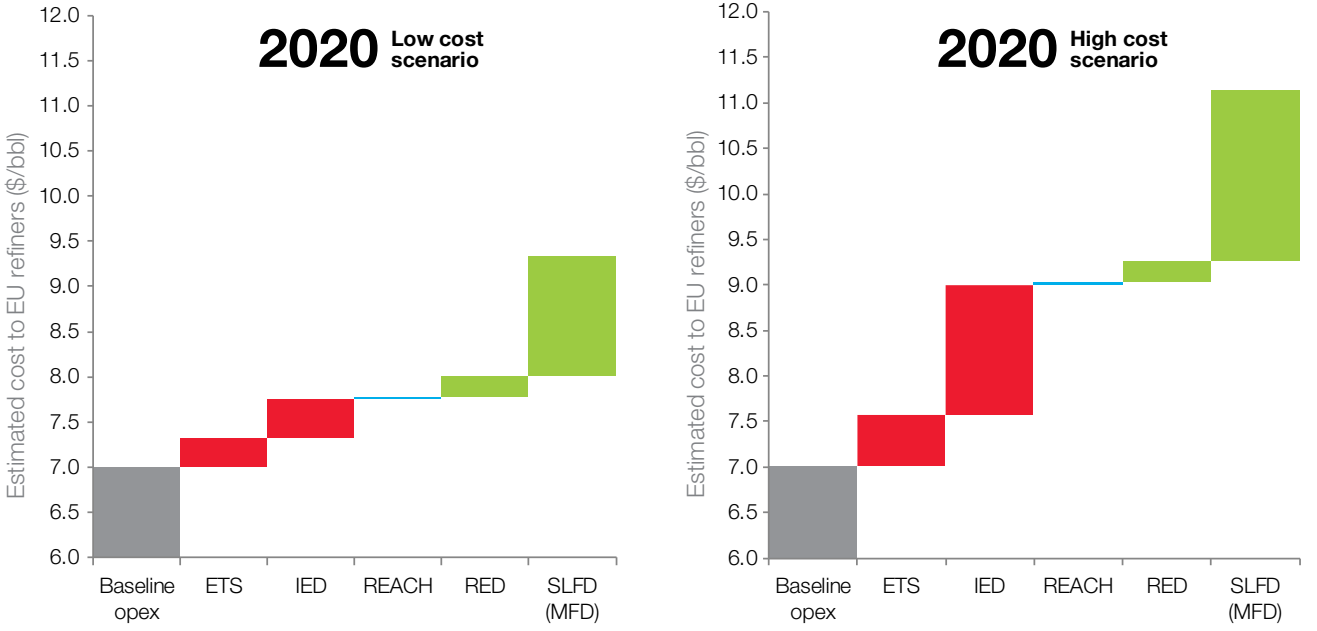


Cash OPEX in US $/bbl for all regions indexed relative to 100 in Year 2000

Since 2000, the EU has seen greater operating cost increases than rival areas, leaving them at a competitive disadvantage. In recent years the US Gulf Coast has seen operating costs fall, due largely to cheaper gas from unconventionals.

FIG.26 ESTIMATED CUMULATIVE COST IMPACT OF EU LEGISLATION IN 2020 ON EU REFINING

Source: Concawe



This chart provides an estimation of the cost burden imposed on EU refineries over the period from 2010 to 2020 by a number of EU legislative and implementing acts. It shows the cumulative impact in a low and high cost scenario, expressed in dollars per barrel of refinery intake. These estimated costs impacts should be seen in the context of the EU refining net margin which was less than 3 $/bbl in several of the recent years (source: IEA Oil Market Report).

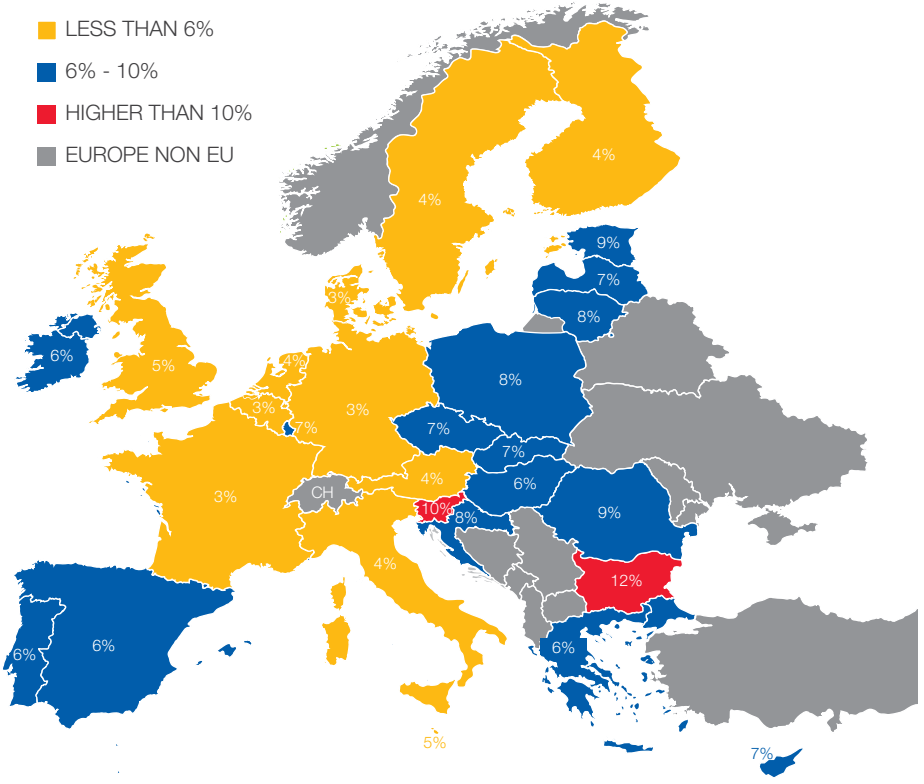
The legislation under consideration has the potential to significantly increase the operating costs of the EU refining industry, thereby impairing its competitive position relative to other world regions where similar legislation is not enacted or is enforced at later dates.

ETS - Emission Trading Scheme (2009/29/EC)
IED - Industrial Emission Directive (2010/75/EC)
REACH - Registration, Evaluation, Authorisation & Restriction of Chemicals (Regulation 1907/2006)
RED - Renewable Energy Directive (2009/28/EC)
SLFD - The Sulphur in Liquid Fuels Directive (1999/32/EC)
OPEX - Operating Expense

For EU ETS, 'low cost scenario assumes 16.5 €/t CO_2, high cost scenario 30 €/t CO_2

FIG.27 FUEL TAXES MAKE A SIGNIFICANT CONTRIBUTION TO MEMBER STATE TAX REVENUE

Source: Eurostat and Wood Mackenzie



COUNTRY		SHARE
AT	Austria	4%
BE	Belgium	3%
BG	Bulgaria	12%
HR	Croatia	8%
CY	Cyprus	7%
CZ	Czech Republic	7%
DK	Denmark	3%
EE	Estonia	9%
FI	Finland	4%
FR	France	3%
DE	Germany	3%
EL	Greece	6%
HU	Hungary	6%
IE	Ireland	6%
IT	Italy	4%
LV	Latvia	7%
LT	Lithuania	8%
LU	Luxembourg	7%
MT	Malta	5%
NL	Netherlands	4%
PL	Poland	8%
PT	Portugal	6%
RO	Romania	9%
SK	Slovakia	7%
SI	Slovenia	10%
ES	Spain	6%
SE	Sweden	4%
UK	United Kingdom	5%

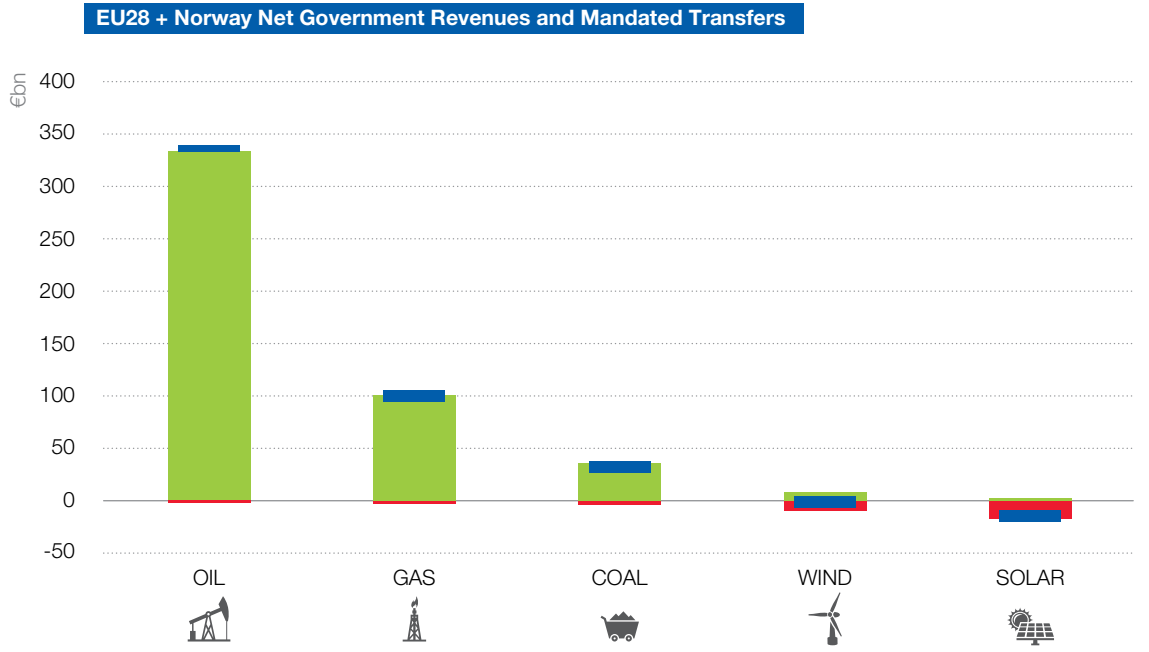
Taxes on fuels contribute on average to 7% of Member State tax revenue.

Many competing products are subsidised. Replacing economically viable petroleum products with such alternatives would have large fiscal consequences.

Figures are based on 2012 revenues.

FIG.28 OIL IS THE LARGEST CONTRIBUTOR TO GOVERNMENT REVENUES, WHILE WIND AND SOLAR POWER ARE NET RECIPIENTS OF TRANSFERS AS A RESULT OF GOVERNMENT POLICIES

Source: NERA



Note: Upstream oil and gas revenues allocated in proportion to production value, resulting in slightly higher allocation to oil.

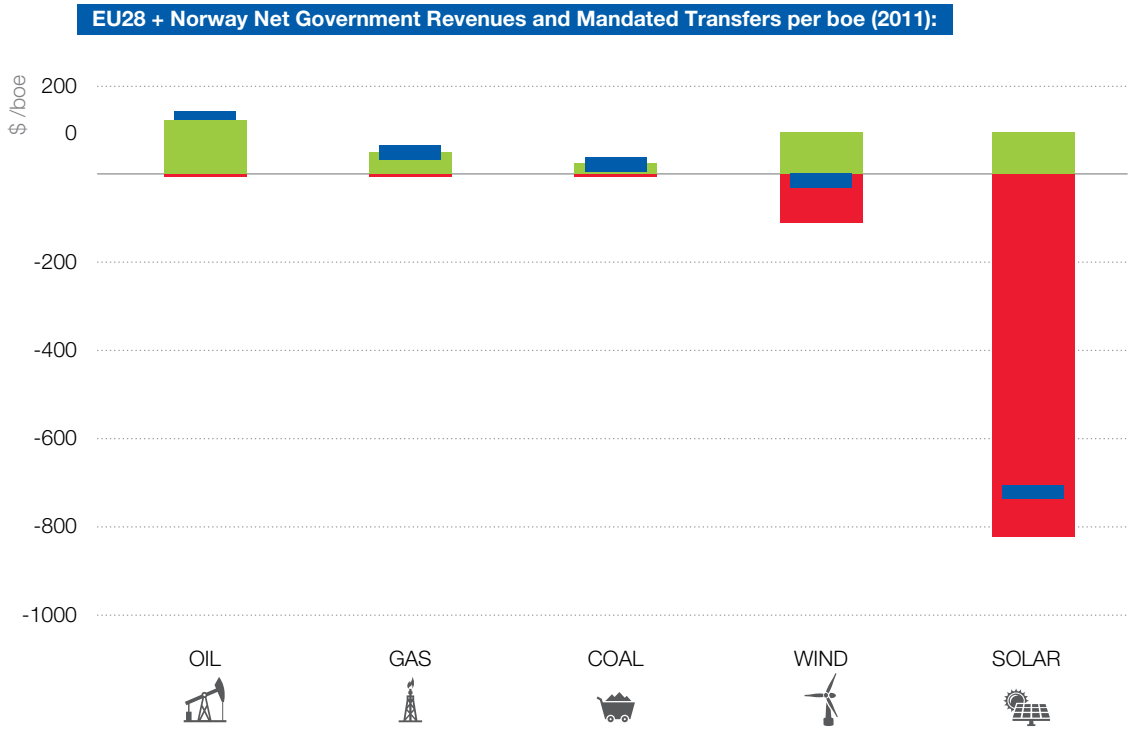
Oil and gas contribute hundreds of billions of euros to European government revenues every year. Far from being subsidised, the oil and gas industry is one of the largest contributors to government revenues in the energy sector.

In 2011 oil and gas contributed €433 billion to the EU and Norwegian government treasuries.

FIG.29 PER UNIT OF PRIMARY ENERGY CONSUMPTION

OIL, GAS AND COAL ARE NET CONTRIBUTORS TO GOVERNMENT REVENUES

Source: NERA



Note: Upstream oil and gas revenues allocated in proportion to production value, resulting in slightly higher allocation to oil.

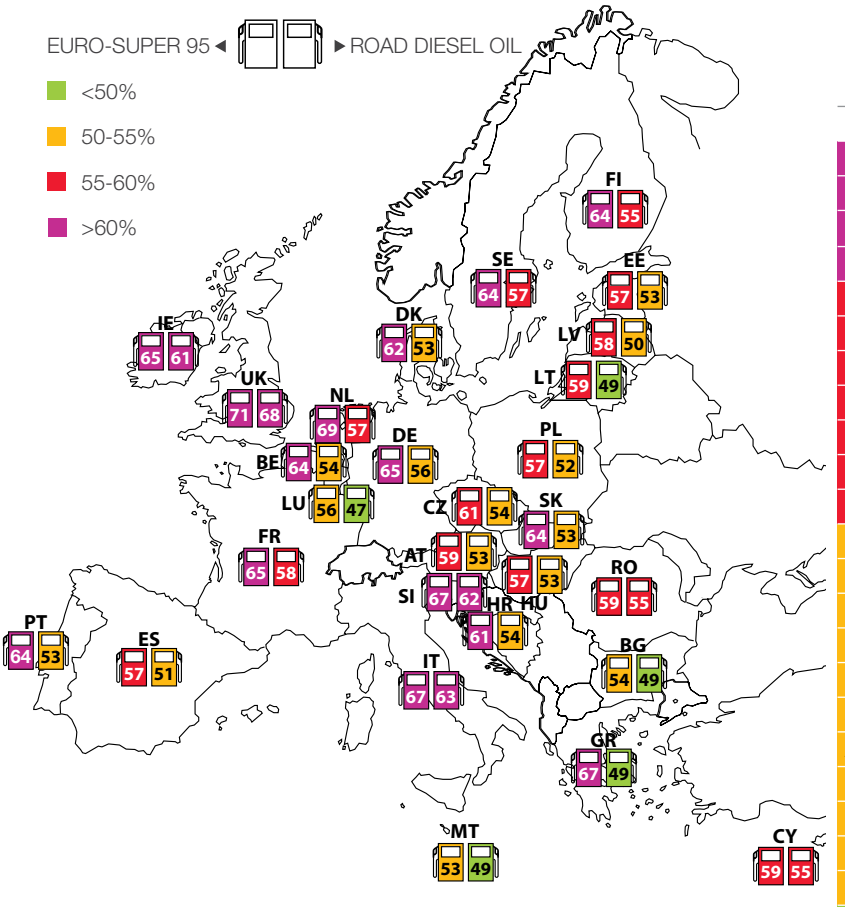
The consumption of one barrel of oil generates $124 (around €90) in government revenue. This contrasts with the consumption of an equivalent amount of energy generated by renewables, which in some cases can cost tax payers over $700 (or more than €500).

FIG.30 TOTAL TAXATION SHARE IN THE END CONSUMER PRICE

Source: European Commission

Euro-Super 95

COUNTRY	%
United Kingdom	71
Netherlands	69
Italy	67
Greece	67
Slovenia	67
Germany	65
Ireland	65
France	65
Sweden	64
Finland	64
Belgium	64
Portugal	64
Slovakia	64
Denmark	62
Czech Republic	61
Croatia	61
Austria	59
Cyprus	59
Lithuania	59
Romania	59
Latvia	58
Hungary	57
Spain	57
Poland	57
Estonia	57
Luxembourg	56
Bulgaria	54
Malta	53



The price at the pump is driven to a large degree by taxes and over half the cost of fuel represents taxes. The taxes on gasoline are generally higher than for diesel. This differential tax treatment has driven a demand shift over the past 10 years.

Fuels Taxes contribute substantially to Member State revenues.

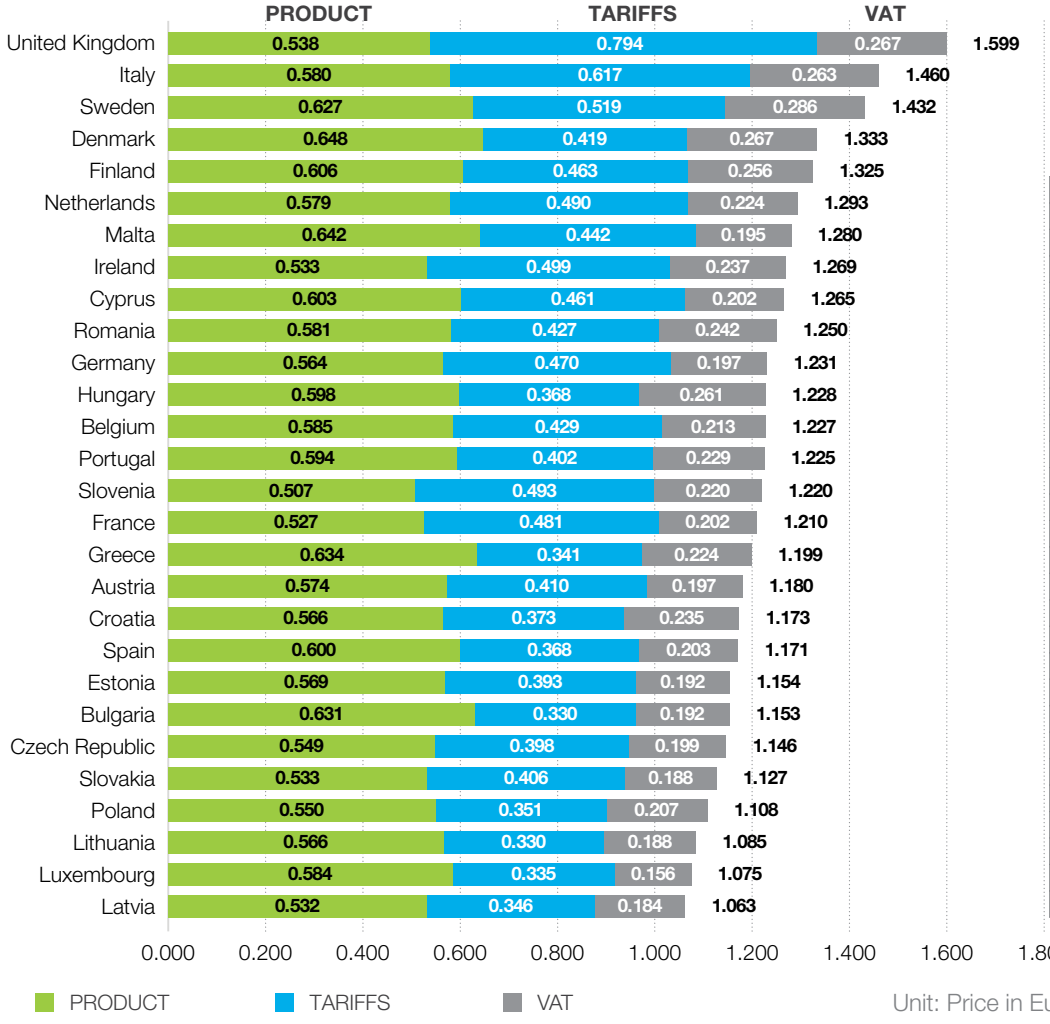
Note: Share at February 2015

ROAD DIESEL OIL

COUNTRY	%
United Kingdom	68
Italy	63
Slovenia	62
Ireland	61
France	58
Netherlands	57
Sweden	57
Germany	56
Romania	55
Finland	55
Cyprus	55
Belgium	54
Czech Republic	54
Croatia	54
Denmark	53
Portugal	53
Slovakia	53
Austria	53
Hungary	53
Estonia	53
Poland	52
Spain	51
Latvia	50
Greece	49
Malta	49
Lithuania	49
Bulgaria	49
Luxembourg	47

FIG.31 BREAKDOWN OF AUTOMOTIVE DIESEL PRICES ACROSS EU (DECEMBER 2014)

Source: European Commission



COUNTRY	% of taxes
United Kingdom	66.35%
Italy	60.31%
Slovenia	58.47%
Ireland	58.02%
France	56.41%
Sweden	56.22%
Netherlands	55.26%
Finland	54.28%
Germany	54.18%
Romania	53.52%
Slovakia	52.70%
Cyprus	52.37%
Belgium	52.30%
Czech Republic	52.10%
Croatia	51.76%
Portugal	51.52%
Denmark	51.43%
Austria	51.38%
Hungary	51.25%
Estonia	50.72%
Poland	50.38%
Latvia	49.92%
Malta	49.82%
Spain	48.77%
Lithuania	47.80%
Greece	47.13%
Luxembourg	45.68%
Bulgaria	45.26%

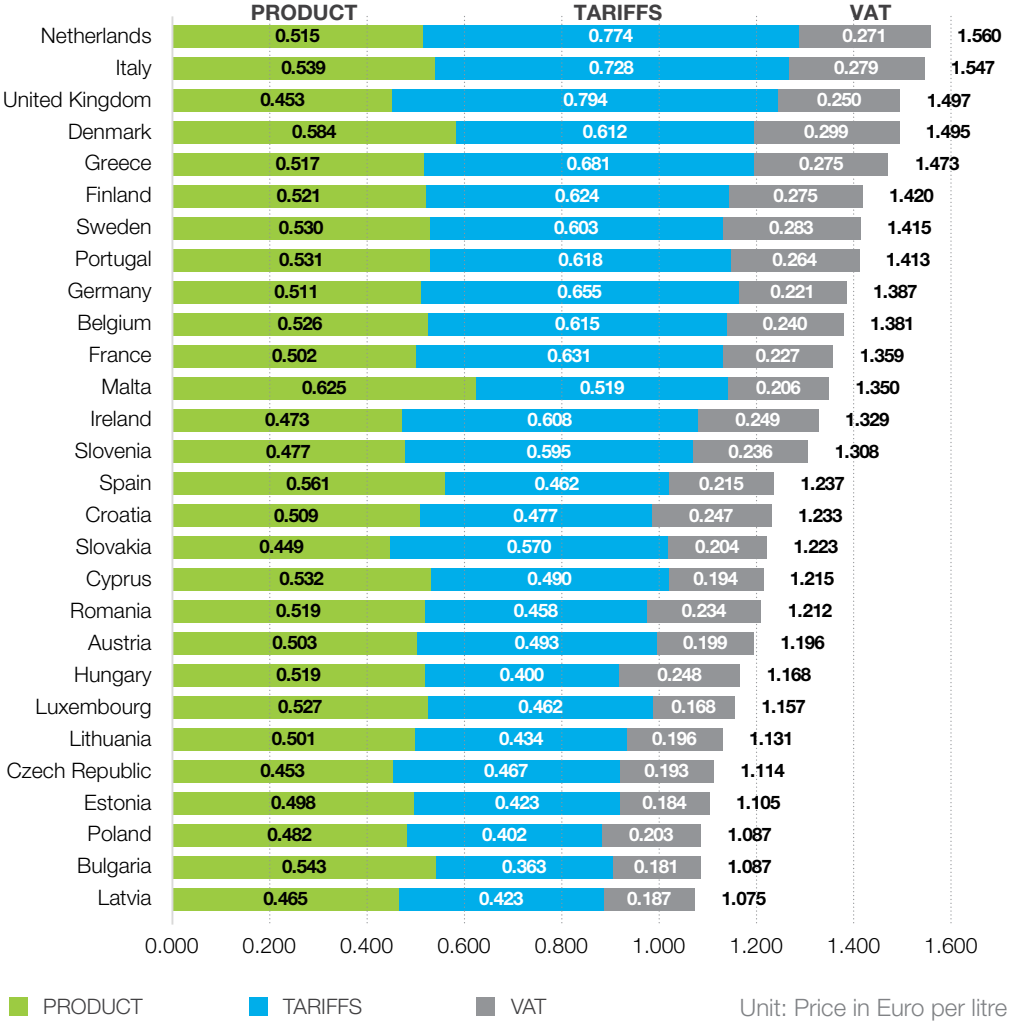
Unit: Price in Euro per litre

Diesel prices are generally lower than gasoline prices due to the lower tax element, with the notable exception of the United Kingdom.

Only a fraction of the price paid at the pump contributes to the refiners' income, the remainder gain to Member States and to buy the crude oil.

FIG.32 BREAKDOWN OF AUTOMOTIVE GASOLINE PRICES ACROSS EU (DECEMBER 2014)

Source: European Commission



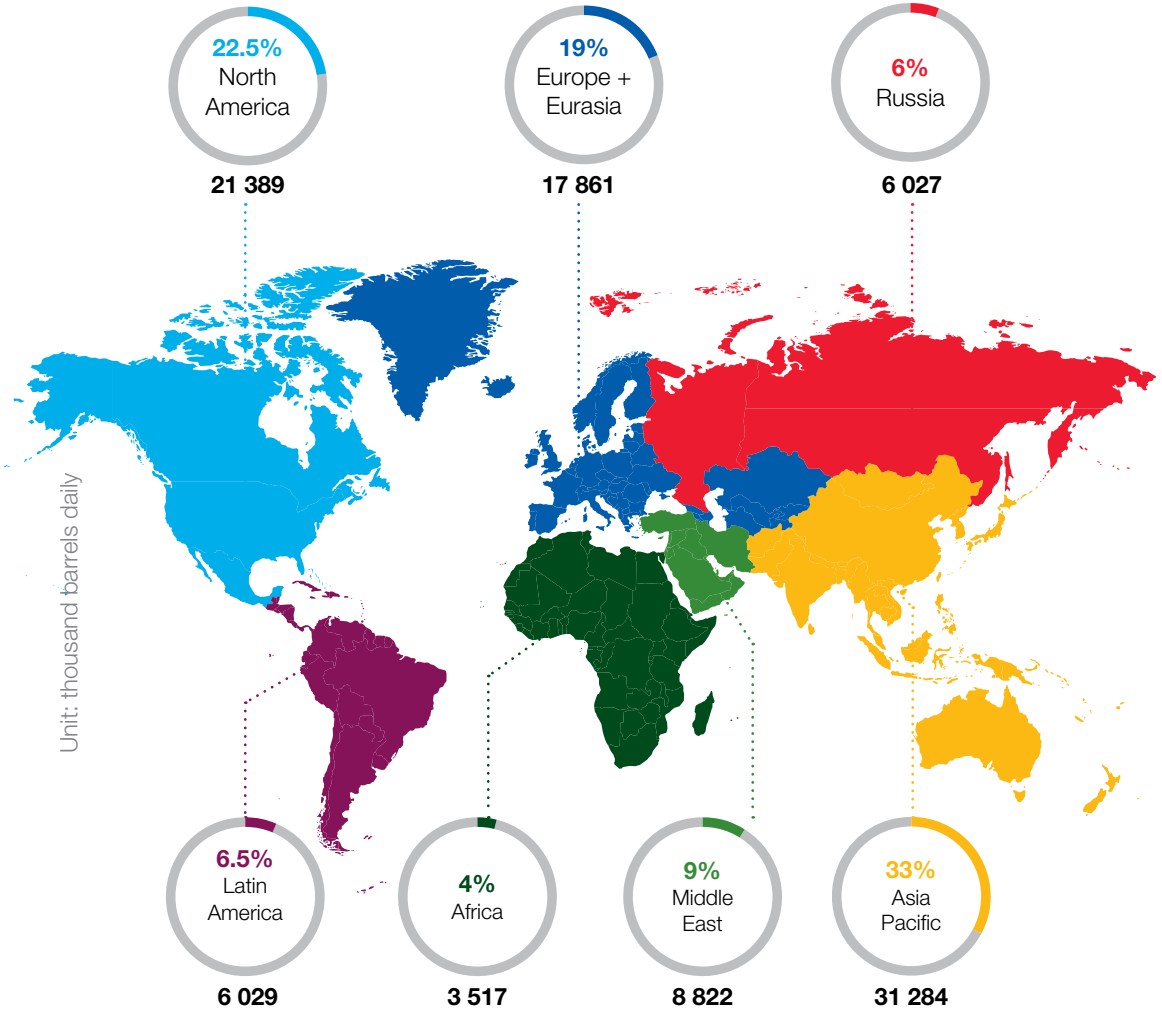
COUNTRY	% of taxes
United Kingdom	69.73%
Netherlands	66.98%
Italy	65.12%
Greece	64.93%
Ireland	64.43%
Slovenia	63.50%
Slovakia	63.29%
Finland	63.28%
Germany	63.15%
France	63.05%
Sweden	62.57%
Portugal	62.40%
Belgium	61.92%
Denmark	60.93%
Czech Republic	59.30%
Croatia	58.69%
Austria	57.92%
Romania	57.18%
Latvia	56.72%
Cyprus	56.26%
Lithuania	55.75%
Poland	55.64%
Hungary	55.53%
Estonia	54.93%
Spain	54.69%
Luxembourg	54.48%
Malta	53.73%
Bulgaria	50.07%

Gasoline prices are generally higher than diesel prices due to the higher tax element.

Only a fraction of the price paid at the pump contributes to the refiners' income, the remainder going to Member States and to buy the crude oil.

FIG.33 GLOBAL REFINING CAPACITY AS OF 2013

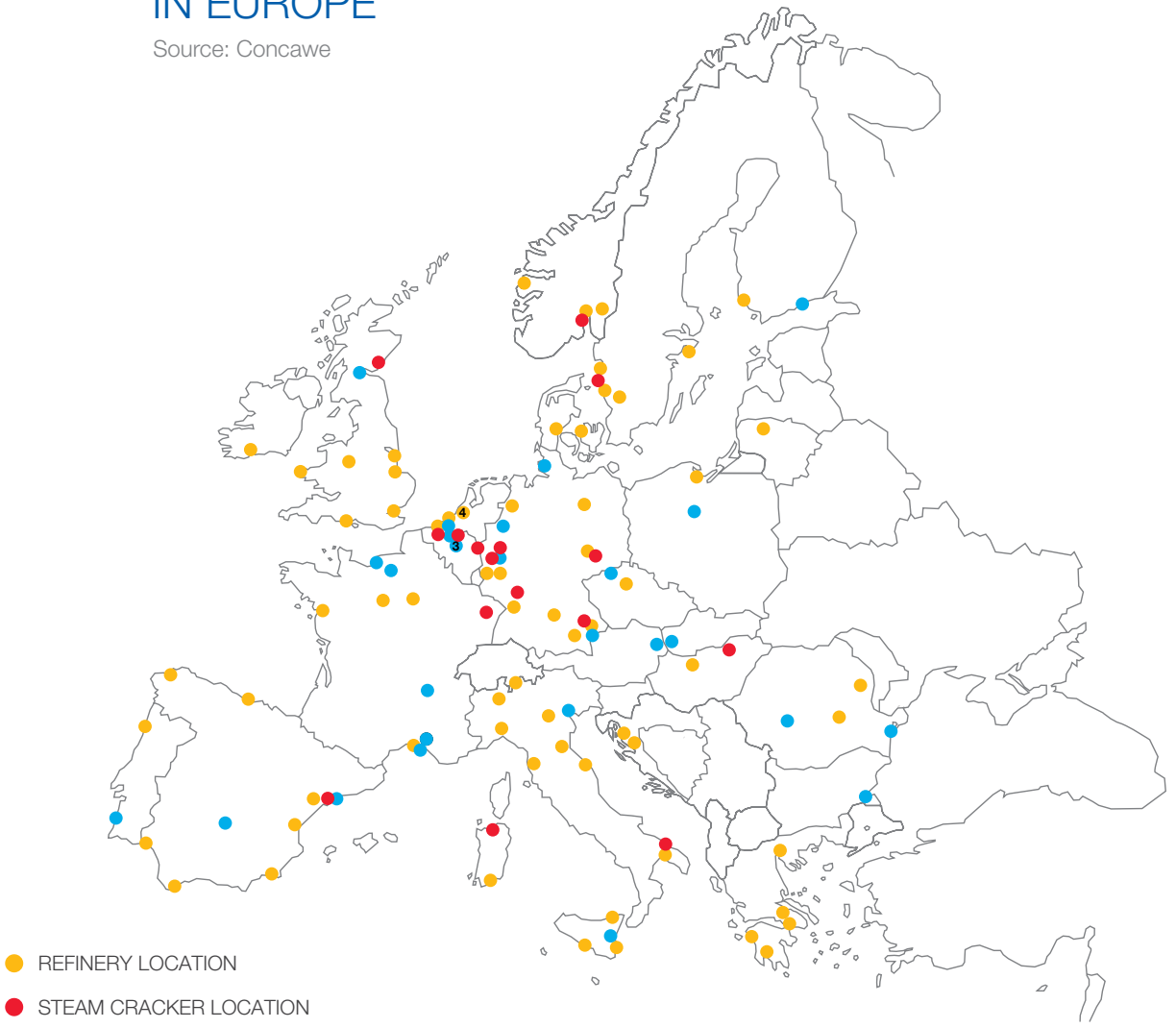
Source: BP Statistical Review of World Energy 2014



Refining is spread around the world and is a truly global business. The share of Europe & Eurasia refining has decreased from over 20% in 2012 to 19% in 2013 but still remains the third largest refining region.

FIG.34 REFINERY/STEAM CRACKER SITES IN EUROPE

Source: Concawe



REFINERY LOCATION

STEAM CRACKER LOCATION

INTEGRATED REFINERY / STEAM CRACKER LOCATION

A large number of refineries are integrated with or located very close to steam crackers that produce products for the petrochemicals industry.

Such interconnections show how refining is an intrinsic part of the industrial value chain and provides the basis for highly advance, high value products.

FIG.35 84 MAINSTREAM REFINERIES WERE OPERATING IN THE EU, NORWAY AND SWITZERLAND AT END 2014

Source: Concawe

COUNTRY	Number of refineries	Refining capacity	COUNTRY	Number of refineries	Refining capacity
Austria	1	10.2	Ireland	1	3.6
Belgium	3	39.2	Italy	10	84
Bulgaria	1	5.0	Lithuania	1	10.0
Croatia	2	6.7	Netherlands	6	66.0
Czech Republic	2	8.4	Poland	2	24.7
Denmark	2	8.8	Portugal	2	16.0
Finland	2	13.2	Romania	3	15.0
France	8	70.5	Slovakia	1	5.6
Germany	11	102.3	Spain	9	70.5
Greece	4	24.0	Sweden	3	21.6
Hungary	1	8.1	United Kingdom	6	65.6
EU TOTAL: Refineries = 81 | Refining capacity = 679					
Norway	2	17.3			
Switzerland	1	3.4			
TOTAL NO + CH: Refineries = 3 | Refining capacity = 20.7					
TOTAL: Refineries = 84 | Refining capacity = 699.7					

EU EFTA

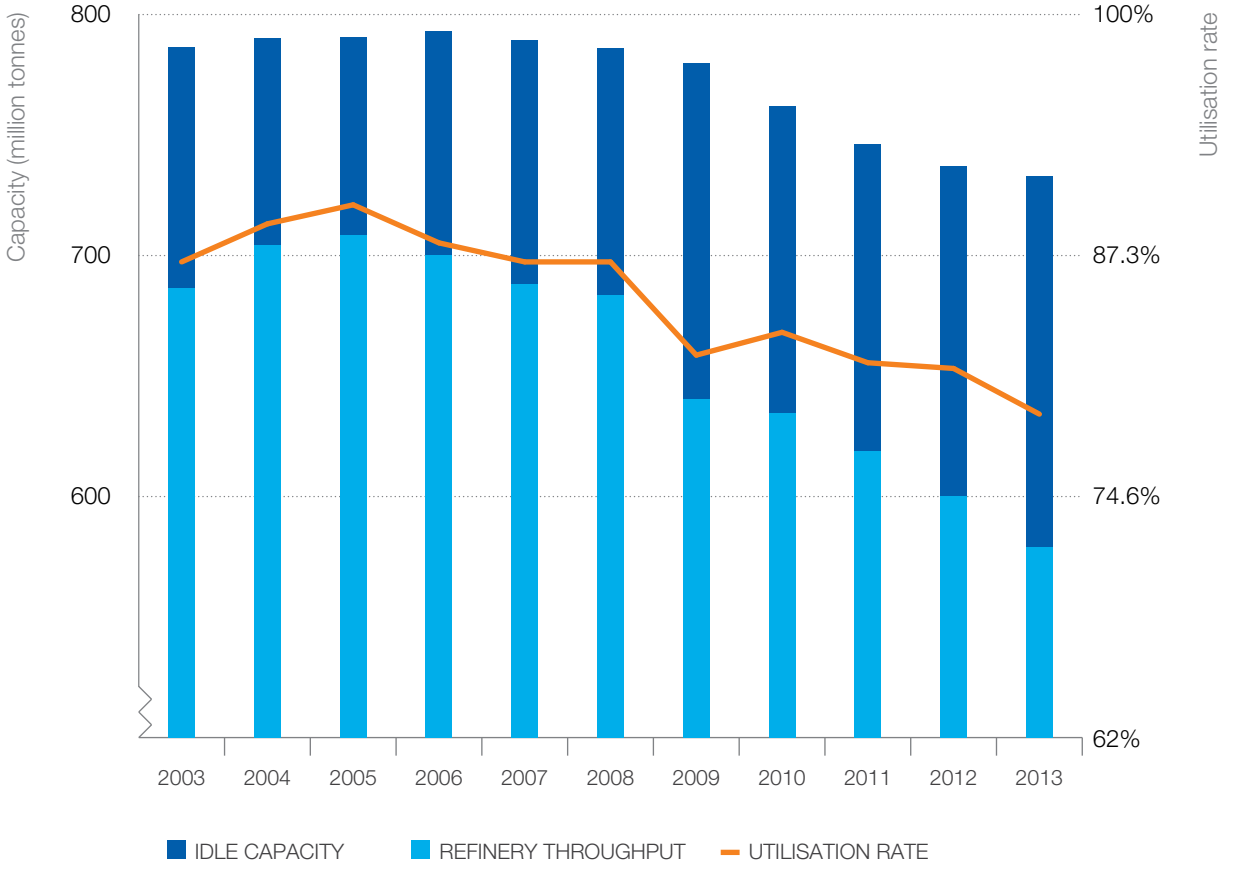
Threshold >50 kbbl/d or 2.5Mt/a

At the end of 2014, there are 84 `mainstream` refineries in the EU & EFTA. In addition there were 22 small or speciality sites.

Note: Refining capacity is expressed in million tonnes per year.

FIG.36 CAPACITY AND UTILISATION OF EUROPEAN REFINERIES

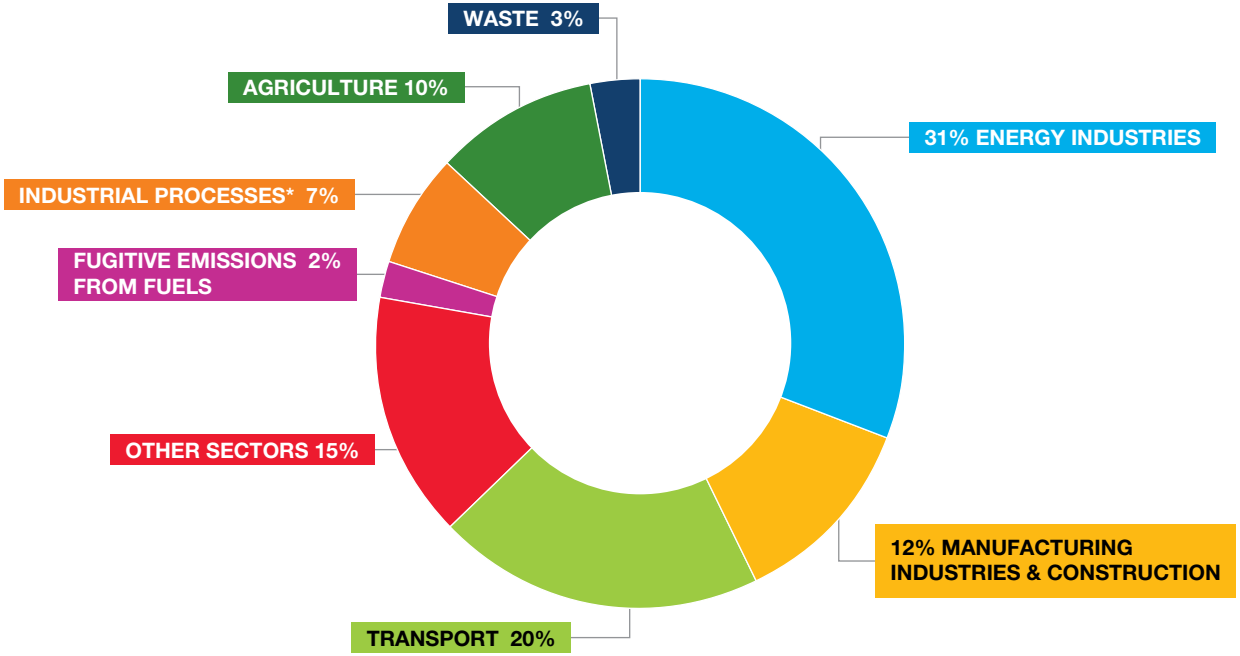
Source: BP Statistical Review of World Energy 2014



The utilisation rate of EU refineries dropped from the 2012 levels to about 80%. The continued decrease of demand and evolution of market demand (increasing diesel/gasoline imbalance) forces European refiners to adapt these market forces.

FIG.37 GHG EMISSIONS BY SECTOR IN THE EU IN 2012

Source: European Environmental Agency

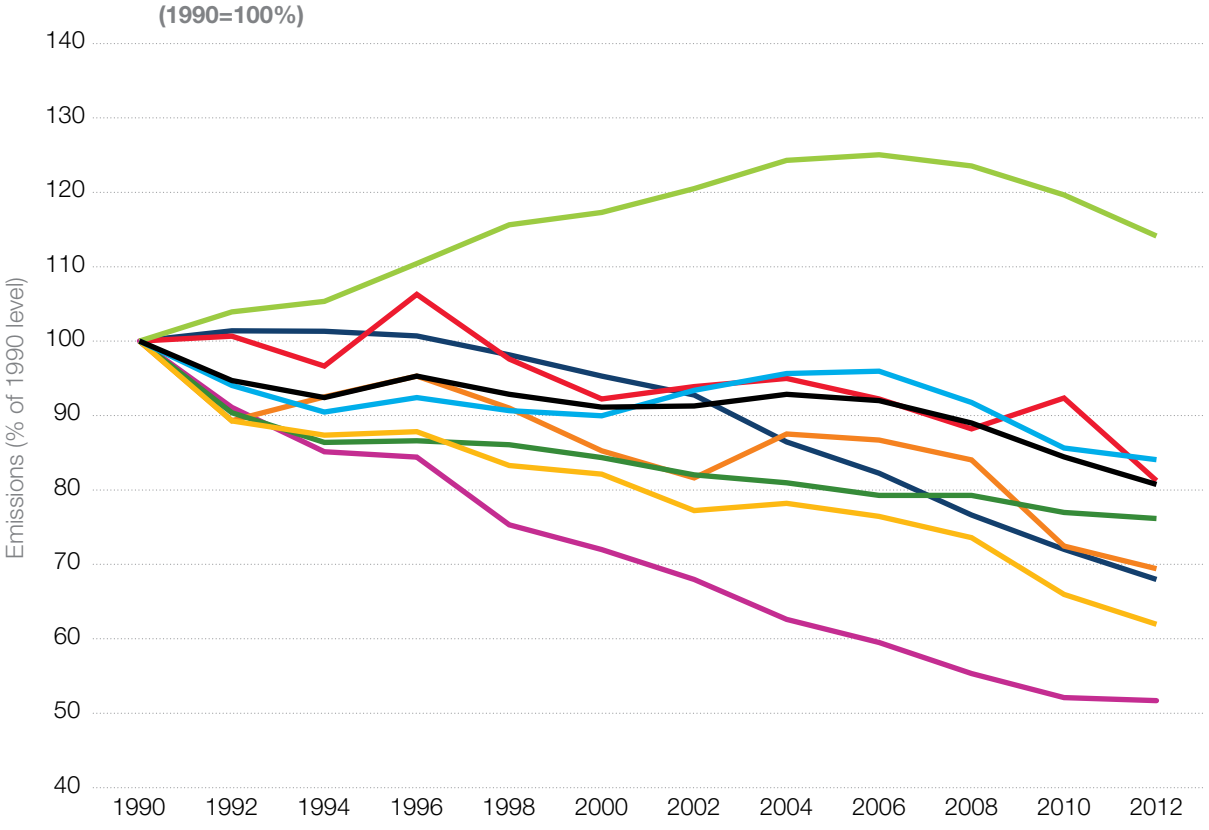


***NOTE:** This sector includes by-product or fugitive emissions of greenhouse gases from industrial processes. Emissions from fuel combustion in industry are reported under Energy.

Energy and manufacturing industries accounts for 43% of GHG emissions in the EU. Transport, supplied around 90% by oil refined products, generates 20% of EU GHG emissions.

FIG.38 CO_2 EMISSIONS TREND BY SECTOR

Source: European Commission

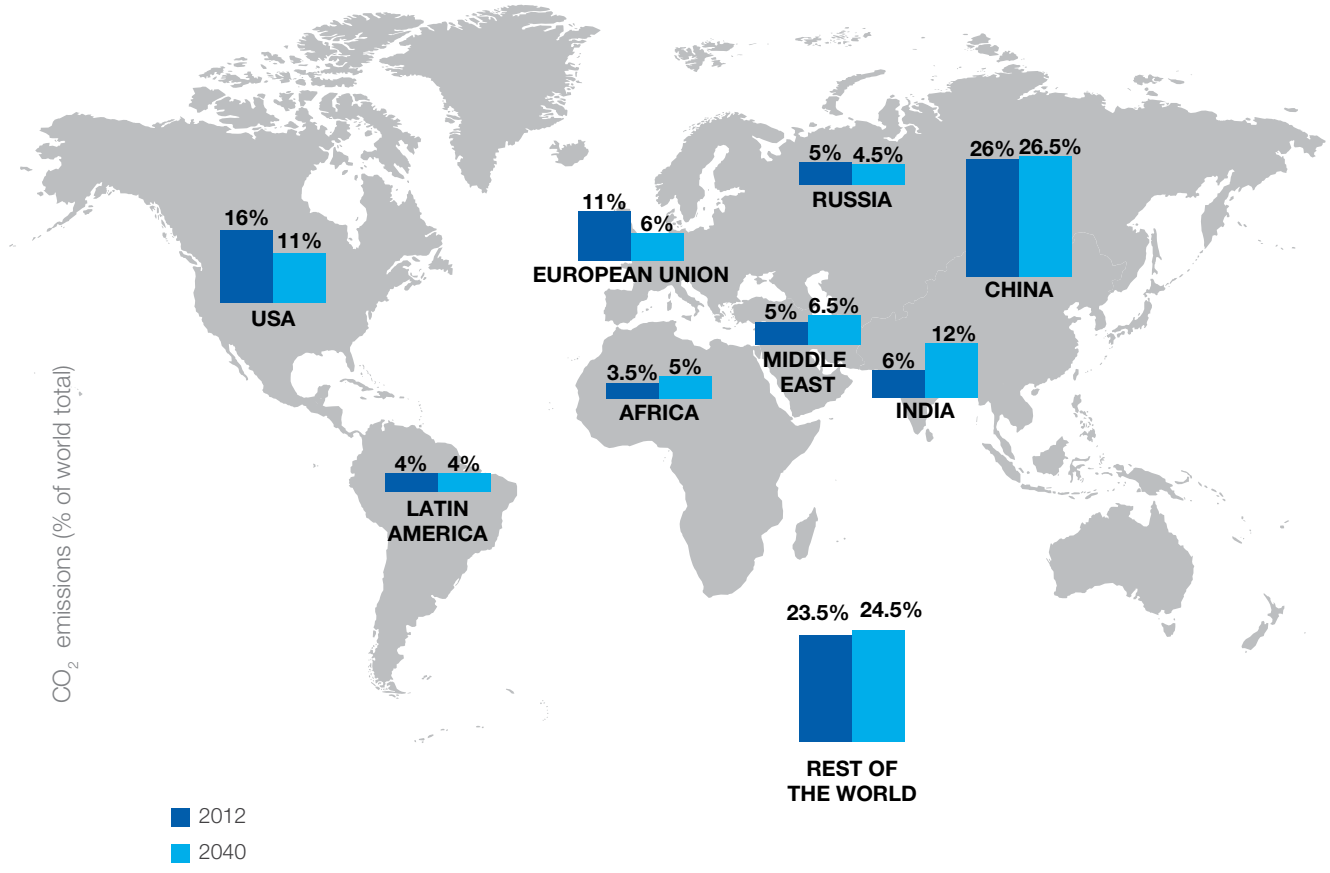


CO_2 emissions per sector are generally all declining since 2007. Industry (processes and manufacturing) CO_2 emissions reduced sharply over the period 2007-2012 and are now between 30% and 38% lower than 1990 level.

CO_2 emissions from transport are also steadily decreasing since 2007.

FIG.39 DECLINING EU SHARE IN GLOBAL CO_2 EMISSIONS

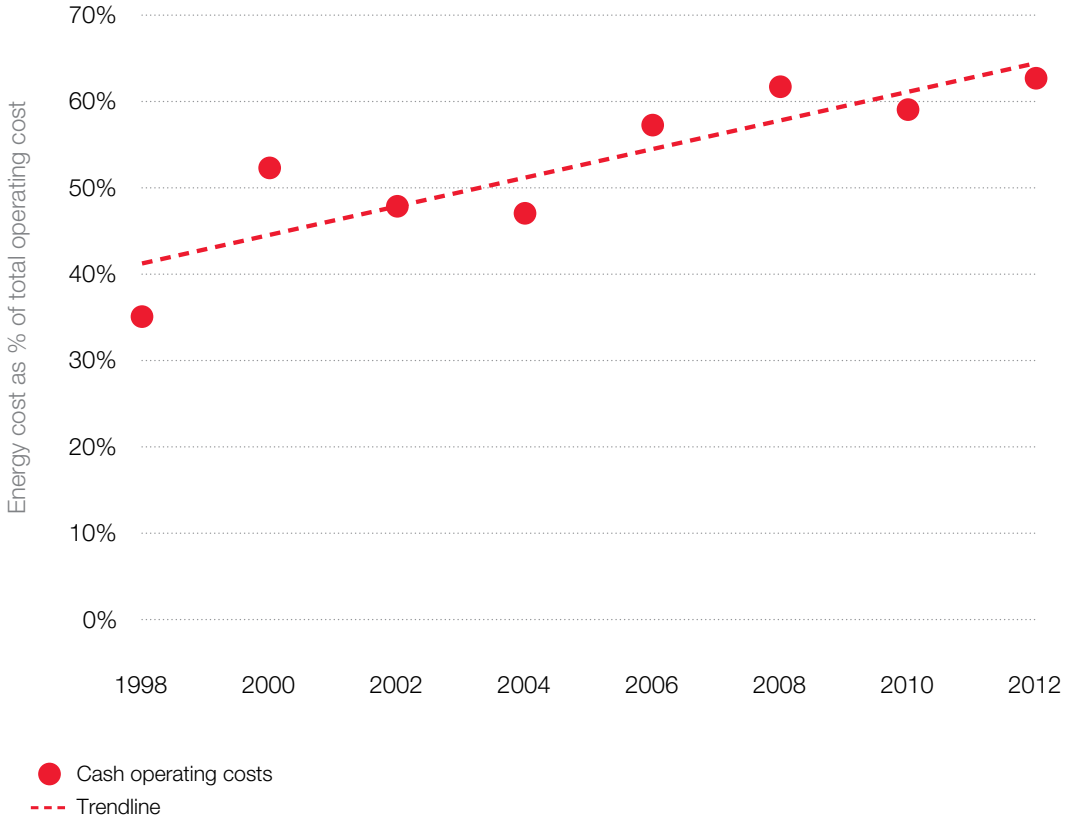
Source: IEA, WEO 2014



In 2012 the EU accounted for 11% of global CO_2 emissions and is expected to account for only 6% by 2040.

FIG.40 EU REFINERIES' ENERGY COST AS PERCENTAGE OF TOTAL OPERATING COSTS

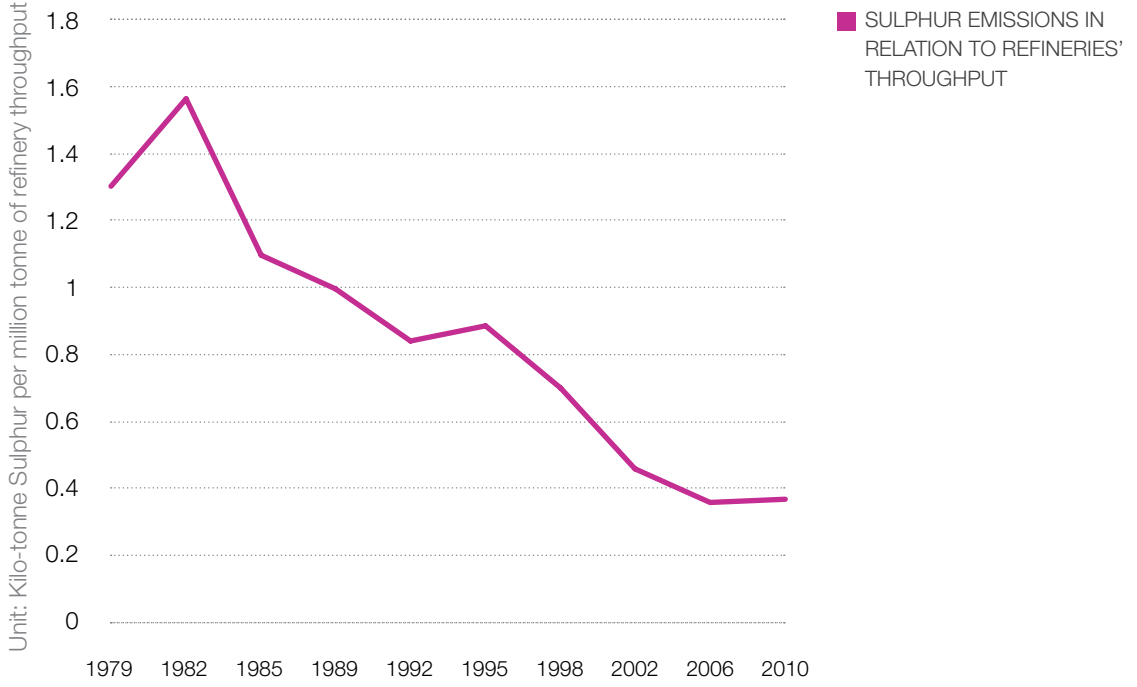
Source: Concawe



The share of energy costs has continuously increased over the past 20 years to reach in 2012 over 60% of total operating costs. Despite strong records in energy efficiency gains and a leading position in this field, European refiners suffer a strong competitive disadvantage from these high energy costs.

FIG.41 REFINERY SULPHUR EMISSIONS HAVE BEEN DECLINING OVER THE YEARS

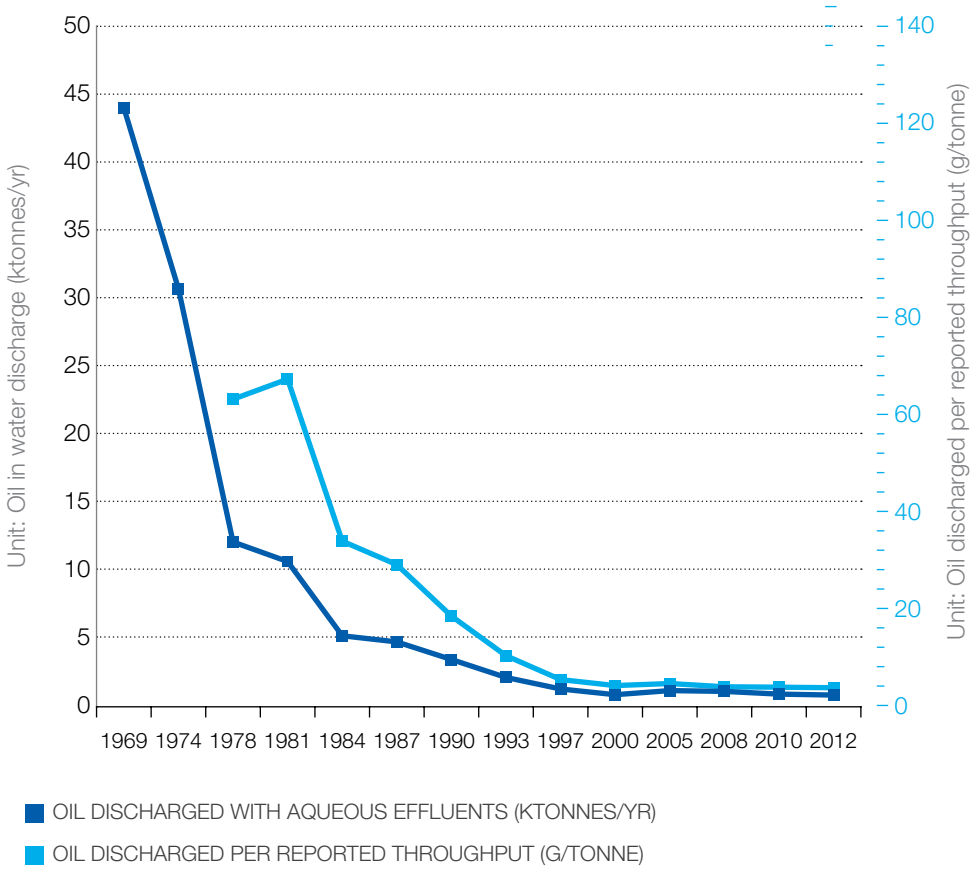
Source: Concawe



The sulphur emissions from refinery operations decreased by 75% over the past 30 years.

FIG.42 QUALITY OF REFINERY WATER EFFLUENT: OIL DISCHARGED IN WATER

Source: Concawe

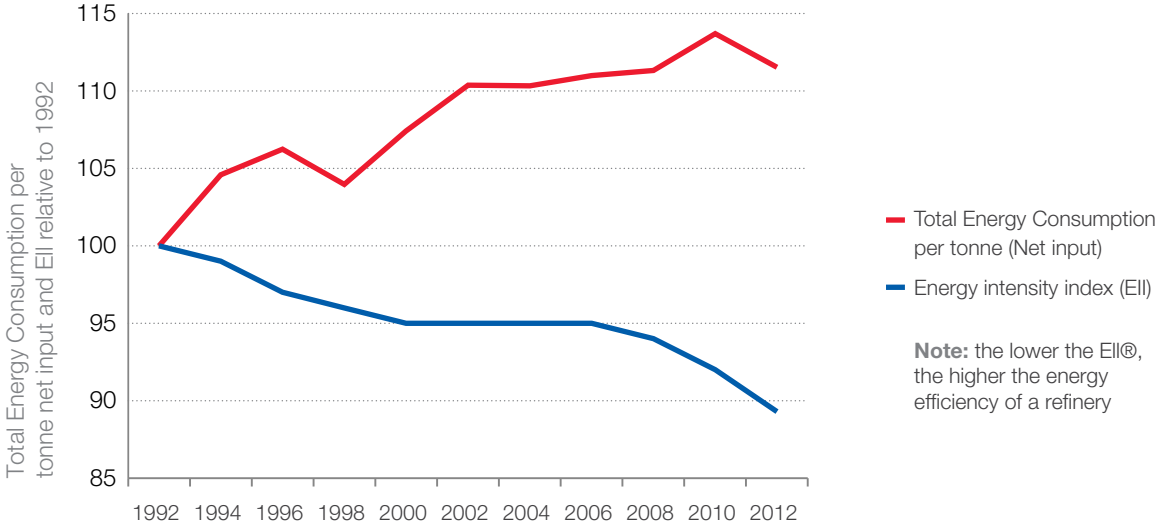


Over the years the EU Refineries have significantly improved the quality of refinery water effluent.

The amount of oil discharged in effluents from reporting installations continued to decrease to extremely low levels - both in terms of the absolute amount discharged and the amount expressed relative to the volume of feedstock processed (throughput) and the refining capacity of the installations.

FIG.43 EU REFINERIES' ENERGY CONSUMPTION AND EFFICIENCY TRENDS RELATIVE TO 1992

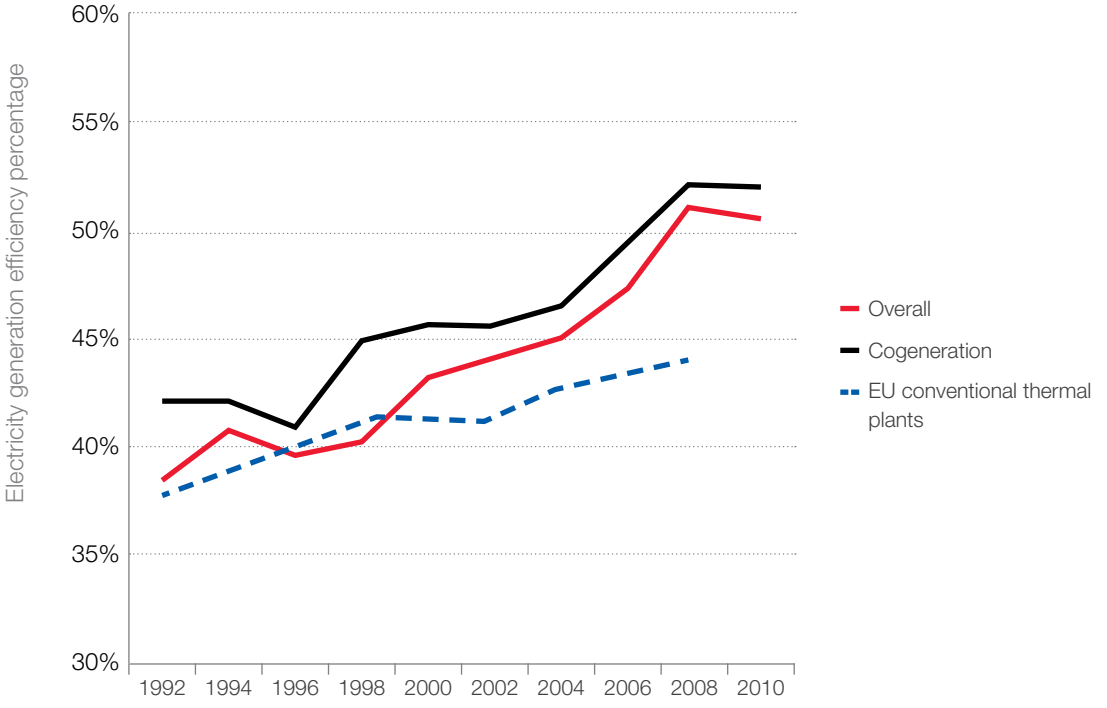
Source: Solomon Associates



The index shows that EU refineries have improved their energy efficiency by about 10% over the past 20 years. This improvement was achieved despite more energy intensive refinery operations to produce cleaner fuels and meet shifts in market demand. The corresponding annual energy saving is roughly equivalent to the total annual average energy consumption of four large EU refineries.

FIG.44 ELECTRICITY GENERATION EFFICIENCY

Source: Concawe

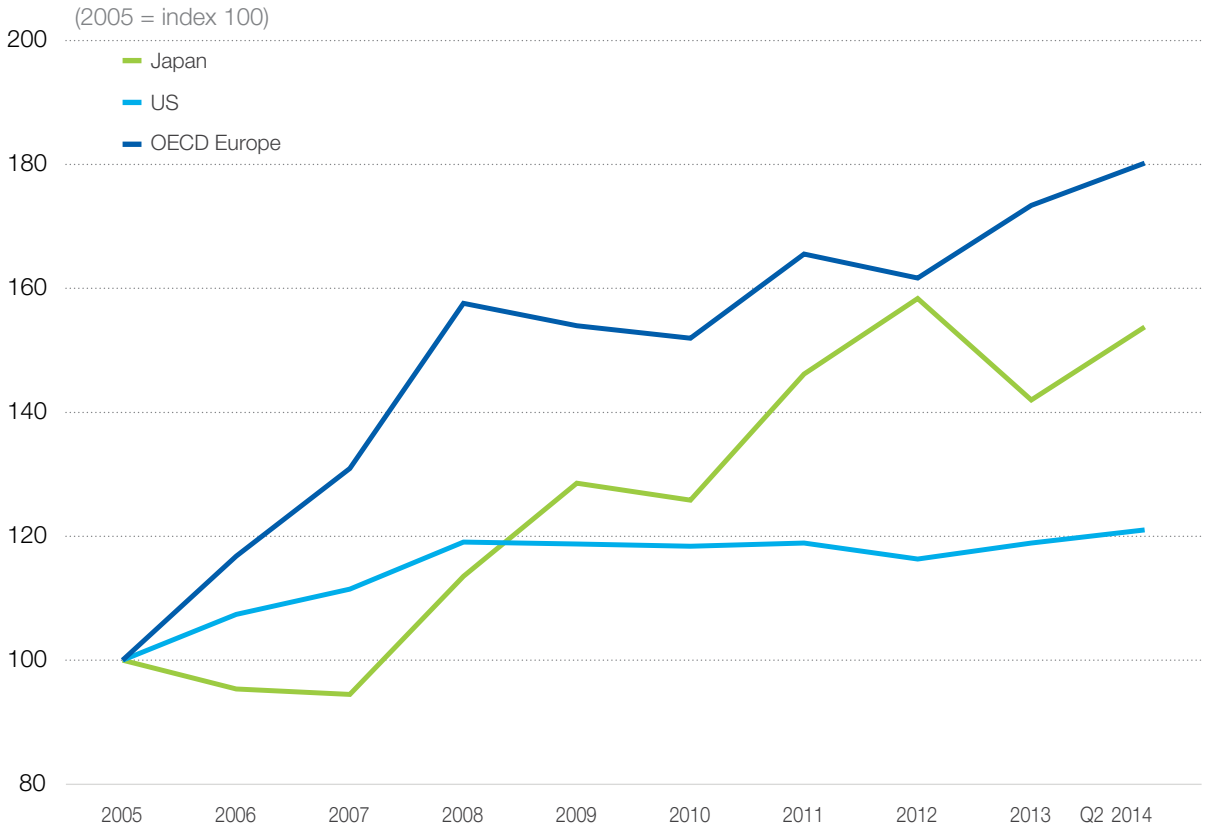


Refineries have long recognised the considerable efficiency gains offered by cogeneration, which now accounts for more than 90% of the electricity produced in EU refineries.

As a result the average efficiency of electricity generation in EU refineries is substantially higher than the EU average efficiency of electricity production from the average of conventional thermal plants of the electricity sector.

FIG.45 EVOLUTION OF END-USER ELECTRICITY PRICES FOR INDUSTRY

Source: IEA

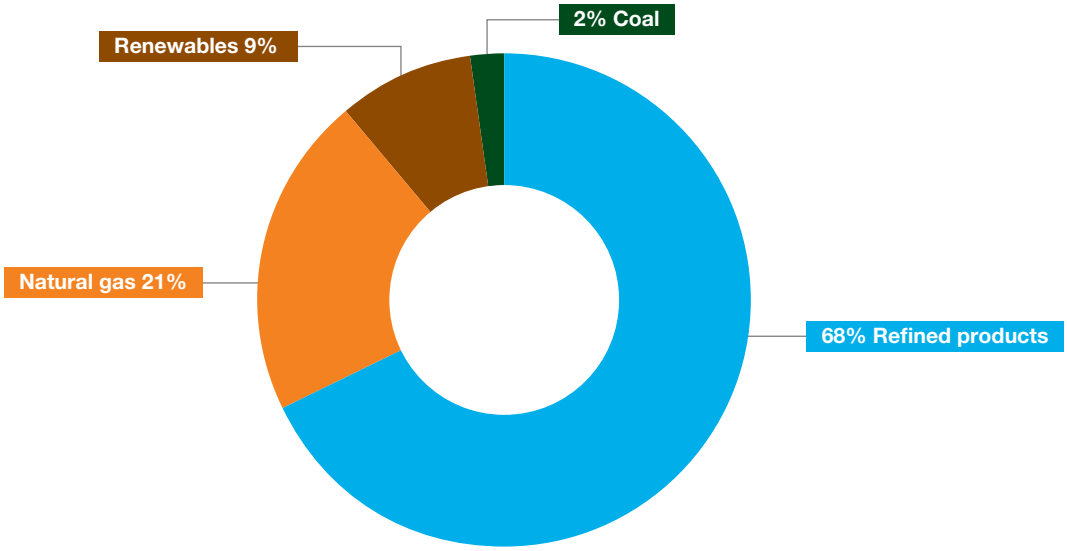


Over the past few years US industry gained a significant competitive advantage as a result of low electricity prices.

While European industry faced a 80% energy price increase between 2005 and 2014, the price of electricity for US industry only increased by 20% over the same period.

FIG.46 RELATIVE CHEMICAL INDUSTRY RAW MATERIAL USE

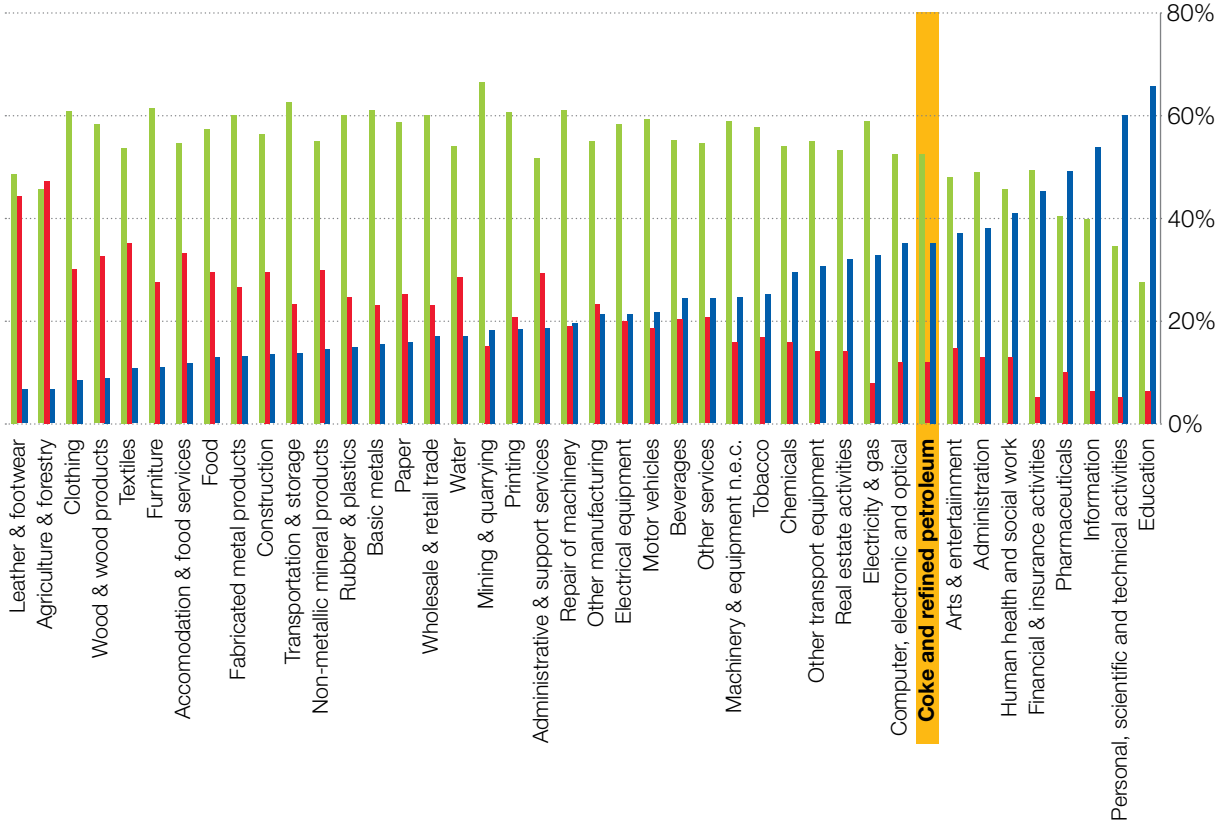
Source: CEFIC



The EU Refining sector is closely integrated with the Petrochemical Sector. In 2011, 68% of the petrochemical feedstock relied on refined products, such as naphtha and petroleum gases.

FIG.47 SKILL AND KNOWLEDGE INTENSITIES (% OF TOTAL EMPLOYMENT)

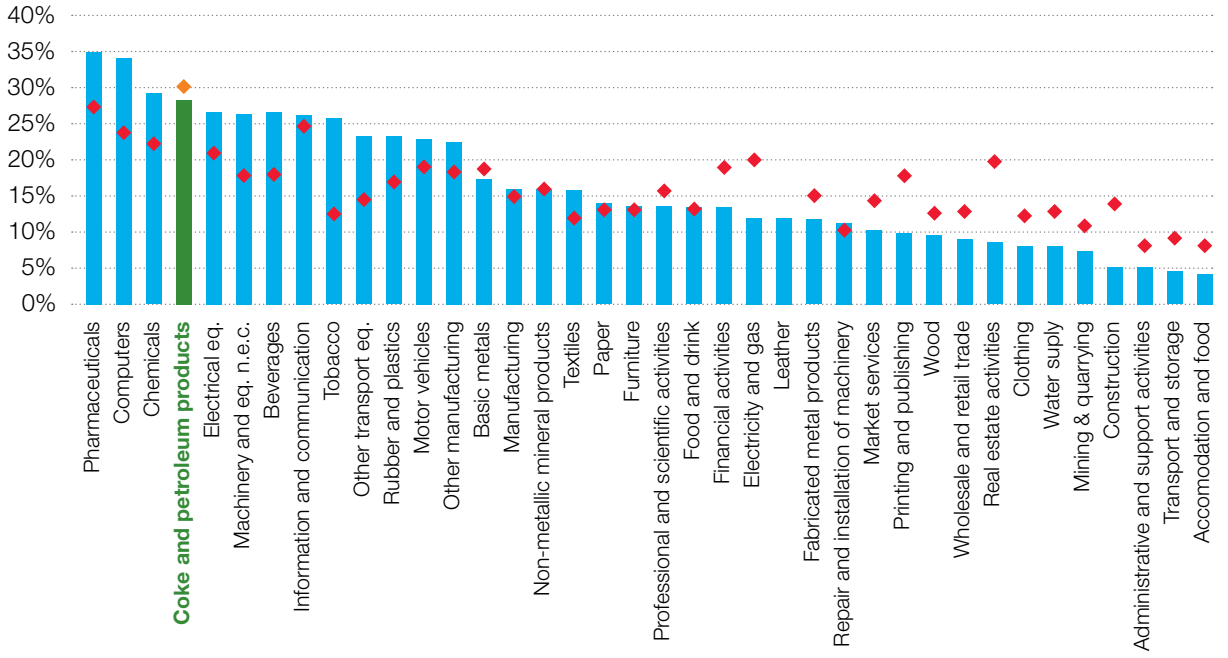
Source: European Competitiveness Report 2013



According to the European Commission's Competitiveness Report for 2013, the European refining industry employs one of the largest percentages of highly skilled workers of all manufacturing industries, just after the pharmaceutical industry.

FIG.48 EU REFINING INDUSTRY # 1 PROCESS INNOVATION AND AMONG MOST INNOVATIVE INDUSTRIES FOR PRODUCTS

Source: European Competitiveness Report 2013



PRODUCT INNOVATION

PROCESS INNOVATION

COKE AND PETROLEUM PRODUCTS

PROCESS INNOVATION

According to data presented by the European Commission in its annual Competitiveness Report, the EU Refining industry was the leading industrial sector in process innovation and among the top 4 for product innovation.

FIG.49 NUMBER OF PETROL STATIONS IN EUROPE END OF 2014

Source: National Oil Industry Associations + FPS Economy - DG Energy

Unit: Number of petrol stations

COUNTRY	END 2014	COUNTRY	END 2014
Austria	2 622	Italy	21 800
Belgium	3 386	Latvia	609
Bulgaria	2 980 **	Lithuania	
Croatia		Luxembourg	238
Cyprus	280 *	Malta	
Czech Republic	3 792	Netherlands	3 825
Denmark	2 007	Poland	6 479
Estonia	440 *	Portugal	2 709
Finland	1 892	Romania	2 050
France	11 356	Slovakia	857
Germany	14 562	Slovenia	546
Greece	6 245	Spain	10 712
Hungary	1 914	Sweden	2 723 *
Ireland	1 798	United Kingdom	8 609
EU TOTAL	**114 431**		
Norway	1 602		
Switzerland	3 480		
Turkey	12 623 *		
TOTAL NO + CH + TR	**17 705**		
TOTAL	**132 136**		

EU

NON EU

* Numbers for 2013

** Numbers for 2012

There were over 130,000 petrol stations in the EU, Norway, Switzerland and Turkey operating in 2014, fuelling some 230 million cars and over 30 million trucks on Europe's roads.

About FuelsEurope

FuelsEurope is a division of the European Petroleum Refiners Association, an AISBL operating in Belgium. This association, whose members are all 42 companies that operate petroleum refineries in the European Economic Area in 2014, is comprised of FuelsEurope and Concawe divisions, each having separate and distinct roles and expertise but administratively consolidated for efficiency and cost effectiveness.

Members account for almost 100% of EU petroleum refining capacity and more than 75% of EU motor fuel retail sales.

FuelsEurope aims to inform and provide expert advice to the EU institutions and other stakeholders about European Petroleum Refining and Distribution and its products in order to:

- Contribute in a constructive way to the development of technically feasible and cost effective EU policies and legislation.
- Promote an understanding amongst the EU institutions and citizens of the contribution of European Petroleum Refining and Distribution and its value chain to European economic, technological and social progress.

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