

Oil and Oil Product Markets in Turmoil

The importance of Russian oil and oil product supplies for EU and NW Europe/the Netherlands

Coby van der Linde

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Presentatie voor 'Rondetafelgesprek: voorbereiden op grotere risico's in leveringszekerheid van brand- en grondstoffen en de langere termijn koolstofarme oplossingsrichtingen', georganiseerd door VNO-NCW/VNPI/Platform Duurzame Brandstoffen/CIEP

Current Oil Market Fundamentals

- **Crude Oil Production cannot match demand (demand destruction looms) and about 3 - 4 mb/d could be lost in the short term due to current self-sanctioning (plus outages CPC pipeline)**
 - Investments in new production low in the past few years
 - US production will increase but stricter investor demands (Wallstreet) reluctant to loosen business model discipline;
 - OPEC has difficulty following their own production quota - spare capacity resides in UAE and Saudi Arabia;
 - Oil is NOT a homogeneous product – redirecting flows of certain crude oil types may be an issue for refineries and their per barrel distribution of oil product output
- **International Oil Product Trade is substantial and EU depends on oil product imports to meet demand (fuel and feedstock)**
 - EU is short on Diesel, Fuel oil and Naphtha
 - China halted export of diesel
 - Some EU refineries take oil directly from oil pipelines from Russia/Belarus
 - Mismatch in type of tankers used for Russian oil and oil product trade to re-route oil and oil products could lead to a loss of barrels
- **Finance:**
 - Financing margin calls and work capital is becoming difficult (for a variety of companies and sectors) including traders
 - Dollar trade and emerging alternatives
 - Russia-India: trade in Rupees to work around swift
 - Saudi-Arabia-China: contemplating trade in Yuan
 - Russia: demanding energy trade in Rubles
 - Liquidity in oil (and LNG/gas) markets is dwindling
 - Insurance of and tanker chartering has become problematic for Baltic and Black Sea going forward

Headlines this week (FT, Bloomberg, Reuters):

Oil rises in volatile trade amid CPC pipeline disruption

Cash Crunch Drives Wild Moves in Commodities

Exchanges and brokers are demanding more money up front to trade oil, wheat and natural gas, straining markets already dealing with supply disruptions from the Ukraine war

Russia to switch gas invoicing to roubles for European buyers

Putin to implement measures 'in shortest possible time' in apparent effort to boost national currency

Vitol urges regulators to maintain 'integrity' of financial markets

Oil trader's comments come as broader industry faces huge demands for cash to cover hedges

Top oil traders warn prices could breach \$200 a barrel

Boycott of Russia since Ukraine invasion will have a lasting effect on energy markets

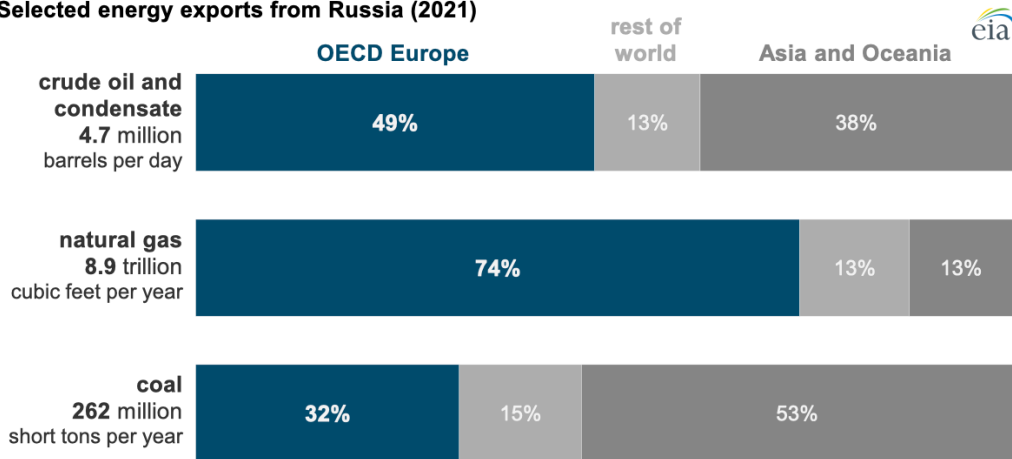
Olaf Scholz warns immediate Russian energy ban would trigger recession in Europe

Traders warn of looming global diesel shortage

Loss of Russian supplies could lead to 'systemic shortfall' in Europe, says Vitol chief

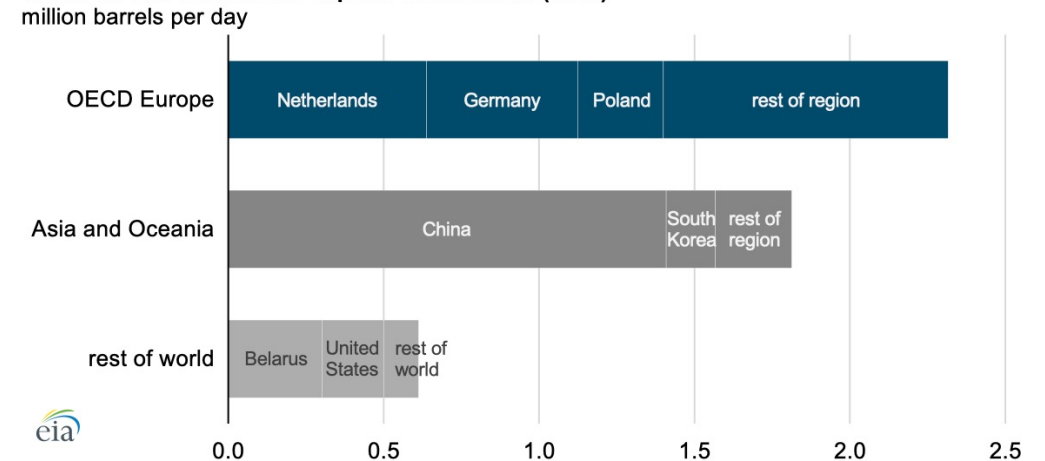
Russia is a large exporter of energy to EU and one of the three largest producers in the world

Selected energy exports from Russia (2021)



Source: Graph by the U.S. Energy Information Administration, based on Russia's export statistics and partner country import statistics published by Global Trade Tracker

Crude oil and condensate exports from Russia (2021)

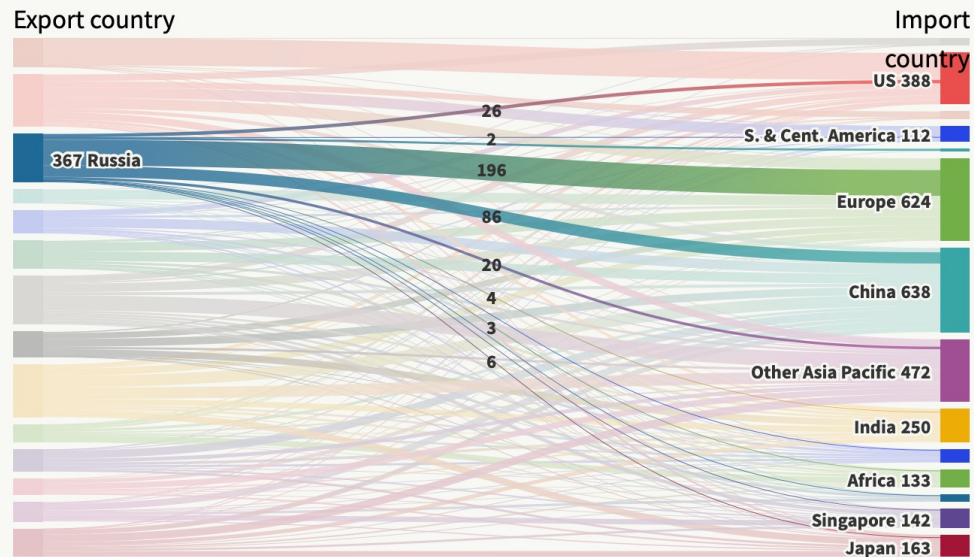


Source: Graph by the U.S. Energy Information Administration, based on Russia's export statistics and partner country import statistics published by Global Trade Tracker

EIA, 14 March 2022

Origin of EU crude and oil product imports

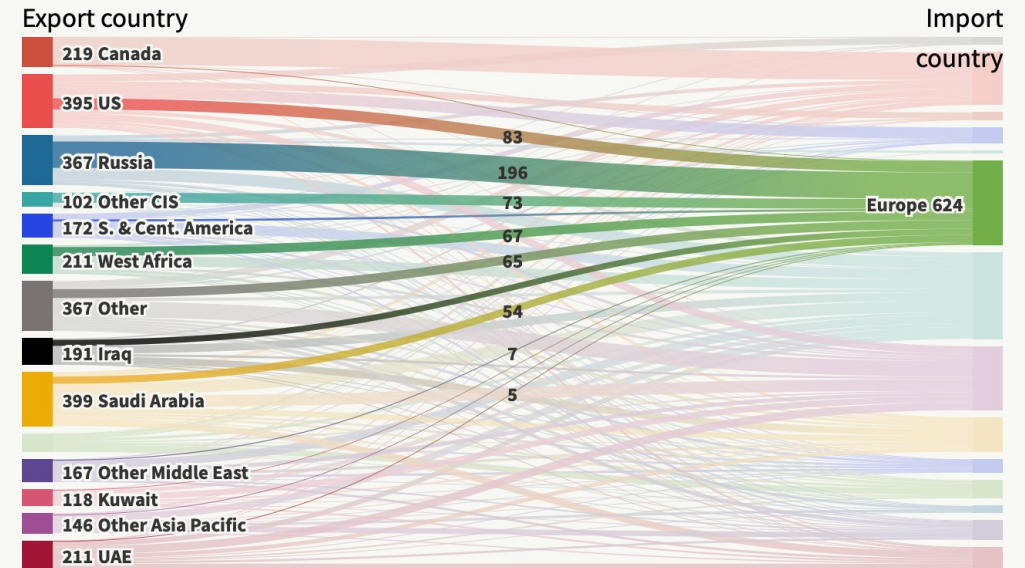
Figure 1: Global trade in crude oil and petroleum products in MT (2020)
Russia surpassed the US and Saudi Arabia in 2021 to become the first world exporter



Source: BP 2021 statistical review. • Note: Europe refers to the European members of the OECD plus Albania, Bosnia-Herzegovina, Bulgaria, Croatia, Cyprus, North Macedonia, Georgia, Gibraltar, Latvia, Lithuania, Malta, Montenegro, North Macedonia, Romania and Serbia.



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Bruegel, 17 March 2022

Refineries in EU: dependence on Russian pipelines in Germany and East Europe

- dedicated pipeline network between industrial clusters/airports
- commercial use of NATO pipeline system for EU oil product transportation in EU
- rail, road and river also important to supply inland markets

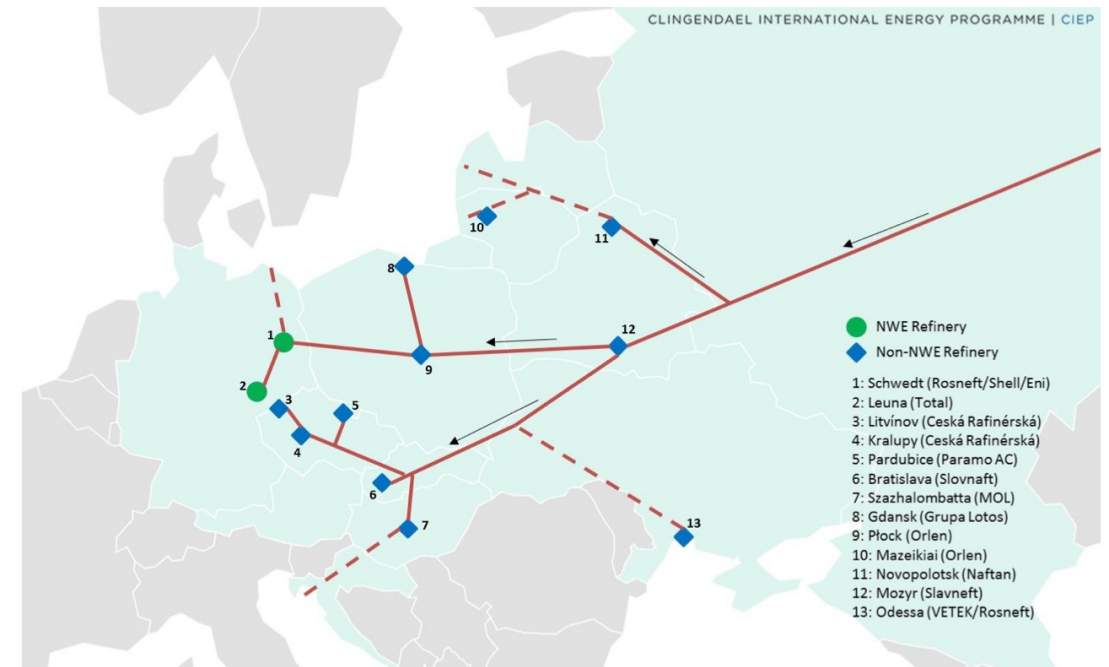
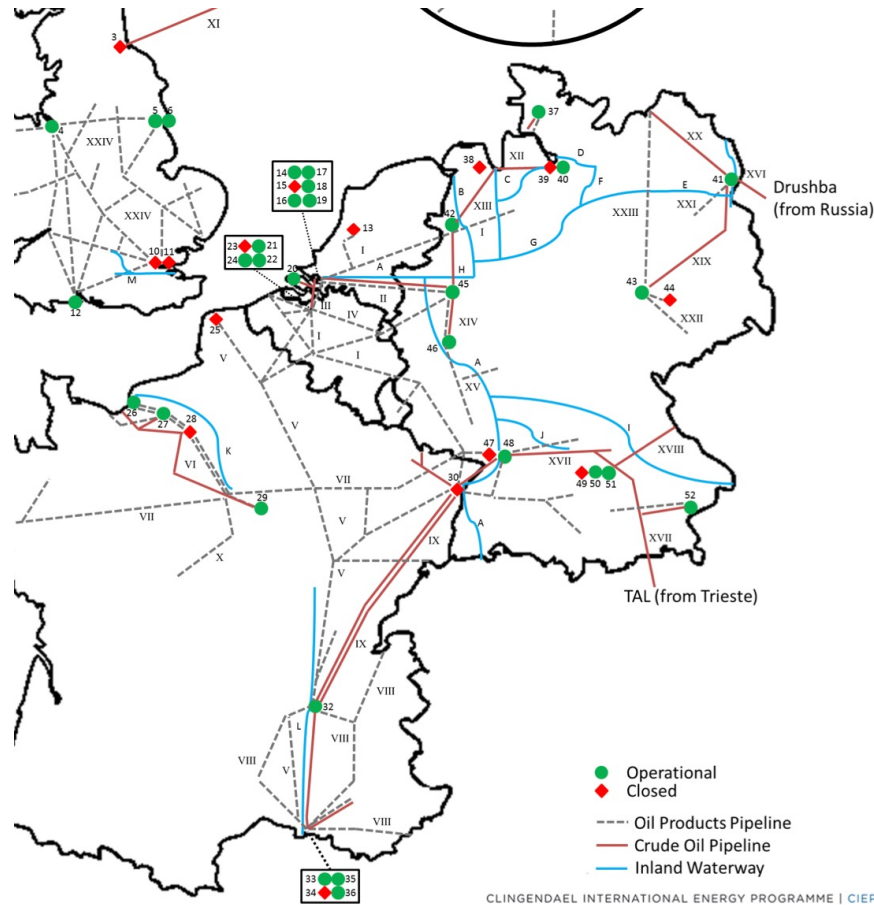


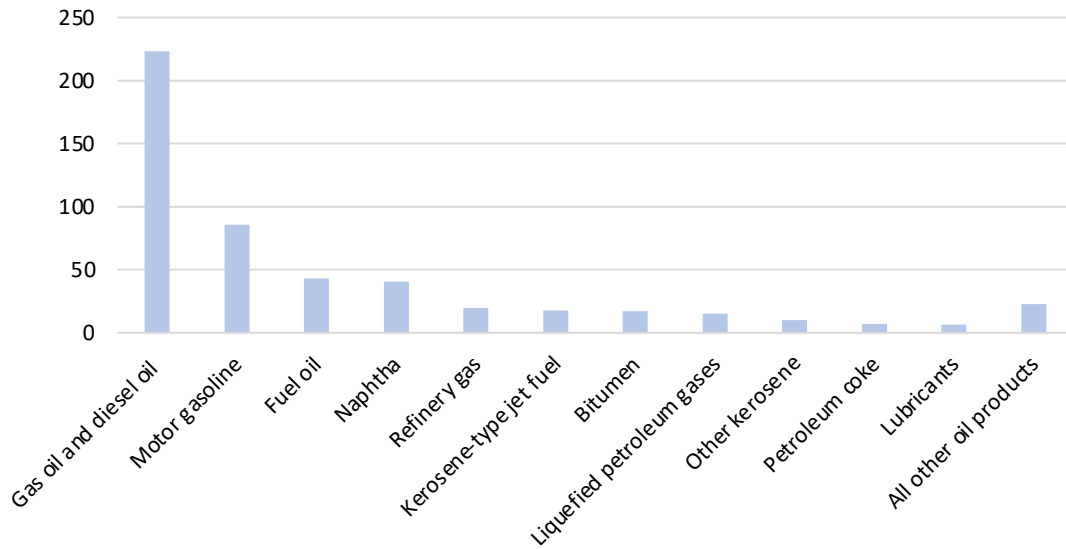
FIGURE 3.5: DANUBE PIPELINE SYSTEM

Production of Oil Products in EU

Q2 refinery maintenance season and further capacity rationalisations in EU ongoing

Production of petroleum products EU 2020

Million tonnes of oil equivalent

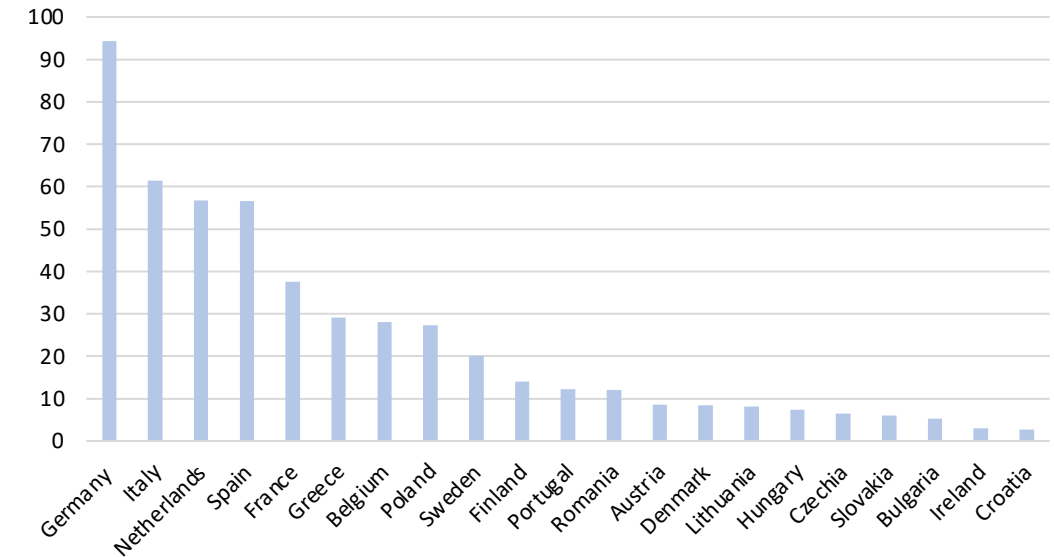


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Source: CIEP based on Eurostat data

Production of total petroleum products, EU member states, 2020

Million tonnes of oil equivalent



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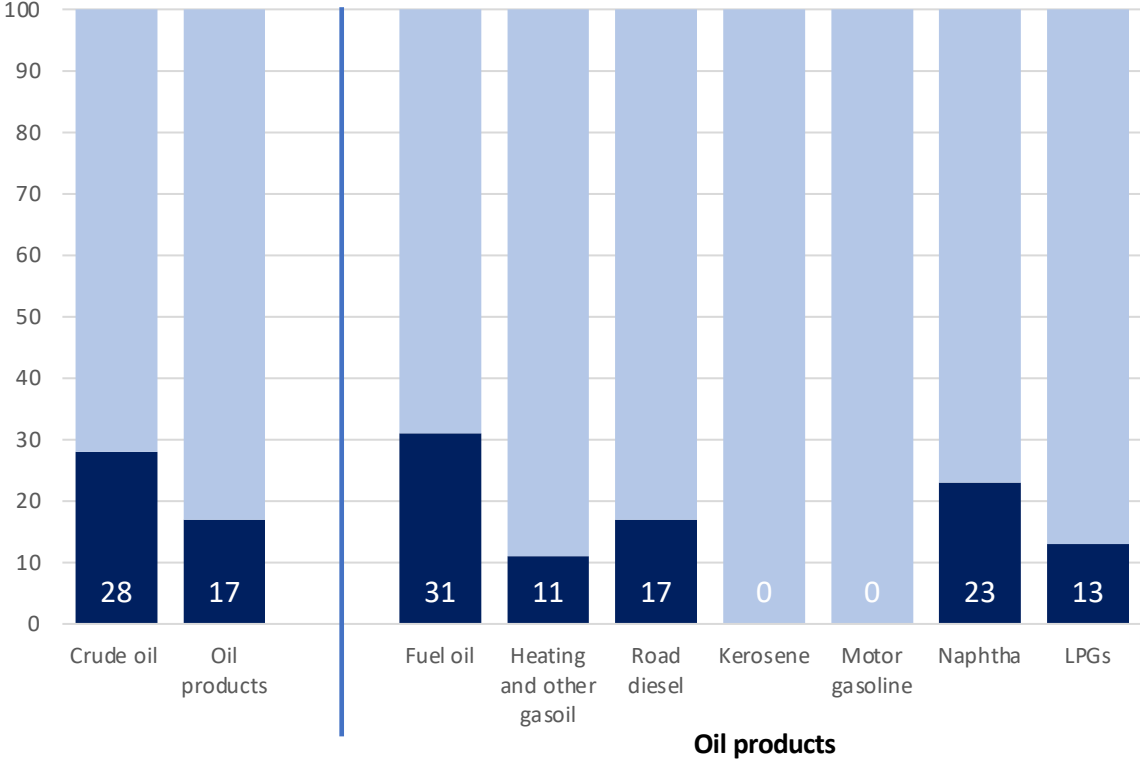
Note: the remaining member states currently do not produce petroleum products

Source: CIEP based on Eurostat data

Import dependency on Russia: Crude and Oil Products

EU27 Russian import share of total oil imports and demand, Nov 2021

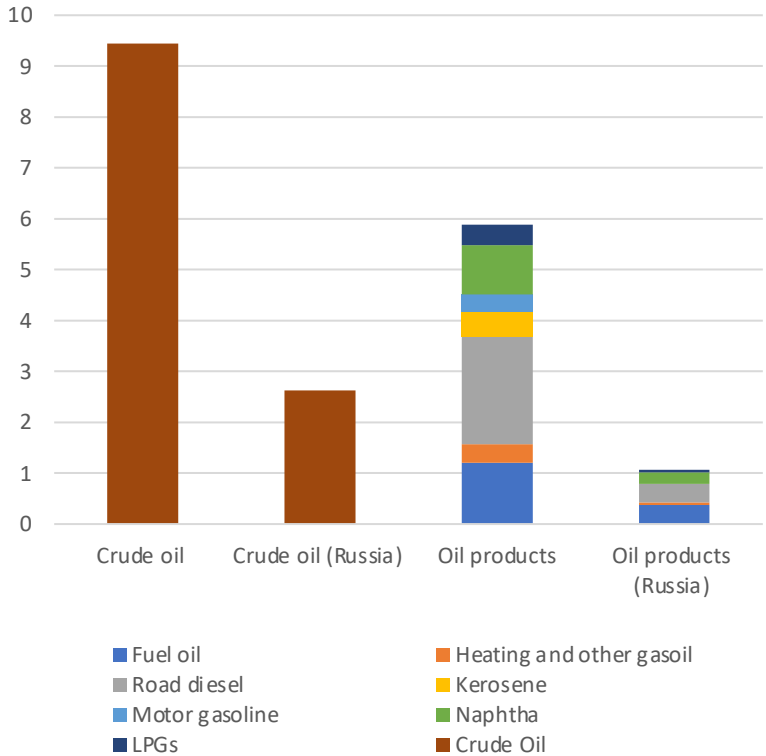
Percentage



■ Russian share ■ Remaining share

EU27 oil imports, Nov 2021

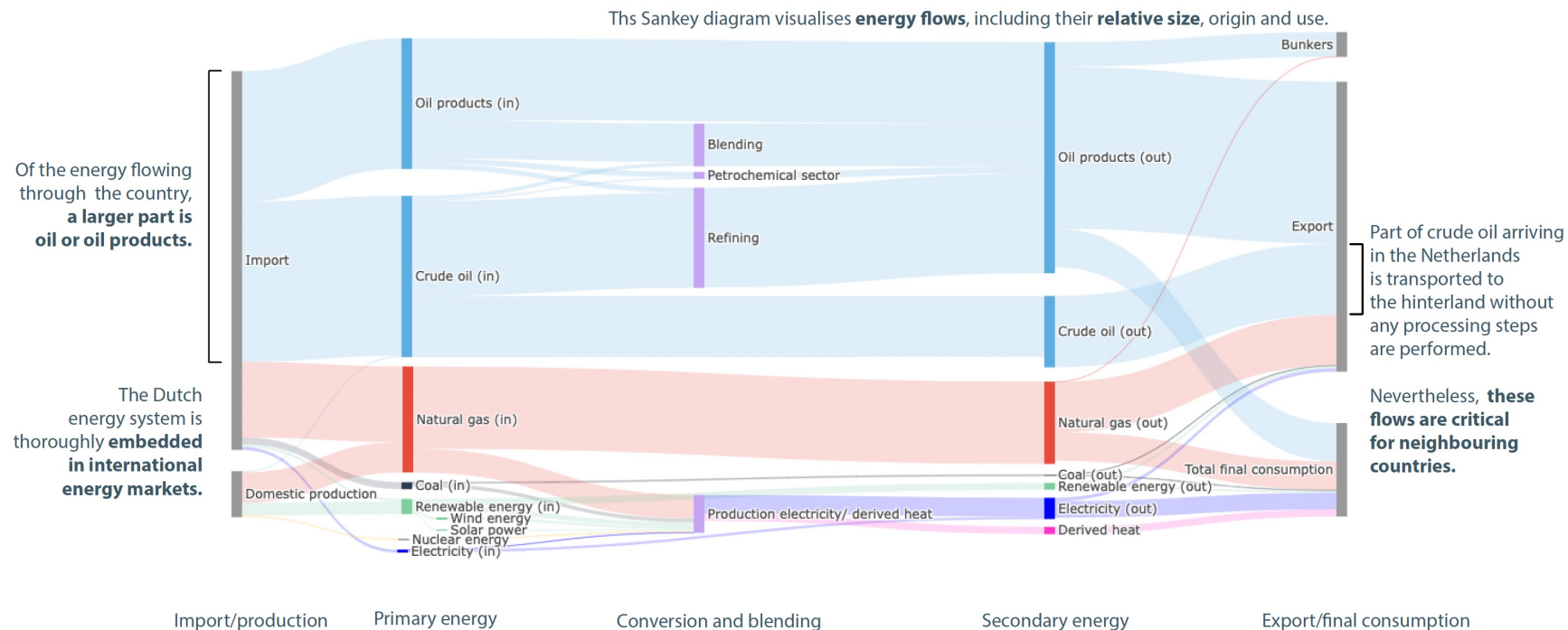
Million barrels per day



Source: CIEP based on Bruegel

Netherlands part of a large liquid fuel cluster (Amsterdam-Rotterdam-Antwerp-Rhein/Ruhr) with substantial flows of oil products to and from neighbouring countries and extra-EU exports

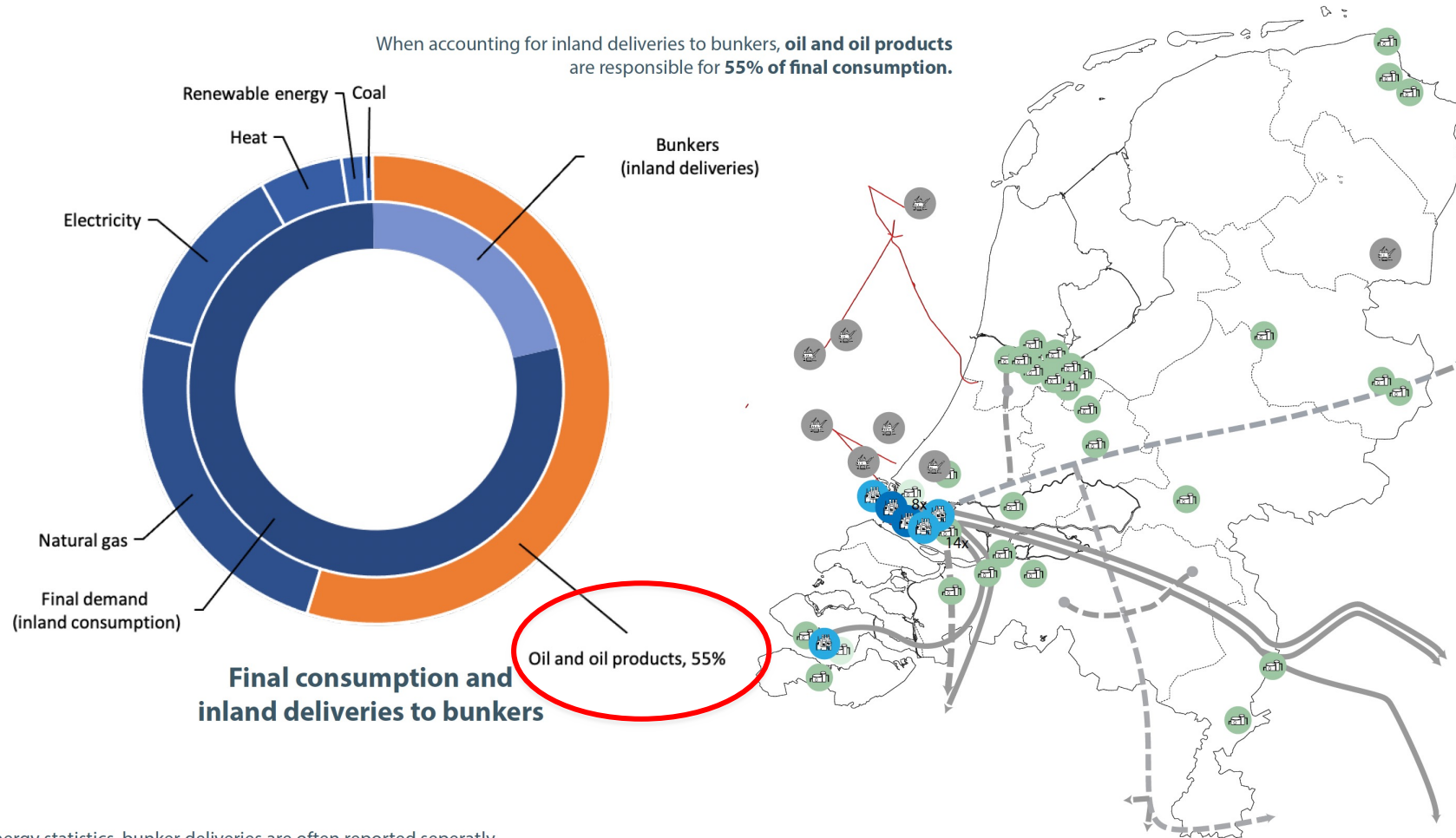
Energy flows through the country, oil and oil products provide a major part of our energy needs



By managing oil and oil products streams, **the Netherlands plays a critical role** in the Northwest European energy system.

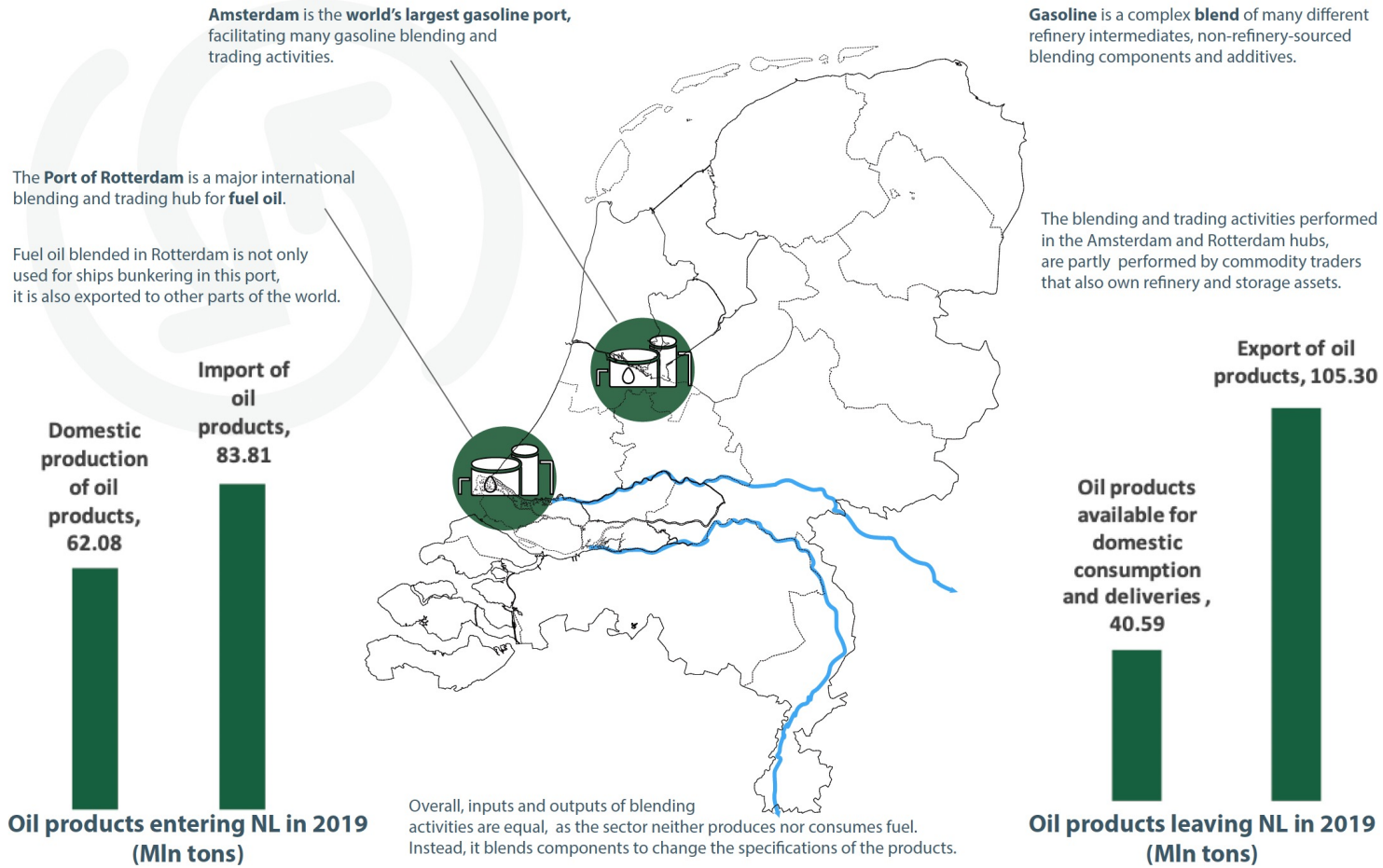
Oil constitutes a substantial share of Dutch final consumption and is both a fuel and feedstock

Oil and oil products **still provide a major part of our energy and feedstock needs**

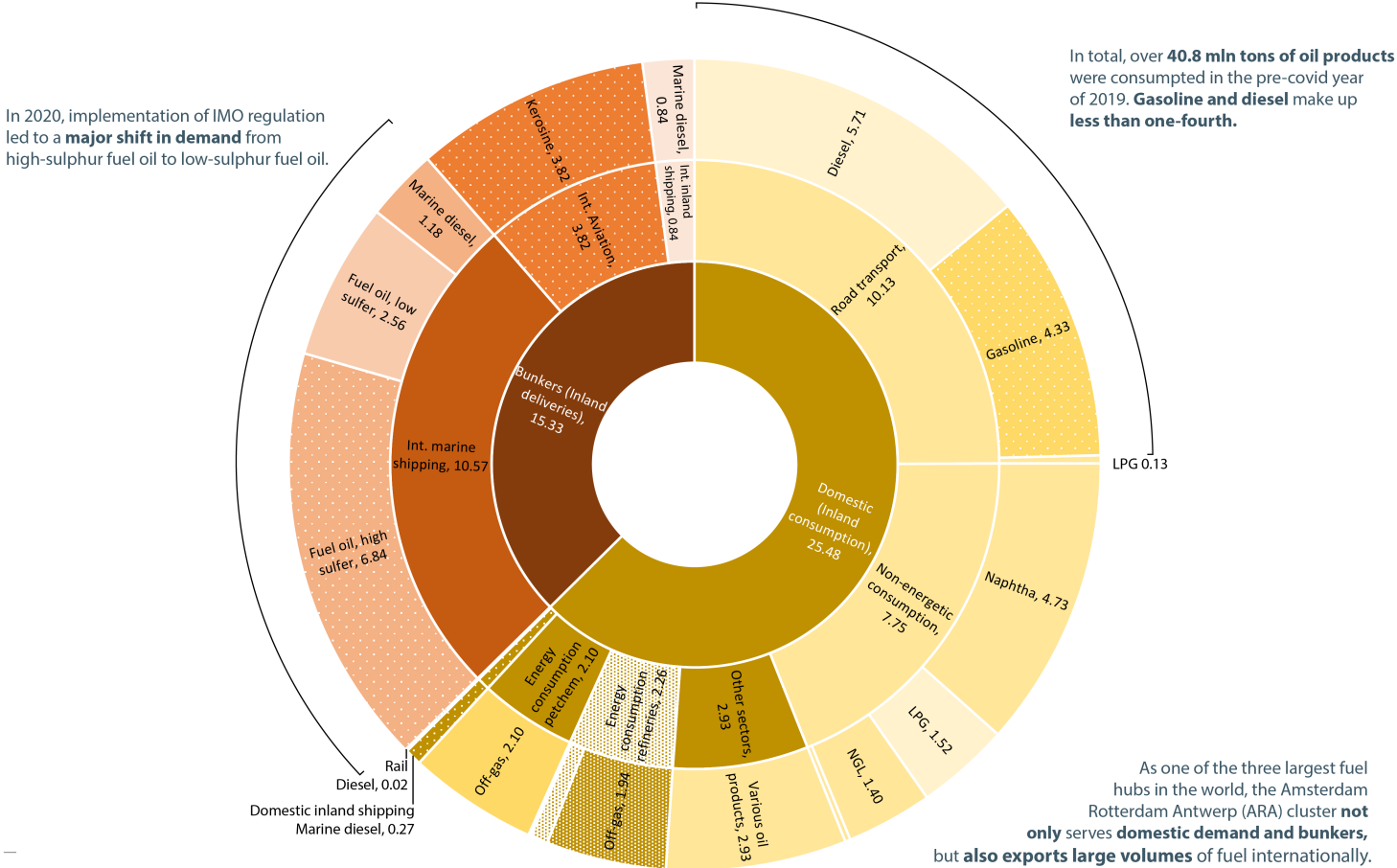


In energy statistics, bunker deliveries are often reported separately. These **inland deliveries** do, however, represent an **important physical stream** going to consumers in the **maritime** and **aviation** sectors.

Blending of oil products, using imported and refinery-sourced blending components



Dutch demand (including large share of bunkers) for Oil Products

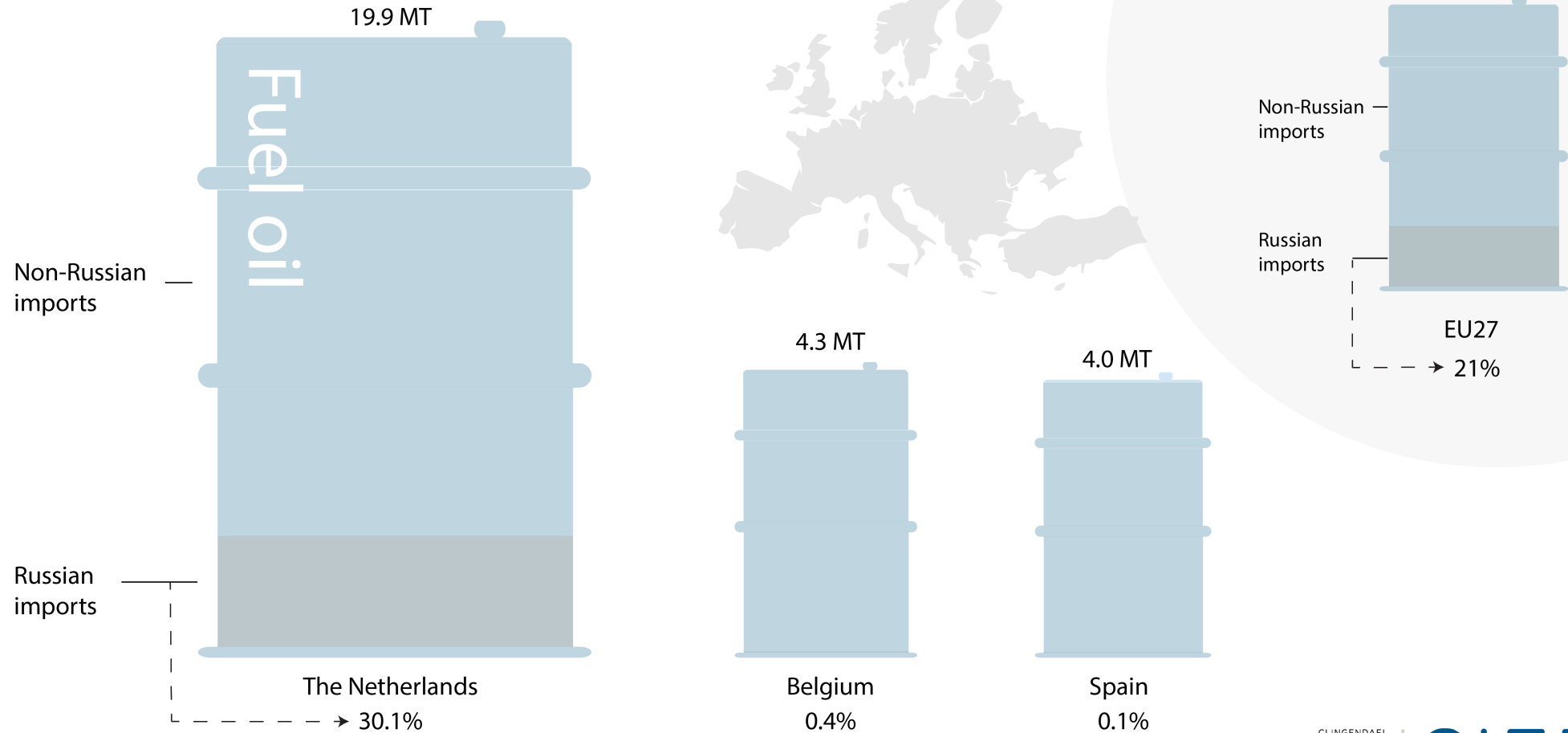


Domestic consumption and bunkers per energy carrier in 2019 [Mln tons]

THE NETHERLANDS ACCOUNTS FOR 46% OF ALL EU FUEL OIL IMPORTS

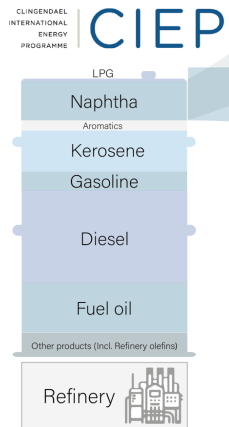
WITH 6.0 MT IT IS ALSO THE LARGEST IMPORTER OF RUSSIAN FUEL OIL

Fuel oil is heavy oil, mainly used for maritime shipping. At room temperature fuel oil is viscous and needs to be heated to make it liquid enough for use in an engine. In the Netherlands, fuel oil is not only imported (19.9 MT) but also produced (15.0 MT) and exported (18.5 MT). In 2020, 8.2 mt of low-sulphur fuel oil and 1.6 MT high-sulphur fuel oil was delivered to bunkers in the the Netherlands. In addition, 5.8 MT was transformed into other petroleum products.



CIEP analysis based on Eurostat (2022) Imports of oil and petroleum products by partner country for the year 2020 and CBS StatLine (2022) Crude and petroleum products balance sheet for the year 2020.

Naphtha for Fuel Blending and Gasoline Exports

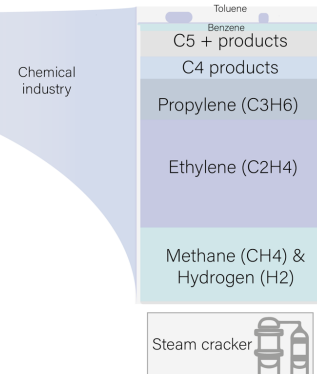


Fuel blending & export

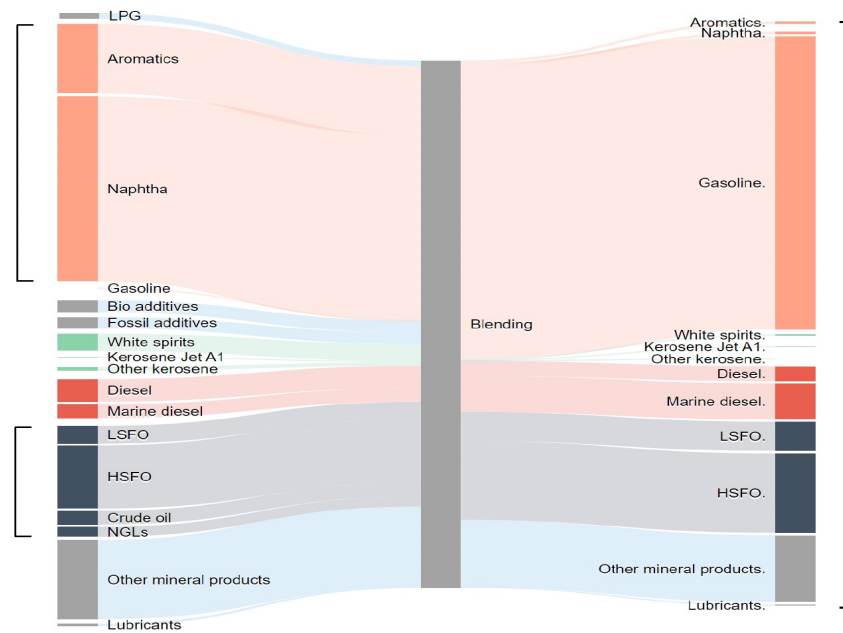
There is a **netto production** of (high and low sulfur) **fuel oil** in the blending subsector.

These fuels are mainly blended with **crude oil** and **natural gas liquids (NGLs)**.

Large volumes of **aromatics** and **naphtha** are blended into the **gasoline** pool.



This Sankey shows **blending inputs and products**:



Total blending activities in the Netherlands accumulated to **33.75 mln tons** in 2019.

For comparison, **domestic refining production** in 2019 accumulated to **62 mln tons** and the **total inland fuel demand** (incl. bunkers) sums up to **40,8 mln tons**.



THE NETHERLANDS ACCOUNTS FOR 50% OF ALL EU NAPHTHA IMPORTS

WITH 3.6 MT IT IS ALSO THE LARGEST IMPORTER OF RUSSIAN NAPHTHA

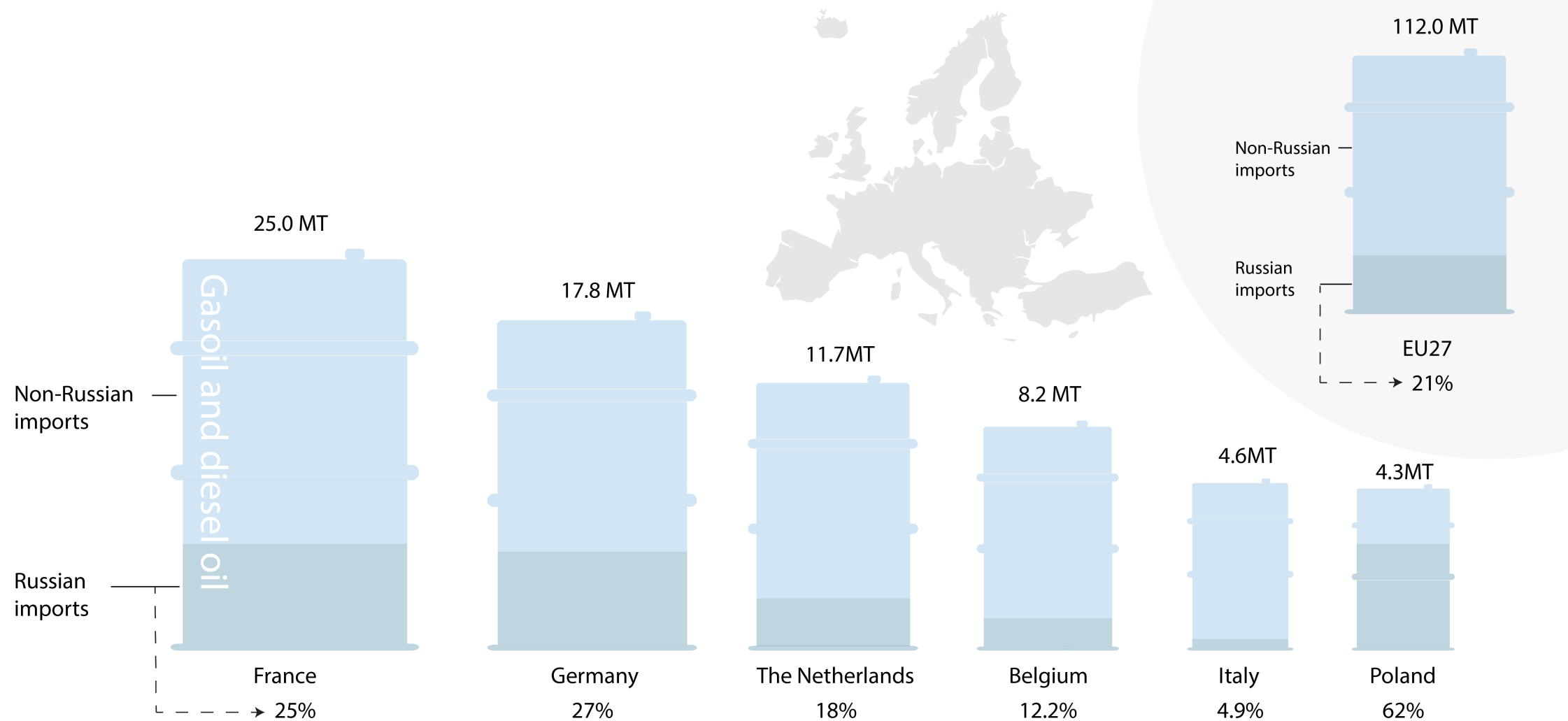
The blending sector is the biggest off-taker of naphtha (11.4 MT) in the Netherlands. In addition, naphtha is used as feedstock in the petrochemical sector (5.5 MT) and converted to energy products in both refineries and steam crackers (2.4 MT). Naphtha is not only imported (20.1 MT) but also produced (11.9 MT) and exported (12.6 MT).



CIEP analysis based on Eurostat (2022) Imports of oil and petroleum products by partner country for the year 2020 and CBS StatLine (2022) Crude and petroleum products balance sheet for the year 2020.

THE NETHERLANDS RANKS 3RD IN GASOIL AND DIESEL OIL IMPORTS

IN THE NETHERLANDS 18% OF IMPORTS OF GASOIL AND DIESEL OIL ARE FROM RUSSIA. IN POLAND THIS NUMBER IS 62%.



CIEP analysis based on Eurostat (2022) Imports of oil and petroleum products by partner country for the year 2020.

IEA recommended demand measures to ease impact of expected oil and oil product market tightness prior to discussions on further sanctions involving energy trade with Russia; situation could escalate to larger gap between EU demand and supply and may require additional policy measures

- IEA Oil market report March 2022:
 - “The prospect of large-scale disruptions to Russian oil production is threatening to create a global oil supply shock. We estimate that from April, 3 mb/d of Russian oil output could be shut in as sanctions take hold and buyers shun exports. “ and “OPEC+ is, for now, sticking to its agreement to increase supply by modest monthly amounts. Only Saudi Arabia and the UAE hold substantial spare capacity that could immediately help to offset a Russian shortfall.”
 - With the CPC-pipeline shut, another 1.2 mb/d is off the market in the coming weeks (April-May).
 - IEA 10-point plan Europe can reduce demand with 2.7mb/d
 - Use of strategic reserves an option
- The shortages in crude and certain oil products may require additional policy measures but the NW European energy intense industry and its clients remain exposed to supply shocks
- Recent CPB study also warned for indirect impact on various Dutch sectors.
- Dutch oil sector is deeply integrated in the NW European market, and impacts on Germany and Belgium (and other EU countries) will also impact the Netherlands.
- Concerns about demand destruction (recession) and an increase in energy poverty with both Russian gas, crude oil and oil product imports at stake in the context of tight international oil and gas markets in the coming years,
 - due to low investment levels in years preceding today
 - a reduction in openness international markets and
 - slower impact on supply-demand balance of speeding up energy transition plans

Demand Response: IEA calculated that demand response can deliver 2.7 mb/d in short term

A 10-Point Plan to Cut Oil Use

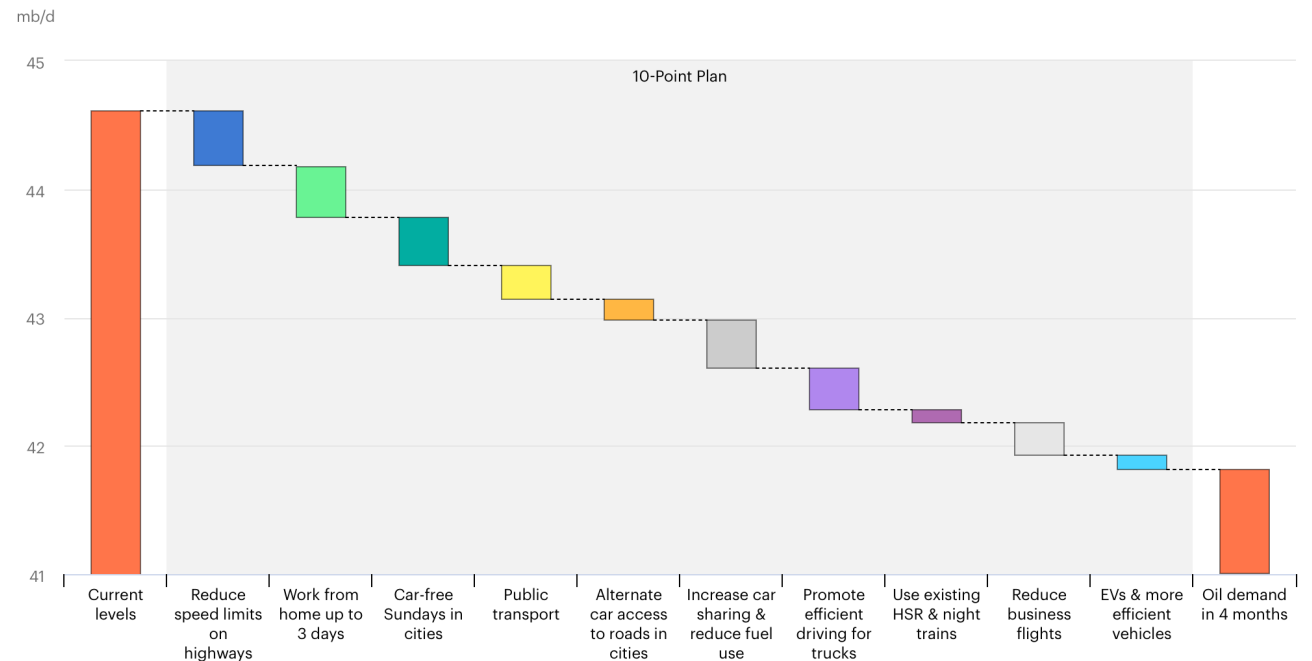


Immediate actions in advanced economies can cut oil demand by 2.7 million barrels a day in the next 4 months.

- | | |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>Action 1</p> <p> Reduce speed limits on highways by at least 10 km/h
Impact: Saves around 290 kb/d of oil use from cars, and an additional 140 kb/d from trucks.</p> | <p>Action 2</p> <p> Work from home up to three days a week where possible
Impact: One day a week saves around 170 kb/d; three days saves around 500 kb/d.</p> |
| <p>Action 3</p> <p> Car-free Sundays in cities
Impact: Every Sunday saves around 380 kb/d; one Sunday a month saves 95 kb/d.</p> | <p>Action 4</p> <p> Make the use of public transport cheaper and incentivise micro-mobility, walking and cycling
Impact: Saves around 330 kb/d.</p> |
| <p>Action 5</p> <p> Alternate private car access to roads in large cities
Impact: Saves around 210 kb/d.</p> | <p>Action 6</p> <p> Increase car sharing and adopt practices to reduce fuel use
Impact: Saves around 470 kb/d.</p> |
| <p>Action 7</p> <p> Promote efficient driving for freight trucks and delivery of goods
Impact: Saves around 320 kb/d.</p> | <p>Action 8</p> <p> Using high-speed and night trains instead of planes where possible
Impact: Saves around 40 kb/d.</p> |
| <p>Action 9</p> <p> Avoid business air travel where alternative options exist
Impact: Saves around 260 kb/d.</p> | <p>Action 10</p> <p> Reinforce the adoption of electric and more efficient vehicles
Impact: Saves around 100 kb/d.</p> |

iea.org

Oil demand reductions in advanced economies within four months in the 10-Point Plan



IEA. All Rig