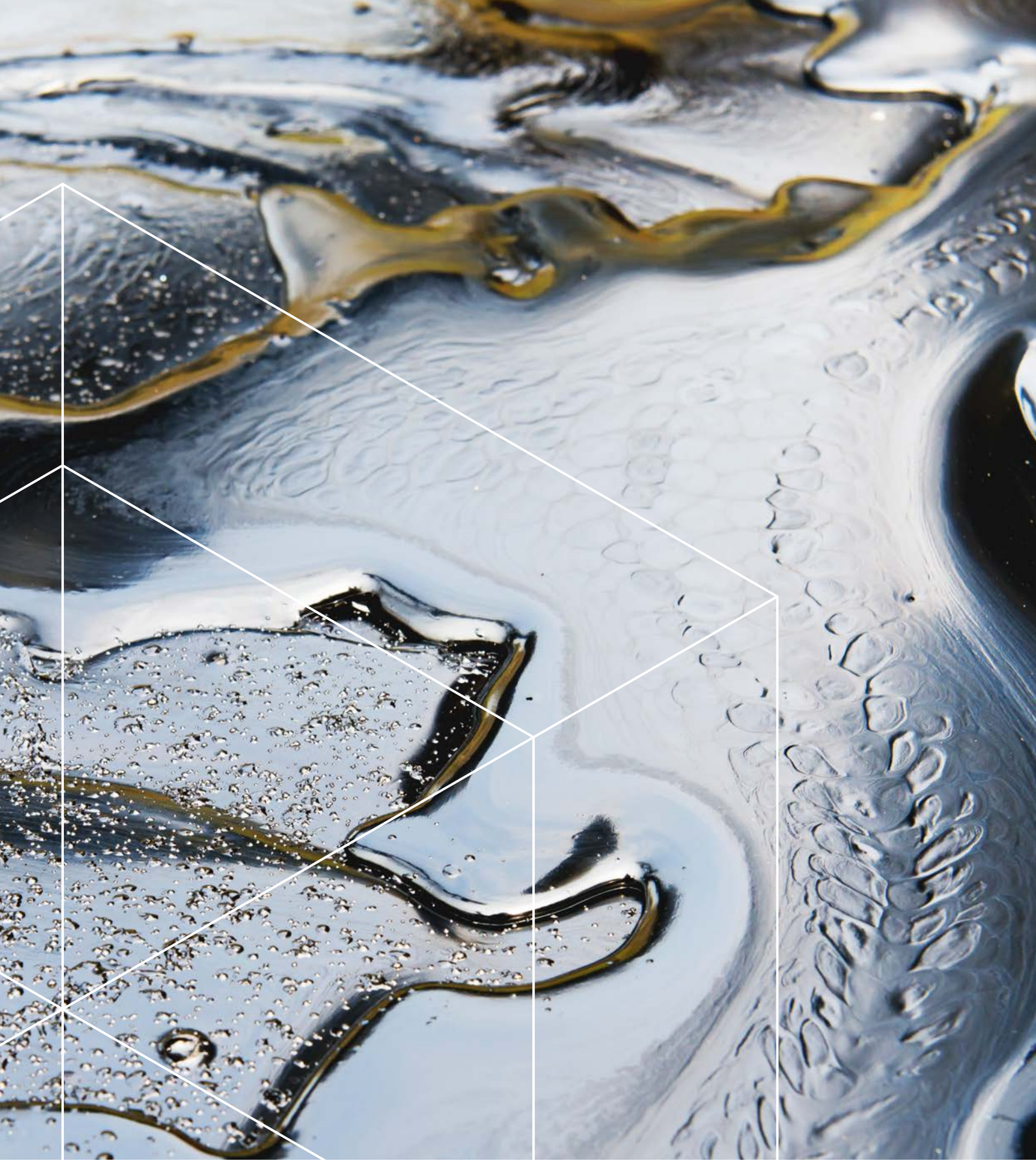

The rise and fall
of black gold

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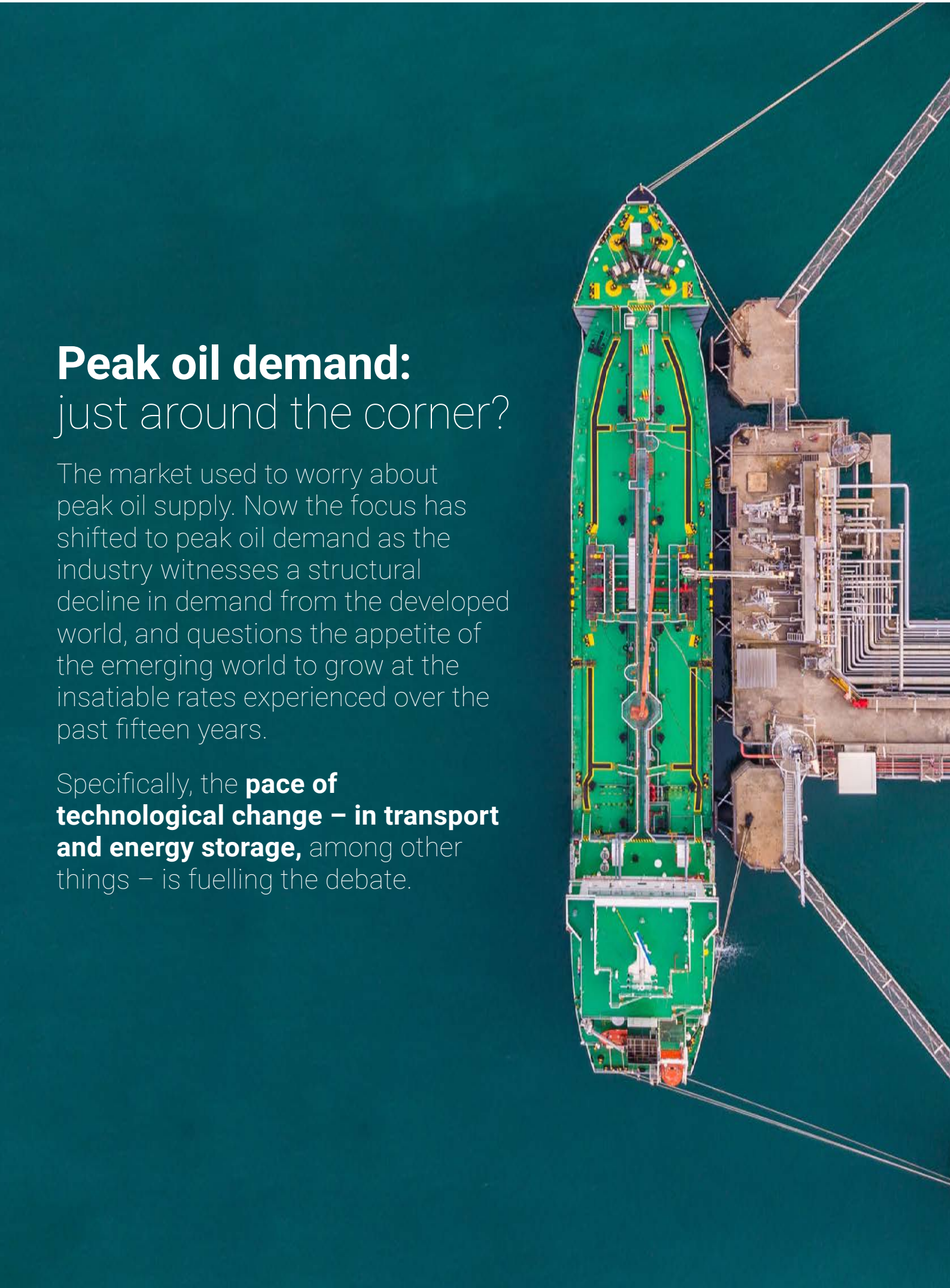


Peak oil demand: just around the corner?

The market used to worry about peak oil supply. Now the focus has shifted to peak oil demand as the industry witnesses a structural decline in demand from the developed world, and questions the appetite of the emerging world to grow at the insatiable rates experienced over the past fifteen years.

Specifically, the **pace of technological change – in transport and energy storage,** among other things – is fuelling the debate.

OECD demand will revert back to **structural decline by 2020,** wiping out more than

3 **million** b/d by **2035**

Non-OECD demand is expected to grow by nearly

16 **million** b/d by **2035**

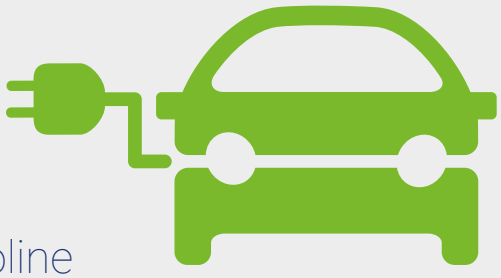
Oil demand has already peaked across much of the developed world, starting with Japan in 2000. This contrasts with the emerging world where oil demand continues to grow rapidly. OECD demand will revert back to structural decline by 2020, wiping out more than 3 million b/d by 2035. While low oil prices have supported a resurgence in OECD demand since 2014, this price effect is already fading and we expect it to reverse as oil prices rise into the 2020s. Notably, OECD demand is weighed down by a combination of government policy and auto technology which have already and will continue to push vehicle fuel efficiency improvements and drive fuel substitution. Together with slow or no growth in the working age population and a mature transport sector, we see OECD transport oil demand fall significantly through the 2020s.

In contrast non-OECD demand will continue to grow to 2035, driven by rising income levels and a growing middle class that boost the desire for mobility and the use of transport fuels. Demand for consumer goods, including plastics, and the need to move freight in an increasingly consumer-driven world will drive oil demand higher. However, government policy, auto technology, and demographics in some countries also play a role in non-OECD demand. While these factors may not lead to a drop in non-OECD demand, they do curb the pace of growth which is expected to decelerate through time. As in the OECD, this deceleration is mainly felt in the transport sector. Non-OECD demand is expected to grow by nearly 16 million barrels a day by 2035

Growth in transport stutters: gasoline is the weakest link

Of the 96 million barrels of oil consumed every day, almost 60 million are consumed in the transport sector. As technology advances - both in terms of the fuel efficiency of internal combustion engines (ICE), and the move to hybrid and electric technology – the transport sector will have the most impact on oil demand.

Post-**2025,** it's an **EV story,** as significant volumes of gasoline demand gets displaced



Global growth in transport stalls by 2030, with gasoline demand hit the hardest. On a global basis, gasoline demand peaks by 2030. It's a double whammy for gasoline: in the next decade it's a fuel efficiency story. Post-2025, it's an EV story, as the ramp up in electric vehicle penetration displaces significant volumes of gasoline demand. The impact of peak gasoline on overall oil demand into transport is tempered by increasing demand for road freight and air travel.

Did you know, nearly **60 million barrels of oil** are consumed in the transport sector each day?

Feedstocks are forecast to **add:**

6 **million** b/d by **2035**

growing from current demand by

50%

The petrochemical sector is one of the few bright spots for oil demand.

Petrochemical feedstocks make up just over 10% of total oil demand but we see significant growth over the next 20 years. Feedstocks are forecast to add 6 million barrels a day to total demand by 2035 – growing 50% from today's 12 million barrels a day. Feedstocks include naphtha, LPG, and notably ethane - considered 'oil' when consumed by petrochemical plants as a feedstock.

Demand from all other sectors account for the remaining 30% of total oil demand. A continued decline in oil used to generate power offsets modest increases from the other sectors, leaving demand in this combined category approximately flat through 2035.

To summarise, we do not foresee peak oil demand before 2035. But we do see a stall in demand growth in the transport sector, driven by peak gasoline demand by 2030.

Although oil demand grows to 2035 on aggregate, it is minimal compared with what we have seen over the past twenty years. **The prospect of peak oil demand is very real.**

Saudi Arabia's *Vision 2030* seeks to develop health care, tourism and defence

What does the prospect of **peak oil demand mean for oil producers and refiners?**

From an investment perspective, the possibility of peak oil demand could reduce upstream interest and investment in exploration. We have already seen a move away from high cost, high risk frontier plays where upfront costs are high – due to a lack of infrastructure. A focus on better understood basins and near field opportunities could persist as we continue to transition to a smaller, more efficient exploration industry. Investment in high-cost enhanced oil recovery projects, to maximise reserves recovery from late-life fields, could also be at risk.

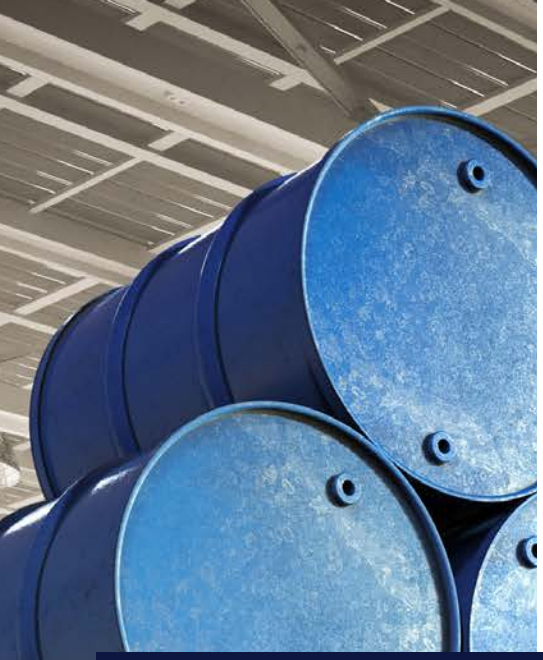
There are also supply-side implications from the rise of petrochemical demand versus the stall in transport demand. Liquids from natural gas production will become a key and growing feedstock for petrochemicals. Unlike oil, growth in gas supply remains relatively robust through 2035 and is a growing focus for upstream investment.

Turning to OPEC, neither revenues nor market share are likely to be significantly affected by slowing demand growth to 2035. This is because non-OPEC production plateaus late next decade and then declines to 2035. As a result, OPEC needs to increase its productive capacity to meet demand. Those OPEC producers with rising production can expect higher oil revenues next decade as their market share rises while the supply and demand balance tightens and prices increase.

However, OPEC producers cannot ignore the prospect of peak oil demand. They need to prepare for a future with less dependence on oil demand. As an organisation, OPEC does not currently have an explicit strategy to reduce its reliance on oil. But some OPEC nations have made this part of their domestic strategy such as Saudi Arabia through its *Vision 2030* which seeks to develop non-oil focused sectors of the economy such as health care, tourism, and defence.

Did you know that **non-OPEC supply will plateau** at 58 b/d by 2026?

In the downstream sector, our demand outlook poses a number of challenges to the refining sector. As demand for jet fuel (kerosene) and diesel fuel (gasoil) grows against a backdrop of declining gasoline demand, the refining sector reverts to being distillate-led. **This transition is further supported by the forthcoming marine fuel regulation** which mandates that the international shipping community use fuels with 0.5% sulphur or equivalent as of 2020 – down from today's mandate of 3.5%.

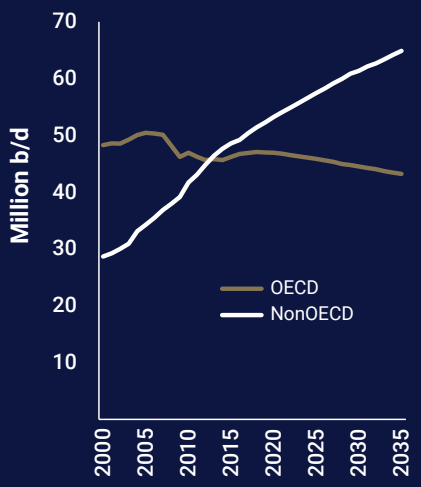


The forecast decline in gasoline demand provides an opportunity for the naphtha currently converted into gasoline components, to be used as petrochemical feedstock. However, the petrochemical sector typically targets the lowest cost feedstocks, which can be ethane or NGLs derived from gas processing facilities.

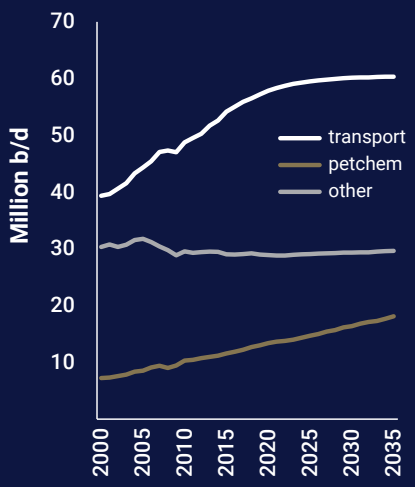
So we do not expect the petrochemical sector to be the **saviour of the oil market** and drive prices higher.

Global demand outlook

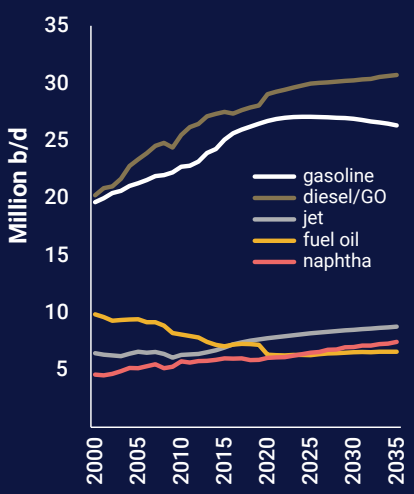
By location



By sector



By main product



Source: Wood Mackenzie Macro Oils Service

Specifically, the projected decline in gasoline demand in OECD countries poses a challenge to refiners in the Atlantic Basin since it requires coastal refiners to become competitive in distant export markets. As oil demand growth slows in the non-OECD, refining capacity additions required in Asia for the next twenty years are approximately half of that built in the last twenty years. The competitive nature of new facilities ensures they operate at high utilisations, requiring other assets to operate at lower levels. As a result, the pace of such capacity additions in non-OECD could raise the threat of closure to Atlantic Basin refiners.

So, **oil demand is not expected to peak** but it won't grow at the pace the industry has seen over the past 20 years. The oil industry is right to be concerned and should start to **plan for the future.**

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