

European refining: Renaissance or Indian summer?

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For European refining, 2015 was notable in that, after a pattern of regular closures over several years, there were no closures, and at the time of writing there have been none in 2016 either.

With lower crude prices since mid-2014, global demand has responded, in particular with stronger demand for gasoline, and there is much published data showing the improvement in refining margins worldwide and also in Europe, during 2015. Certainly, the annual results of several of the integrated international oil companies have shown the value of the vertically integrated business model, with the downstream sector in several cases delivering the lion's share in earnings.

A question we are regularly asked is "does this show a long-term shift in outlook for EU refining, towards a rosy future?" Our short answer is that we don't know, but that there are many reasons to be cautious. In summary, there are crude and energy market uncertainties, competing transport and fuel technologies, the evolution of global refining competition, new business models for refiners, the economic outlook for the EU and also the world economy, and last but by no means least, EU energy, climate and environmental policies. Taken together these create substantial challenges ahead.

With crude oil prices having fallen by over 50 per cent from highs in the 2008-2013 period, refined fuel costs for many customers globally have also fallen, but for road transport customers in Europe the fall in percentage terms has been much less, due to the high levels of taxation. This is one reason why we see that recent demand growth has been mostly outside of the EU, and therefore disproportionately benefitting non-EU refiners.

Gas prices in Europe have come down but so have those of the key competitor regions, the Middle East, the US, and Russia, meaning that their competitive advantage of lower energy costs is maintained. We have seen announced projects for several new large complex refineries in the Middle East, where such new capacity will likely be competitive in importing into Europe, being able to benefit from the lower gas prices and also exemption from most European regulatory costs, therefore probably putting additional competitive pressure on EU refiners when they come on stream.

We are also seeing in several locations, refineries being acquired and operated by companies with a different business model, such as airlines or trading houses. In the recent past these refineries might have been expected to close, but so far,

their new owners clearly see viability in continued operation. Last but not least, Europe has some of the most ambitious energy, climate and environment policies in the world, for refineries manufacturing fuels, but also for vehicles emitting CO₂, and pollutants affecting air quality.

This is likely to have a substantial effect on demand for liquid fuels over the long term, as shown by energy outlook publications of some of the major oil companies. For the European fuels market, vehicle regulation is arguably now the key long-term determinant of both the overall demand for petroleum fuels, and the mix of grades. It is for this reason that FuelsEurope is advocating strongly for future vehicle policy to be technology neutral, to pursue the most cost-effective policies, and also to have a linkage with fuel regulation.

Carmakers have been under pressure for some years now to develop strategies to reduce CO₂ emissions from their cars to meet a fleet-average standard, currently, and up to 2020, of 130 grams of CO₂ per kilometre (CO₂/km). Their short-term challenge is to be ready to meet a standard of 95g CO₂/km from 2021, and reportedly at the time of writing, a very challenging fleet average in the range of 68-72 g CO₂/km from 2025 or 2030. Clearly such reductions will bring proportional reductions in fuel consumption from the light vehicle fleet. In addition to this, there is now growing political momentum for electrification mandates in certain countries, in particular the Netherlands and Norway. Furthermore, there is growing support in some cities for severe restrictions on the use of Internal combustion engine vehicles, with a vision for electric-only vehicles within a decade.

The electrification vision

The vision for electrification of light transport is increasingly clear — and despite current low sales numbers, and challenging economics (when large subsidies and incentives are discounted), the refining and fuels industry in Europe takes this possibility very seriously. Technology will have to progress a lot before this is a cost-effective route to emission reduction. However, we do need to recognise that electrification will gradually become more competitive, will likely continue to receive strong support, and will play a significant role in transport in future.

It is a sobering exercise to consider what widespread electrification could look like by, say, 2050. Light transport could in theory be fully electrified, even though the costs of the transition, in terms of years of incentives, and also the building of millions of charging points and relevant infrastructures,



would be huge. This could mean the loss of much of gasoline demand and perhaps one third of diesel demand. Clearly the future of refining in Europe would be very challenging with even further reduced gasoline demand.

As the industry association representing Europe's refining and marketing industry, we have fully recognised climate change as a global challenge, and also recognise the air quality problems in our cities. Now, more than ever, we believe that we have to promote the most responsible use of petroleum. This means that we should support achievable standards for efficiency in cars, and for full compliance with air quality emission standards.

We can also see that the current technologies for replacing petroleum in transport (to meet climate objectives) are amongst the most expensive of all options available in any field. We also see that many sectors of transport have no practical option but liquid fuels. But it seems unwise to sit back and expect today's fuels to be suitable forever. We must think and prepare for the longer term by finding ways to reduce the carbon intensity of liquid fuels. We should seriously consider all technologies that can reduce the life-cycle GHG intensity of liquid fuels, from advanced biofuels, to use of green hydrogen and green power, carbon capture and storage, and power-to-liquids. Where these can be cost-effective, competitive routes to lower GHG emissions, we should find ways to implement them. But we will also need long term policy stability that enables business to make such business investments.

We should also be pressing for carbon price convergence in the longer term to make sure Europe's costs for reaching its climate targets are kept to a minimum, enabling society to always pursue the lowest cost options whatever the sector, and in a technology-neutral way.

The other big driver for change in road transport is the failure of many EU cities to meet urban air quality standards, and also the responses from regulators and industry to the diesel emissions scandal. This has intensified the calls for electrification, and has also caused carmakers to reconsider the balance in their own sales between gasoline and diesel powered vehicles. In the wake of the emissions scandal and also the introduction of the latest standards, the costs for emissions compliance have risen for a diesel compared with a gasoline car. For small cars this will be significant and will likely cause customers to prefer gasoline over diesel once again. This means there is a real prospect of the gasoline-diesel demand imbalance shifting partly back towards more demand for gasoline over the coming 10 years or more.

The diesel emissions scandal has heightened concerns of city mayors about city air quality, and encouraged calls for full electrification of cities. However we believe these calls are premature and that there are alternative solutions. A recent report by our research affiliate CONCAWE (Conservation of Clear Air and Water in Europe), based on detailed expert modelling of fleet emissions and urban air quality, shows that vehicle fleet turnover, specifically toward the latest technology Euro 6 vehicles, will over the next 15 years bring major improvements in compliance with air quality standards, with outcomes little different from that which could be achieved with full electrification of the vehicle fleet. This shows clearly that air quality standards can be met whilst continuing the responsible use of petroleum-based road transport fuels.

So what are the implications for investment from these environmental pressures? Our industry has shown time and again that it can deliver innovation and implement new technologies. But the scale of today's environmental challenges are great, and we will need a clear view of the policy framework for many years, perhaps decades, to be able to justify the large investments that may be expected to meet these environmental pressures.

Complete mix of opportunities and threats

So, to summarise, and to answer the question posed in the title: Renaissance or Indian summer? 2015 may have been a good year for global margins but there are too many challenges to competitiveness and to the outlook for demand to describe this as a "renaissance" for Europe's refiners. To meet the challenge, the European industry will need to continue its efforts to remain competitive, as the capability to supply from outside of Europe grows. It will need to continue to advocate for fair treatment in policy, and also to continue to promote and practice the most responsible use of petroleum. But most important of all, it must also consider how it can step up to the challenge of meeting societal and policy expectations in the path to lower-carbon transport, and a lower carbon economy. In doing so we must all be realistic that this path is a complex mix of opportunities, and threats. 'Indian summer' may not be the most accurate characterisation after all, as 2015 is now behind us, and the road ahead is certainly tough. But with innovation in technology, careful investments and a constructive engagement with policymakers, Europe's refining and fuels industry can surely carve a path to continue to supply Europe's liquid fuel needs for many decades ahead.