Oil Market Report: September 2020

The start of September was marked by some (albeit limited) debate in the UK around the safety and overall reasoning behind transporting large amounts of fuel by rail across the country. This followed the spectacular derailment and subsequent fire on a train carrying diesel from Wales (Milford Haven) to England (Theale). In the incident, 3 fully loaded rail cars (each carrying around 75,000 litres of diesel) were ruptured, causing a major fire that thankfully resulted in no casualties (and limited environmental damage) - but nonetheless, resulted in the evacuation of over 100 houses within a 1km radius of the crash site.

To many non-industry observers, the fact that oil products are transported by rail at all, came as something of a surprise. The train that derailed was made up of 25 rail cars, carrying a total volume of 1,875,000 litres. That's a great deal of diesel and who would have thought that a similar train takes the same route 2-3 times a day, to supply the rail-fed oil terminals of Westerleigh (for the supply of fuel into Bristol) and Theale (for Reading / West London).

"Primary transportation" is the term used in the industry to describe the movement of oil that does not involve road transport (which is referred to as "Secondary Transportation"). When oil consumption is close to refineries or coastal import locations (such as the Thames estuary), then road transport (delivery by petrol tankers) is sufficient, because customers are close by and journey times short. However, when demand is inland and many miles from refineries or import locations, then it is far more efficient to send that product by one of the 3 forms of primary transportation; rail, pipe or barge.

In the UK, pipeline freight is the dominant form of primary transport (more of that next month!), but the rail industry's contribution to oil transportation is also pretty impressive. On average 9m tonnes of refined oil is transported across the UK per annum. That's about 30m litres per day, with the main routes being the aforementioned supply-chain from Wales into South-West and Southern England, alongside the feeding of the Kingsbury (Birmingham) and Jarrow (Newcastle / Sunderland) depots from Immingham. Finally, Dalston (Carlisle) Oil Terminal is rail-fed from the Grangemouth Refinery in Scotland, whilst Jet Fuel is supplied to Heathrow via rail from import terminals on the Thames.

There is understandable concern around the risks of such large volumes of fuel being transported above ground in the UK. However, the fact remains that rail transport is considerably more environmentally friendly than truck movements. The current daily rail throughput of 30m litres is delivered via a handful of diesel traction engines (no electric on freight routes), whereas moving the equivalent volume by truck would mean circa 825 individual petrol tanker movements. Furthermore, tanker drivers are (rightfully) limited to 11 hour shifts, meaning that a 4.5 hour outward journey is the furthest a driver can go before discharging, taking a break and driving back. In those circumstances, rail transportation for distances beyond 5 hours makes considerably more sense and is invariably more economic. Rail freight rates in the UK sit around the £5-10 per tonne mark (around 0.60 pence per litre), which when you consider the hardware and hazards involved, is remarkable value. It means that in the case of the train that recently derailed in Wales, the cost to the fuel seller of moving the cargo was only around £11,500. That is until the 3 rail cars came off the track and 225,000 litres of diesel went up in flames. That would have cost the shipper more in the region of £200K and that's just for the product...

Looking across to mainland Europe, oil rail freight is on a much grander scale, as the great rail hubs of North-West Europe act as conduits for oil transportation into the continental hinterland. In Germany alone, 41m tonnes (50bn litres) of oil products travel through the country by rail - a volume 5 times that of the UK rail equivalent. Across the pond, everything is even bigger still (of course!) when it comes to North American rail freight. Last year, 125m tonnes of oil (circa 150bn litres) was transported by rail in the US - mostly shale oil, that without ready access to pipelines, has to rely on rail cars to get their product to Gulf Coast refineries. And north of the border, Canada was setting its own records, when in January of this year (pre-Covid of course), more oil (400,000 barrels per day ~ 50,000 tonnes / 60m litres) was transported by rail than at any point in Canadian transport history.

Primary transportation by rail remains one of the most commercially effective and environmentally friendly ways of shifting mass volumes across large distances. Because it involves the movement of large and concentrated volumes of flammable liquid, it does make the risk of large-scale accidents a reality – as we saw in Wales last month and more catastrophically in Quebec (Lac Megantic) in 2013. But the desire not to move product by road, is at the hub of why primary transportation exists in the first place. Far better that the supply of oil is made up of (relatively) limited transport movements, compared to multiple smaller traffic journeys, which would compound road congestion, pollution and the potential for even more accidents. Rail is only one part of the primary transportation jigsaw though, so next month we will look at the rock and roll world of pipelines – it doesn't get any more exciting than that!