

# Oil Market Report: October 2020

Last month we looked at the movement of petroleum products by rail, one of three types of “primary” transportation that exist in the oil industry. Next month we’ll look at barges, but today our focus will be pipelines, so fasten your seatbelts and get ready to learn about 12” lines, 50 mile “parcels” and why squealing pigs play a key role in keeping the oil flowing...

Long distance oil pipelines were virtually non-existent prior to 1945, with truck, rail and barge transportation being the preferred methods of bulk movement over long distances. However, the experiences of the Second World War highlighted the risks of transporting fuel above ground (targets for bombing raids) and as a result, the 1950’s and 60’s saw the rapid development of an intricate oil pipeline network across Europe, that linked refining hubs to the major conurbations of the continent.

In the UK we currently have almost 5,000 km of operating oil pipelines, transporting over 30m tonnes per annum (circa 36bn litres) - a figure almost 3.5 times the volume that is carried by UK rail. In Scotland, the Finnart line from Grangemouth Refinery travels to the hidden Ocean Terminal in Loch Long (surely the most picturesque oil facility on earth!), from where sea tankers are loaded to supply over 80% of Northern Ireland’s oil demand. South of the border, the UKOP line (United Kingdom Oil Pipeline) makes up the mainstay of pipeline activity and this 12” diameter pipeline follows the route of the M25 – M1 – M6, to link the Thames and Mersey estuaries to London and Birmingham.

From the south, (Thames import locations), the UKOP line runs up to Kingsbury (near Birmingham) via Hemel Hempstead (North-West London), whilst in the North-West (Mersey refinery), the line travels south also to Kingsbury and then on to Hemel Hempstead. So next time you are driving on the M1 or M6, you can comfort yourself in the knowledge, that somewhere very nearby, is a pipeline slowly pumping its 5- 6m litre “parcel” of diesel or petrol to its destination. And such is the geometric nature of a 12” diameter tube, the parcel of fuel in question will be taking up approximately 50 miles of pipeline!

Unsurprisingly, post-war pipeline construction was not only confined to British shores and all the major European nations constructed huge and complex pipeline networks. The mighty Dutch-German Rhein-Main-Rohrleitungstransportgesellschaft (RMR for short, but spelt out in full, simply for the wonderment of how many letters the German language can agglomerate to make one single word) pumps a whopping 40m litres per day into the highly populated North-Rhine Westphalia and Hesse regions. Total German oil pipeline volume is over 100m tonnes / 120bn litres per annum (over 3 times that of the UK), although much of this volume is crude oil supplying inland German refineries. In France, the largest capacity line is the Le Havre - Paris ring (32m litres per day), which transports oil from France’s biggest refinery to strategically located terminals that encircle the capital. In the south, the Pipeline Mediterranee / Rhone (30m litres per day) does the same for the Southern French city of Lyon (plus Geneva), whilst the cross-border, 5,600km CEPS line (Central European Pipeline System) interconnects oil terminals in France, Luxembourg, Belgium, Holland and Germany.

The benefits of pipeline transportation are myriad and put other forms of primary transportation into the shade when it comes to environmental and cost benefits. In the UK, oil pipelines transport the equivalent of 1m road journeys per annum, therefore having a hugely positive effect on both CO2 emissions and local air quality. In addition, the energy required to pump fuel in pipelines is limited, as the capillary action of liquids means momentum is maintained with minimal energy inputs. This in turn, positively affects the cost, which is a fraction of that associated with other forms of transport. UK pipeline freight comes in at less than £1 per tonne versus £6 per tonne for rail and £10 per tonne for road transport. Finally, product spillage on long distance European pipelines is extremely rare, whilst at the same time, the nature of an underground pipe means that there are few aesthetic objections and instead, plentiful vegetation and arboreal cover. In fact, there is only one real problem with pipelines and that is that they cost one heck of a lot of money to build in the first place...

And what about those squealing pigs? How do they fit into all this? Well, in order to clean the inside of a pipeline and to clear it of rust and product residue, a cylindrical creation coated on the outside with metal brushes (and with a diameter that is fractionally smaller than the diameter of the pipe) is stuffed up the line and sent all the way along from start to finish - moving with the product flow and cleaning as it goes. Some people will have you know that this piece of kit is called a “Pipeline Inspection Gauge” (PIG), but Portland knows better because he was let in on the secret many years ago by a Texas oil-man named “Big Stan”. According to (Big) Stan, the reason pipeline pigs were called pigs was obvious to anyone who was present when the instrument was stuffed up the line; the noise the metal bristles made on the inside of the pipe was reminiscent of that of a squealing pig..