TAR SANDS: COMING TO A REFINERY NEAR YOU?

BACKGROUND

Found in several countries but almost exclusively produced in Canada and Venezuela, tar sands fuel is one of the world's dirtiest. Its extraction and production involves the expenditure of large amounts of energy and creates huge amounts of greenhouse gas emissions, compared to conventional oil. The vast tar sands reserves combined with these high emissions and the rapid growth of their exploitation make them a severe and imminent threat to the climate. Now they are coming to Europe.

May 2014 saw the first ever shipment of Canadian tar sands crude to reach Europe, with a shipment to a Repsol refinery in Bilbao. Other shipments have followed, with some known to have reached Italy, Switzerland and Spain[i]. These shipments arrived in Europe while Europe's fuel quality law, the Fuel Quality Directive, was being debated and ultimately weakened – following several years of lobbying by Canada, the US and the oil industry to prevent an ambitious implementation of this climate law. If it had been robustly implemented, the FQD would have helped keep tar sands out of the EU.

According to a study carried out by the Natural Resources Defense Council (NRDC) these shipments could be the initial steps of a flood of tar sands oil to cross the Atlantic with as much as 700,000 barrels a day reaching Europe by 2020. However, the study did not outline which refineries would or could refine this oil. That's why Friends of the Earth Europe and Transport & Environment commissioned this research to assess which of the 95 refineries located in the EU, Switzerland and Norway are capable of taking tar sands.

METHODOLOGY

- *The different forms that tar sands can take*

The report identifies which European refineries are capable of refining tar sands oil in two different forms: Synthetic Crude Oil (SCO), labelled as "pre-processed" on the map; or diluted bitumen (dilbit), labelled as "heavy crude". When extracted, tar sands bitumen cannot be transported by pipelines in its original form, because it is too heavy and viscous. So it needs to be either partially processed on site or diluted to enable its transportation and arrival on the market. This leads to different forms of tar sands being made available, among which the two most common are:

Heavy tar sands crude – Dilbit: It is a heavy crude oil, which is produced by diluting raw bitumen. Even with the dilution, dilbit can only be processed in refineries that can handle heavy crudes.

Pre-processed tar sands crude – SCO: When raw bitumen is extracted and then partially processed it creates SCO, which is a light crude oil, quite similar to light conventional crude oil. SCO also describes the output of the processing of oil shale (or kerogen shale).

- *The map focuses on both dilbit and SCO*

Heavy crude (Dilbit) is forecast to make up the greater proportion of any tar sands production increases in the coming years, so it can be considered the major threat in terms of imports of tar sands to Europe. But pre-processed crude (SCO) could also be exported to Europe, even if it is likely to be in smaller quantities. That is why the map highlights the capacity of EU refineries to process both forms of tar sands. All the refineries that can process the heavy tar sands crudes can also refine SCO, except one refinery in Switzerland.

- *The risk of delivery*

The risk of delivery has been assessed based on the refineries' locations in Europe, which determines their access (direct or indirect) to water-borne crude oil supply, and the current state of play of tar sands production worldwide. Currently, as Venezuela and Canada are the biggest producers of tar sands worldwide, tar sands shipments are expected to come from these two countries. This explains why the risk of shipment is generally greater around the western part of Europe. But tar sands deposits are also located in other countries such as Russia, Kazakhstan, Madagascar and the United States. In the future, the EU could also see exports of tar sands crudes from these countries and the map would need to be updated to reflect these changes.

- *Tar sands in transport fuels we already import*

The report only covers imports of *crude oil to be refined* in Europe but Europe also imports *refined petroleum products* from North America. The content of these products and whether they include tar sands oil is not known to the public or European regulators. The FQD has failed to ensure that European fuel importers report on what their refined oil is made of and assess the climate impacts of these refined products.

MAIN FINDINGS

18 refineries located in Belgium, Spain, Italy, the Netherlands, Germany, Norway, Switzerland and the UK have the highest risk of tar sands deliveries.

Heavy crude (Dilbit) is expected to account for the greater share of the increased tar sands production in the coming years, and shipments that have already arrived in the EU have mainly been diluted bitumen – Western Canadian Select (WCS). These 18 refineries are best located to take deliveries of these shipments of heavy tar sands crudes.

Furthermore, out of the 95 refineries included in the study, another 11 located in six other countries are capable of refining this heavy crude – meaning around 30% of refineries are capable of refining heavy tar sands crude. A higher portion of EU refineries can process tar sands in the form of SCO: 70 refineries – which is equal to approximately three-quarters of refineries. This is due to the fact that SCO, a light crude oil, has characteristics more similar to the conventional oil already processed by EU refineries.

This map is a first step in a process of disclosing more information about the direct links between tar sands and EU refineries. A similar map has been published in North America by Oil Change International but it goes beyond the information disclosed here as it presents estimations of actual levels of tar sands that have been processed by individual refineries in the US and Canada. This highlights the fact that there is much more information publicly available in the United States about the crude oil imported and processed in different refineries.

CONCLUSION

Europe already imports tar sands crude oil and has the refining capacity to import more. Without more action to prevent tar sands coming on the EU market, Europe risks further weakening efforts to combat climate change. By failing to act on the tar sands threat it is creating a damaging precedent regarding other frontier oils such as Artic oil. In addition to the threat, this map also highlights the need for better monitoring, tracking and public disclosure of oil flows to the EU.

This study has been carried out with the support of the Heinrich Böll Stiftung e.V.

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[i] Spain: http://www.theguardian.com/environment/2014/jun/06/first-tar-sands-oil-shipment-arrives-in-europe-amid-protests; and other destinations: http://www.theglobeandmail.com/report-on-business/industry-news/energy-and-resources/oil-sands-crude-reaching-europe-asia/article21419972/ / http://www.eia.gov/todayinenergy/detail.cfm?id=18631