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Waste-to-fuel industry demands deeper audits

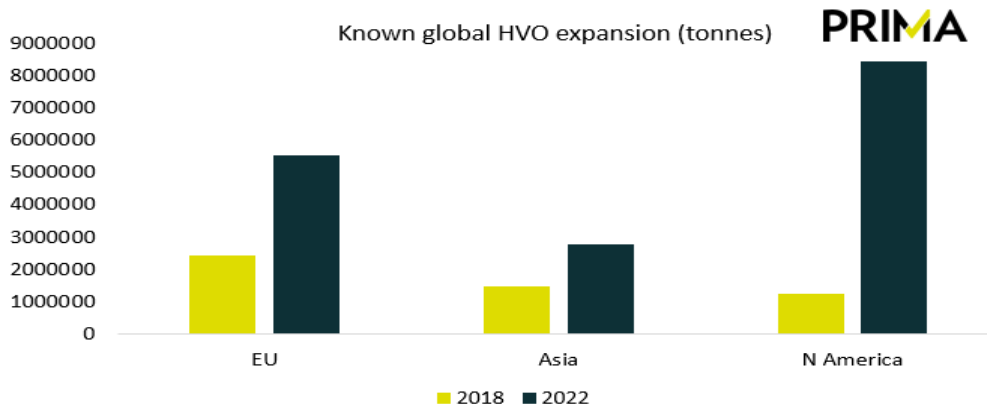
With a large chunk of the international waste-to-fuel industry gathered in China in early July, the sustainability issues surrounding the booming international waste biofuels complex came to the fore. Proposed developments in supply chain policing carry implications for future waste origination flows and pricing as well as asset investment in the low carbon fuel production and supply chain. This is as offtake is set to boom into a planned international army of renewable diesel plants servicing the road, aviation, maritime and chemical sectors, each of which sent corporate representatives to the meeting.

In Shanghai on 2 July, international buyers preempted the latest NGO salvo against European palm-for-fuel consumption at ISCC’s stakeholder dialogue meeting on wastes, residues and advanced low carbon fuels. While previous meetings in Shanghai have resembled the early years of the Klondike for low carbon fuels, this year’s meeting was a larger but more mature affair, with the industry paying intense attention to calls for enhanced sustainability auditing standards to ensure the integrity of the wastes supply chain. The industry has looked with grim irony at the level of scrutiny it employs across its supply chain, in stark contrast to the lax and largely unaudited social and environmental standards being reported in the competing battery component extraction and processing industries which currently find favour with governments and NGOs.

European and North American state legislation will value fats and oil streams with zero upstream indirect land use change credentials (ILUC) going forward, offering sales opportunities at a price premium to wastes as well as to segregated palm oil smallholder supply chains grown on marginal land. Waste streams from the palm production process are another obvious value add, with palm oil mill effluent (POME) recognised in Europe as an “advanced” feedstock stream. ISCC has set up a new technical working group to establish auditing standards specific to POME.

The ISCC technical committee which steers the sustainability programme’s rulebook governing the international wastes supply chain has recommended auditors start profiling what it sees as the riskiest parts of the international supply chain. Given their size and the complexity of their trade books, the committee recommended traders with storage facilities should be subject to more “frequent controls” and audits, and that all new registrants in the ISCC system should be subjected to mandatory audits of their business within six months of joining the scheme. Auditors should go into sites pre-armed with the detail of points of origin for biofuels and feedstocks being declared into mass balance books, and should be expected to scrutinise collection points for signs of any “red flags” that product is being mis-declared.

Parts of the supply chain enjoying the highest sustainability price premiums should also be subjected to heftier auditing requirements than lower pricing parts of the supply chain,



the committee says, with plans to beef up reporting requirements even for smaller waste collectors also under consideration. Italy's double count market currently commands some of the highest premiums in the market given the granularity of the sustainability reporting required there, although buyout prices suggest Germany's GHG-saving mandate and development fuels as other potential candidates. For palm, this could mean extra scrutiny of the huge aggregation and storage facilities dealing with both Renewable Energy Directive (RED) sustainable product for Europe and non-RED sustainable product for other origins, as well as extra checks for facilities handling waste feedstocks alongside palm and palm biodiesel.

Palm oil firms in attendance at the ISCC wastes and residues seminar in China questioned the ability of other vegetable oils to substitute for palm given the disparity in the size of their respective supply pools, even before considering the additional demand being injected into the market by an army of planned renewable diesel plants in Asia, Europe and the US which is pushing billions of dollars into oil industry procurement efforts for oils and fats. For the non-Asian buy side, the politics of environmental and social sustainability is proving a more important contracting determinant than straight price, requiring the Asian fats and oils sell side to adjust its marketing perspective to a higher standard of auditing and resultant branding to keep it in the running to meet a boom in demand for low carbon intensity renewable fuel during the 2020s and beyond.

The wastes committee remains wary of throwing out the low carbon baby with the bathwater if auditing requirements push waste supply streams beyond the bounds of economic viability, robbing global transport fuel supply chains of the greenhouse gas savings which they offer.

"Governments want to see more waste-based biofuels supplied into their markets so we have to balance the cost of compliance with the strength of the verification system. We don't want to increase the strength of audits to the point where we start to lose legitimate volumes of waste," says ISCC waste, residues and advanced low carbon fuels co-chair Patrick Lynch.

European producers are already operating on a safety-first approach. French oil giant Total, which has now opened its first 500,000t/yr HVO plant at La Mede in southern France, says it has already been declining feedstock offers which don't meet the company's sustainability criteria amid an ongoing waste aggregation effort.

Industry plans gold standard trade database

The wider industry meanwhile is pushing to adopt a comprehensive biofuel databasing system to record all entries into the European market, pre-empting the European Commission's demands for this solution to be in effect by the early 2020s. While the Commission has requested a database recording only refined biofuels, the industry maintains feedstocks should also be databased to maintain well-to-wheel supply chain integrity. The database is seen becoming a de facto mandatory standard if reporting becomes required practice in order to trade with the major producers, oil companies and trading firms which are all aggressively expanding their feedstock aggregation and advanced biofuel refining books.

While the booming trade in international UCO remains the main focus of current auditing efforts, other advanced feedstock streams have their eyes on the need to future-proof their businesses. ISCC has now established a separate technical committee to manage standards in the Palm Oil Mill Effluent (POME) business which qualifies as an advanced Annex

A feedstock into the sub-mandates which will rival established waste cooking oil and animal fat streams for overall size by 2030. Oil majors are already actively buying POME to run through tolled biodiesel production assets in southern Europe to qualify for entry to fledgling advanced biofuel mandates. In future, the expanding army of international renewable diesel assets will provide a hungry new market for POME in the absence of other readily available advanced feedstock streams.

China struggles with feedstock shortage

In China itself, A shortage of feedstock and poor distribution networks stand in the way of China's ambitions to roll out an E10 mandate from the start of next year, Junfeng Li, director of the National Centre for Climate Strategy and International Cooperation told the ISCC delegates. The comments highlight the problems facing the domestic ethanol sector versus government ambitions to reduce air pollution and hit ambitious national climate change targets, with the US locked out of China's renewable fuel market unless revived US/China trade talks can quickly revive biofuels business relations between the two giants against a backdrop of intensifying nationalistic sniping.

With Chinese grain costing 1,900 – 2,000t RMB/tonne, bioethanol produced in China is currently costing more than 6,000RMB/tonne to manufacture, Li says. Relative to US corn ethanol prices in the Gulf trading just over \$1.61/gal, this represents a spread of more than \$1.25/gal.

The hike in tariffs on US ethanol to 45% in April last year have stalled the once booming US export business in ethanol, rendering interest in the spread largely academic.

Ethanol promotion has been a core headline component of China's transportation decarbonisation policy to hit the government's five-year plan target of an 18% cut in economy-wide carbon intensity per unit of GDP by 2020 relative to a 2015 baseline. The demand side ambitions complement agricultural policy focused on the need to draw down deteriorating grain stocks using bioethanol as an offtake, with increased productivity per hectare expected to merely stabilize corn production from a reducing footprint as oilseed-based protein meal production focuses government long-term agricultural planning.

Like China's biofuel distribution channels, Chinese cellulosic production capable of converting solid biomass into liquid fuel also remains undeveloped as a substitute for edible crop-based fuel, Li says. China's oil giants are ploughing on with plans to put the "circular" waste-utilising economy at the heart of their decarbonisation strategies nonetheless, although most Chinese energy wastes are currently finding their way into higher paying export markets in Europe in the guise of waste fats and greases.

ISCC certificate issues based on actual GHG values

