

Restrict the co-opting of plastic waste imports “repackaged” as feedstock

This brief outlines the case against the use of plastic wastes as “alternative” fuels to be burned for energy based on data taken from previous studies. Such practice circumvents the transboundary issues related to plastic waste management and the efforts to monitor, control, and subsequently, limit the impacts of plastic waste. We also provide recommendations to address those issues which can be used to inform public policies of any government agency.

This brief was sent to the Malaysian Department of Environment and Department of National Solid Waste Management on 2 June 2022.

OVERVIEW

The implication of the Green Fence policy by the Chinese government in 2018 is that the majority of waste exports specifically from the Global North had been diverted away from China and into Southeast Asian countries. This had resulted in the flooding of waste imports markedly from 2018 to 2019 into those countries which include Malaysia.

In 2019, the enforcement actions and stricter controls on plastic waste imports resulted in a drop in imports of plastic wastes into the country. However, a study by the Consumers’ Association of Penang (CAP) supported by the International Pollutants Elimination Network (IPEN) in March 2022 titled “Malaysia: Repackaged Waste Imports” suggested that there could be a circumvention by exporting countries whereby plastic wastes, instead of being imported as waste materials with the proper international Harmonized System (HS) Code designations, could be repackaged as Refuse-Derived Fuels (RDFs) or Processed Engineered Fuel (PEF). This allows the products to be imported as “alternative fuel” instead of waste. RDF generally comprises 30% - 40% plastic waste with the remainder a mix of timber, paper and textile waste that is uneconomic to recycle, but has high calorific value which releases exothermic energy. This feedstock could end up in our cement kilns or other industrial kilns.

In addition to that, the import of tyre-derived fuel (TDF) from Australia also came to light in June 2021 after the media reported a fire at Pulau Carey, Teluk Panglima Garang. Bernama report revealed that a warehouse owner with a valid Approved Permit (AP) had shipped shredded tyres from Australia to be used as fuel for a plastic recycling factory in Chemor, Perak and a cement factory in Langkawi, Kedah. The import of the shredded tyres/TDF can be traced back to ResourceCo Asia plant in Ipoh, Perak – an Australian-based company specialising in alternative fuel production from waste materials.

The same CAP/IPEN study also noted that the wastes brought by ResourceCo Asia from Australia in 2015 into Malaysia were classified as ‘solid fuel’ even though as previously described, the imports contained waste. The company explained that the feedstock it imported is not waste and that the waste had been through material recovery facilities to remove organics, metals, glass, and any other hazardous materials before the feedstock is shredded, sealed, and sent to Malaysia. The company is now sourcing feedstock locally and is believed to be importing TDF.

DEFINITIONS

“Alternative fuels” – refers to and used interchangeably for Processed Engineered Fuel (PEF), Refuse-Derived Fuel (RDF), Tyre-Derived Fuel (TDF). Also synonymous with “feedstocks”.

“PEF” is a plastic-based recycled combustible wastes with high calorific value comprising mainly hard and soft plastics (65%) with the remaining bulk made up of other allowable combustible waste materials namely, paper, wood and textile.

“RDF” is a crude fuel typically derived from combustible waste from Municipal Solid Waste (MSW) or Commercial and Industrial (C&I) waste. It is typically pre-sorted and shredded residual waste with recyclables removed or comprise of the reject fraction of a Materials Recycling Facility (MRF) or a Mechanical Biological Treatment (MBT) operation.

“TDF” refers to Tyre-Derived fuel (TDF) which is composed of shredded scrap tyres. These may be mixed with coal or other fuels, such as wood or chemical wastes, to be co-burned in cement kilns, power plants, or paper mills.

“End-users” include industrial plants for power or heat generation, or both; cement kilns; purpose-built incinerators with power or power and heat; co-firing with coal at power stations; co-firing with biofuels; and advanced thermal technologies such as pyrolysis and gasification (as described by the Department for Environment, Food and Rural Affairs, UK, 2013).

ISSUES

1. A recent study by the International Energy Agency concludes that it is challenging to study the production and end-use of secondary fuels – partly because of the multitude of terms used to describe waste-derived fuels (WDF). These include solid recovered fuels (SRF), refuse, paper and plastic fuel (RPF), and process engineered fuel (PEF), among others. The report adds that there are larger uncertainties in the characterisation and the inter-comparability between different RDFs, partly because different methods are used for the characterisation.
2. The pre-processing of waste-based fuels may fail to effectively and fully extract PVC and other halogenated plastics which generate toxic emissions during incineration or co-firing. Their co-incineration in cement or other industrial kilns harms the environment and human health. Concerns include emissions of heavy metals (mercury, lead and cadmium), dioxins and furans, and particulate matter (including nanoparticles).
3. There is also a grave concern that the burning of these “alternative fuels” at the end-users’ facilities pose the problem of inadequate handling of the materials which may result in unsafe and improper disposal of the toxic residues. Hahladakis et al noted that in the search for high calorific value fuels, cement kilns still have to limit their use of waste plastics due to the corrosive effects of the thermal degradation products, as halogens emitted from the combustion of plastic waste can also cause corrosion in incinerators and other thermal facilities. Uncontrolled combustion of plastic waste and, in particular of those containing halogens such as, PVC, polytetrafluorethylene/teflon, plastic containing brominated flame retardants, etc. can cause emissions of hazardous substances, e.g. acid gases and unintentional persistent organic pollutants (POPs) such as dioxins.
4. Continuous monitoring of toxic gases from cement plants₃ is lacking. In Malaysia, emissions of metals and their compounds such as HCl, HF, NH₃, dioxins and furans are only subjected to periodical monitoring. This is inadequate for toxic emissions that have adverse impacts to human health and the environment.

RECOMMENDATIONS

1. As clarified in the Global Alliance for Incinerator Alternatives (GAIA)'s policy brief, the Basel Convention listings clearly cover these waste-based fuels in Annex II to the Convention, under Y46 "Wastes collected from households" when the primary component is municipal waste, or the new plastic waste listing Y48, when the primary component is plastic waste from other sources. Prior informed consent is therefore required for all shipments of waste-based fuels. Thus, the Malaysian government must demand the exporting party to clearly identify RDF, SRF, PEF, AFR, and other waste-based fuels as wastes, and apply relevant Basel Convention trade controls accordingly.
2. There is a need to establish a single HS code for imported RDF, PEF and all other solid fuels made from waste. These wastes which are repackaged shredded wastes should be regulated as wastes and not products of "energy-from-waste" or "solid fuel". They should also require Basel Convention prior informed consent as co-processing in cement kilns are not destined for environmentally-sound recycling.
3. A thorough, independent and transparent scientific assessment of the potential of, and its correlation to the burning of RDF with the generation of harmful chlorinated and brominated dioxins, as well as the health and environmental impacts of burning RDF, should be conducted.
4. Phase out and eventually ban the importation of plastic waste fuels, feedstock based imports and other RDF trade by 2024.

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ABOUT THE COALITION:

*The **Malaysia Stop Waste Trade Coalition** is made up of a number of environmental NGOs in Malaysia including Sahabat Alam Malaysia (SAM), Consumers' Association Penang (CAP), Persatuan Tindakan Alam Sekitar Kuala Langat (PTASKL), RE Sustainable Enterprise, Environmental Protection Society Malaysia (EPSM), Greenpeace Malaysia, Zero Waste Sabah and Malaysian Nature Society (MNS) Selangor - Green Living, with a few supporting organisations like Center to Combat Corruption and Cronyism (C4). Our main focus is on the waste trade industry with the aim to eliminate the impacts of the plastic waste trade in Malaysia. Some of our members are core members of the Break Free from Plastics movement.*