



COPs SIDE EVENT



9 JUNE 2022 | 18:15 - 19:45 CEST

PLASTICS & REFUSE-DERIVED FUEL: FUEL PRODUCT OR PLASTIC WASTE EXPORT?

>>> tiny.cc/GENgJunePlasticWaste

GENEVA
BEAT PLASTIC POLLUTION
DIALOGUES



TESS

Forum on Trade,
Environment and the SDGs



Permanent Mission of Norway
Geneva



Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
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COPs PLASTICS FORUM

8-10 JUNE 2022 | CIGG & ONLINE



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CONVENTIONS

COPs

#GlobalAgreement for a #HealthyPlanet

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COPs SIDE EVENT

Plastics & Refuse-Derived Fuel: Fuel Product or Plastic Waste Export?



9 June 2022 | 18:15 - 19:45 CEST

SPEAKERS



Lee BELL



Mercury and POPs Policy Advisor, IPEN
| Senior Researcher, National Toxics
Network (Australia)



Yuyun ISMAWATI



Senior Advisor and Co-Founder, Nexus
for Health, Environment and
Development Foundation (Nexus3)



**Mageswari
SANGARALINGAM**



Research Officer, Consumers'
Association of Penang



Jim PUCKETT



Executive Director and Founder, Basel
Action Network



Lia ESQUILLO



Programs and Policy Coordinator, IPEN |
Moderator



Plastics & Refuse-Derived Fuel: Fuel Product or Plastic Waste Export?



Lia ESQUILLO

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- Lia ESQUILLO | Programs and Policy Coordinator, IPEN | Moderator

Panel Discussion

- **Waste Export Bans and RDF Trade**

Lee BELL | Mercury and POPs Policy Advisor, IPEN | Senior Researcher, National Toxics Network (Australia)

- **Refuse-Derived Fuel in Indonesia**

Yuyun ISMAWATI | Senior Advisor and Co-Founder, Nexus for Health, Environment and Development Foundation (Nexus3)

- **Refuse-Derived Fuel in Malaysia**

Mageswari SANGARALINGAM | Research Officer, Consumers' Association of Penang

- **Is RDF Regulated Under the Basel Convention?**

Jim PUCKETT | Executive Director and Founder, Basel Action Network

Q&A

Closing Remarks

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Australia's waste export ban undermined by exporting waste plastic as fuel.

Lee Bell
IPEN Mercury and POPs Policy Advisor
BRS COP June 2022



Plastic waste export: the Australian context.

- 2017 - China's National Sword policy implemented to reduce environmental damage from imported waste in China. Waste exporters like Australia relied heavily on China to take waste and now redirects waste exports to other countries in south-east Asia.
- Post 2017 – Australian low grade plastic waste exports to Asia destined for recycling often dumped, open burned or used as fuels with minimal recycling. POPs food chain contamination from burning plastic identified.
- Import countries begin to reject and return Australian shipments of low grade and contaminated plastic wastes.

- **2019 -The Basel Ban amendment enters into force preventing OECD countries exporting hazardous wastes to all non-OECD countries.**
- **2020/2021 - In response to neighbouring country waste rejections and tighter export controls, Australia begins to invest in domestic recycling and announces a waste export ban.**
- **Now- Refuse Derived Fuel (RDF) exports with high plastic waste content (30%+) for burning in cement kilns as fuel, emerge as part of the Australian ‘recycling’ plan undermining their waste export ban and potentially breaching the Basel Ban amendment.**
- **Other countries in the region increasingly import, trade and produce RDF variants to burn in local cement kilns.**
- **Environmental contamination and carbon emissions from burning plastic waste as fuel becomes a growing regional threat.**

“ WHAT IS CHINA’S NATIONAL SWORD POLICY ”

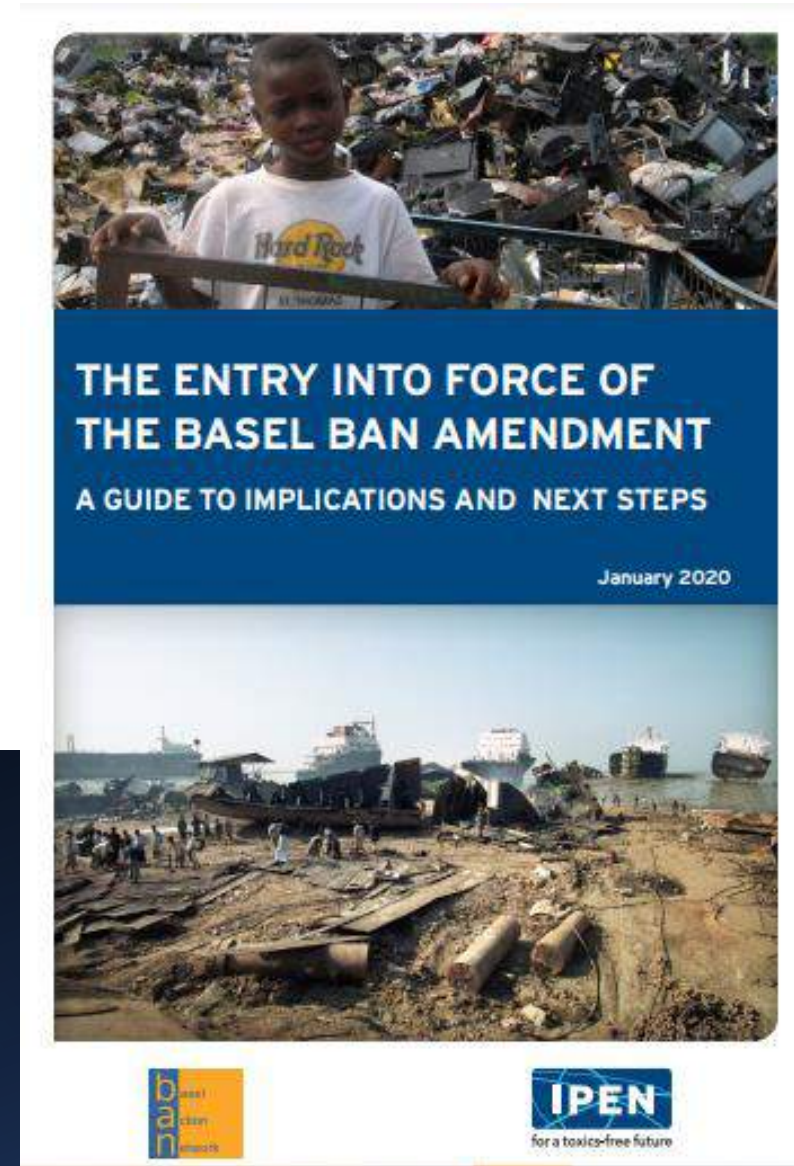
THE CHINESE NATIONAL SWORD POLICY IS THE COUNTRY'S LATEST AND STRICTEST REGULATION ON IMPORTS OF SOLID WASTES AS RAW MATERIALS. THE POLICY BANS VARIOUS PLASTIC, PAPER AND SOLID WASTE, INCLUDING PLASTICS SUCH AS PET, PE, PVC AND PS.

2017 China’s National Sword policy prompted waste exporting countries like Australia to review their domestic recycling infrastructure and other export options. With minimal mixed plastic waste recycling options in Australia other export destinations were targeted.

Relying for decades on waste exports to countries with lower labor costs and environmental standards for recycling, meant many export countries like Australia had minimal domestic recycling infrastructure in place, especially for plastic waste.



2019 - Basel Ban Amendment enters into force. Plastic waste export controls tighten further.



https://ipen.org/sites/default/files/documents/ban-basel-fact-sheet-v2_1-en.pdf

For decades Australia followed an *export model* of waste recycling.



Plastic wastes collected for recycling in Australia have been exported to China, Malaysia, Thailand and other Asian countries including Indonesia.

Similar waste from Europe and the US also follows this route. Much of this waste is not recyclable and was open burned or used as crude industrial fuel including in the tofu factory boilers in Tropodo.

IPEN monitoring found extremely high levels of dioxins and other toxic chemicals in soil and chicken eggs in Tropodo and other towns where plastic waste was burned and toxic emissions resulted. The results indicating widespread food chain contamination with dioxin and other POPs around these sources.

Under pressure from surging contaminated plastic imports, Indonesia, Malaysia and the Philippines started rejecting Australian waste shipments.

The New York Times

*To Make This Tofu, Start
by Burning Toxic Plastic*



Indonesia sends rubbish back to Australia and says it's too contaminated to recycle

Indonesian officials say containers of paper contaminated by electronic waste, used cans and plastic bottles



Malaysia sends our rubbish back

Malaysia will “immediately” ship back to Australia two containers of maggot-infested waste.



Manila objects to waste dumping

The Philippines has accused Australia of using it as a “dumping ground”.



for a toxics-free future

The Australian government at the time reacted and was applauded for announcing a waste export ban and announcing massive domestic recycling investment.



Joint Media Release: \$1 billion waste and recycling plan to transform waste industry

6 July 2020

Joint media release: World-first ban on waste plastic exports

1 July 2021

The Hon Sussan Ley MP, Minister for the Environment

The Hon Trevor Evans MP, Assistant Minister for Waste Reduction and Environmental Management



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The recycling focus included investment in Refuse Derived Fuel (RDF) and Process Engineered Fuel (PEF)

Refuse Derived Fuel (RDF) and Process Engineered Fuel (PEF) are shredded plastics, paper, timber, fabric and other combustible waste compressed into 'solid fuel' pellets or bales for burning in cement kilns and incinerators in Asia.

- These may be exported from Australia as 'product' (i.e. fuel) and not waste, even though they are made of waste. In this form they may avoid the restrictions of the Basel Convention international trade in waste, where they should be classified at least as Y48 due to its 30%+ plastic waste content. However, the Basel plastic waste guidance fails to address the implications of this waste trade
- Australia produces more than 250,000 tonnes annually for use in Australia and export to south-east Asia with plans to significantly increase production and exports.



February 28, 2022

11:19 AM GMT+8

Last Updated 3 months
ago

Environment

EXCLUSIVE After much praised waste export ban, Australia under fire for shipping plastic trash as 'fuel'

By Joe Brock and Kanupriya Kapoor

<https://www.reuters.com/business/environment/exclusive-after-much-praised-waste-export-ban-australia-under-fire-shipping-2022-02-28/>

Australian waste companies ResourceCo and Cleanaway plan significant RDF/PEF expansion in the region.



Source: ResourceCo Australia

RDF and Solid Recovered Fuel
transboundary movements in
Asia.

China and India are currently
the major final customers but
Australian companies intend
to export to more countries in
the region including the
Philippines.



Transboundary shipments of RDF (red line) and Solid recovered
fuel (blue line) in Asia. International Energy Association 2020

Summary of Plastic Waste Trade from Australia in the year 2021.

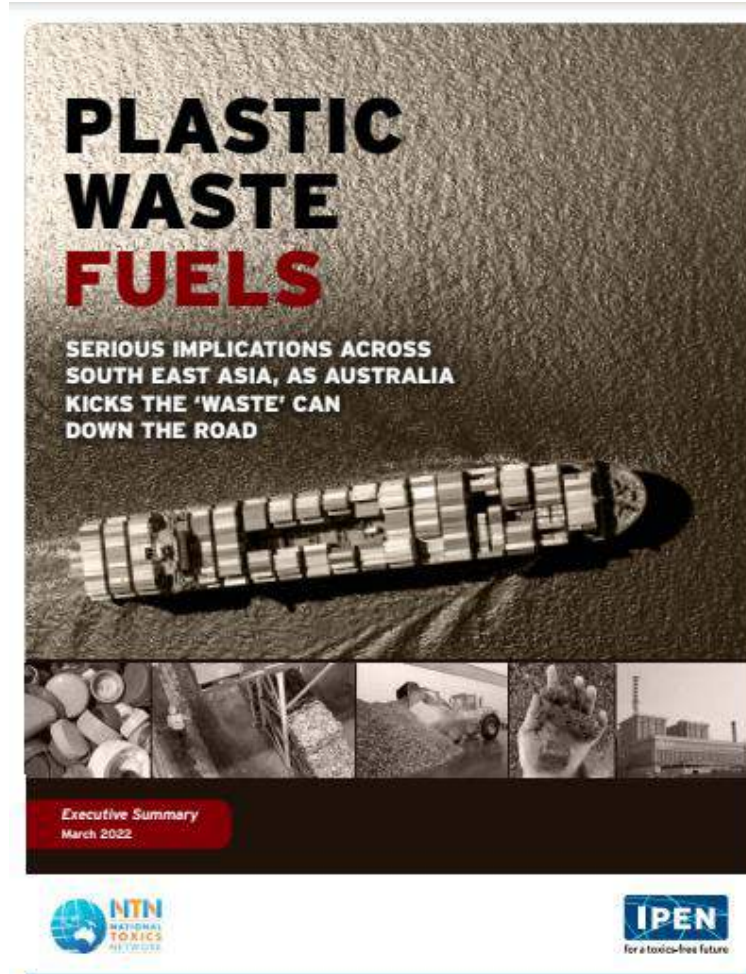
Plastic waste export ban?

- Australia is a country that actually increased its plastic waste exports in 2021 from 2020.
- Increased destinations included India, Vietnam and Malaysia.
- This is in the context of the former Australian government announcing a national ban on mixed and contaminated plastic and other waste exports on July 1, 2021.
- Another concerning development is a unilateral determination by Australia to consider RDF and PEF as a non-waste that is not subject to their waste export ban.
- Federal regulators have informed licence applicants who want to export PEF that they may require a *hazardous waste export licence*.
- RDF and Process engineered fuel (PEF) export volumes are very difficult to track accurately as they fall under broader plastic waste HS codes.

Australia exports of plastic waste to burn in neighbouring countries must end.

Recommendations

- Current RDF exports should be classified as 'waste' shipments not 'product exports' to clarify the status of this materials and subject it to Basel transboundary controls.
- RDF/PEF and associated waste used as fuel should be assigned a specific HS code so there is trade transparency.
- RDF/PEF use should be rapidly phased out as an environmentally unsound management practice for plastic waste due to toxic emissions when burned, food chain contamination and high carbon footprint.
- The newly elected Australian government can now review the practice of RDF/PEF use and export with a view to implementing a real waste export ban.



Thanks for your attention.



for a toxics-free future

leebell@ipen.org

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RDF in Indonesia

BRS COPs Side event

09 June 2022

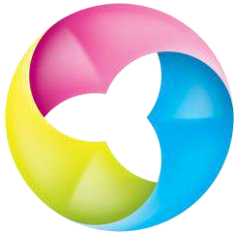
Yuyun Ismawati

Senior Advisor Nexus3

yuyun@nexus3foundation.org



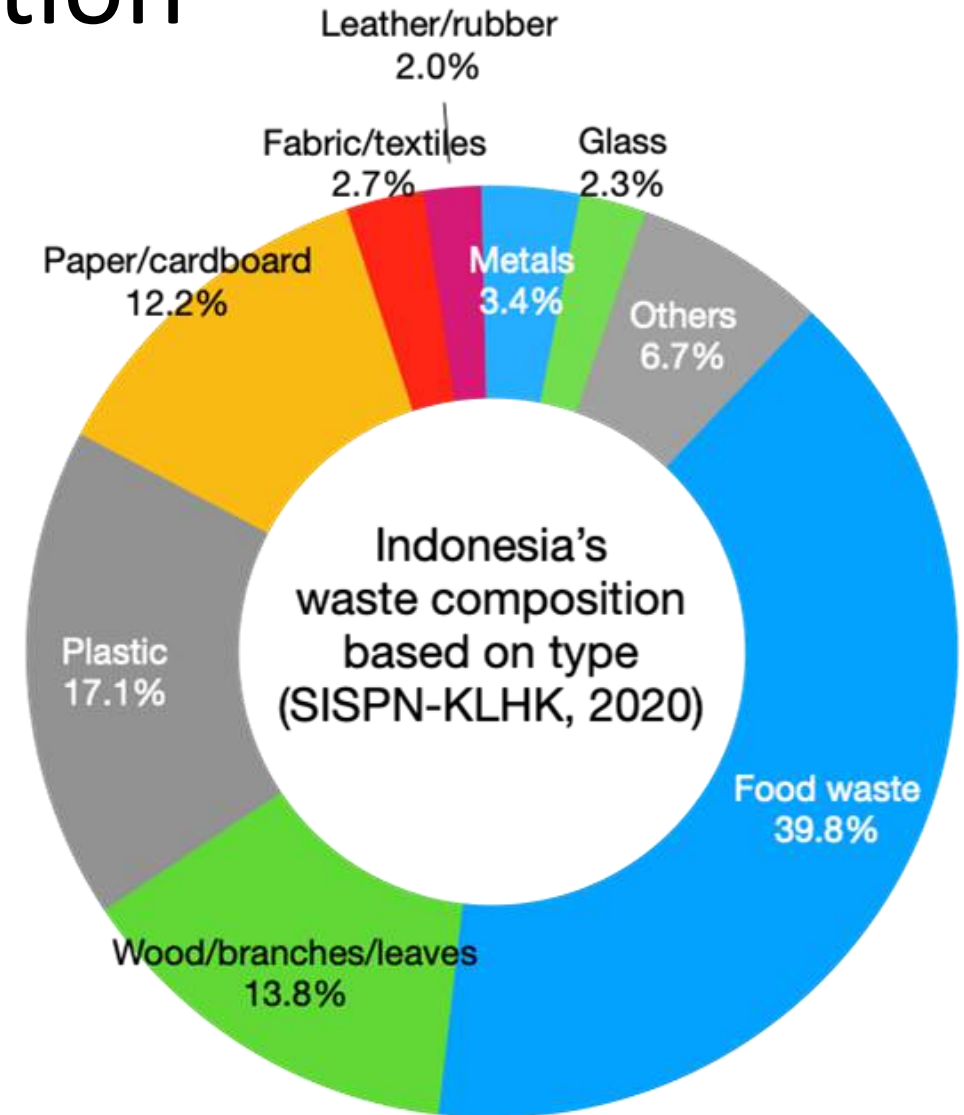
About us



- Established in June 2000 [BaliFokus Foundation]
- Jan 2019 re-branded as the Nexus for Health, Environment, and Development Foundation (Nexus3)
- Work with all stakeholders to protect vulnerable groups from the impact of developments on their health and the environment, and work towards a just, toxic-free and sustainable future
- Local problems, global challenges
- www.nexus3foundation.org



Indonesia's waste composition



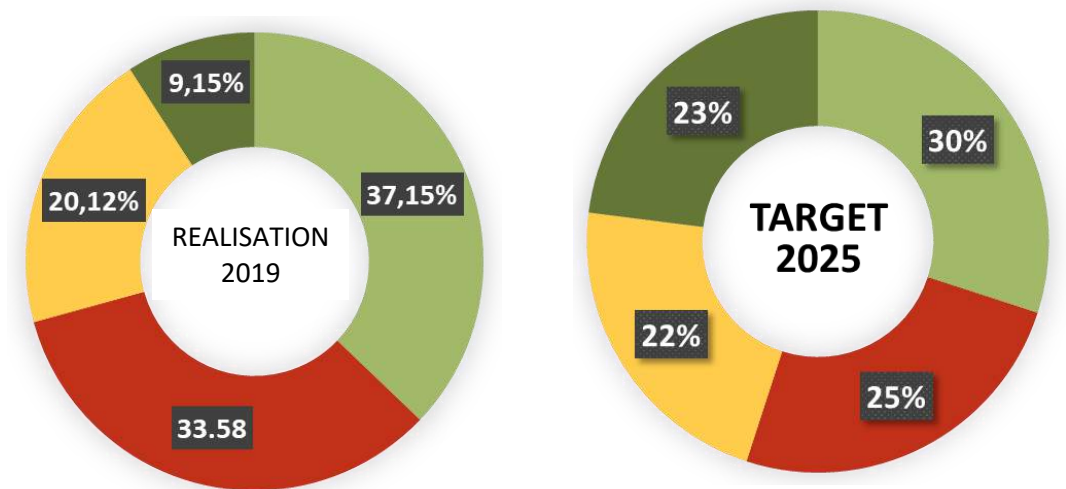
Aliansi
Zero Waste
Indonesia

Policy and regulations

National Law	UU No. 18 / 2008 Law on Solid Waste Management	UU No. 11/2020 Law on Job Creation	<div>Ministry of Environmental and Forestry</div> <div>Ministry of Public Works</div> <div>Ministry of Trade</div> <div>Ministry of Industry</div>		
Government Regulation	PP No. 81/2012 Government Regulation on Management of Household and Household-like Waste	PP No. 22/2021 Implementation of Environmental Protection and Management	DRAFT Government Regulation on Excise on Plastic	PP No. 27/2020 Management of specific wastes	
Presidential Regulation	Perpres No. 97/2017 Presidential Regulation on National Policy and Management Strategy of Household Waste and Household-like Waste	Perpres No. 83/2018 Presidential Regulation on Marine Debris Management	Perpres No. 18/2015 Presidential Regulation on Income Tax Facilities for Investment in Certain Business Fields and/or in Certain Regions	Perpres No. 15/2018 Presidential Regulation on Acceleration of Damage and Pollution Control on Citarum River Basin	Perpres No. 35/2018 Presidential Regulation on Acceleration of Development of Waste-to-Energy Installation using Environmentally-sound Technology
Presidential Decree	Keppres No. 61/1993 and No. 47/2005 Presidential Decree on Ratification of the Basel Convention on the Control of the Transboundary Movement of Hazardous Waste and Their Disposal				
Ministerial Regulation	Ministry of Trade Regulation No. 83/2020 Third Amendment to the Min. of Trade No. 84/2019 concerning Provisions for Importation of non-hazardous waste as industrial raw material	Ministry of Public Works Regulation No. 3/2013 on Implementation of Solid Waste Infrastructure and Facilities	Ministry of Environment and Forestry Regulation No. P.75/2019 on Roadmap to Waste Reduction by Producers	Ministry of Environment and Forestry Regulation No. 13/2012 concerning Bank Sampah	
	Ministry of Trade Regulation No. 48/2015 on General Provisions in the Import Sector	Ministry of Trade Regulation No. 70/2015 on Importer Identification Number	Ministry of Industry Regulation No. 48/2015 on Requirements for Income Tax Facilities Implementation		
Regional/Local Regulation	Regional/Local Regulations on SUPs - PerGub Bali No. 97/2018 - PerGub DKI Jakarta No. 142/2019	- Perwali Denpasar 36/2018 - Perwali Bogor 61/2018 - Perwali Banjarmasin 18/2016		- Perwali Balikpapan 8/2018 - Perwali Padang 36/2018 - Perda Purwakarta 37/2016	

Summary of Indonesia's national waste management regulations (as of July 2021).

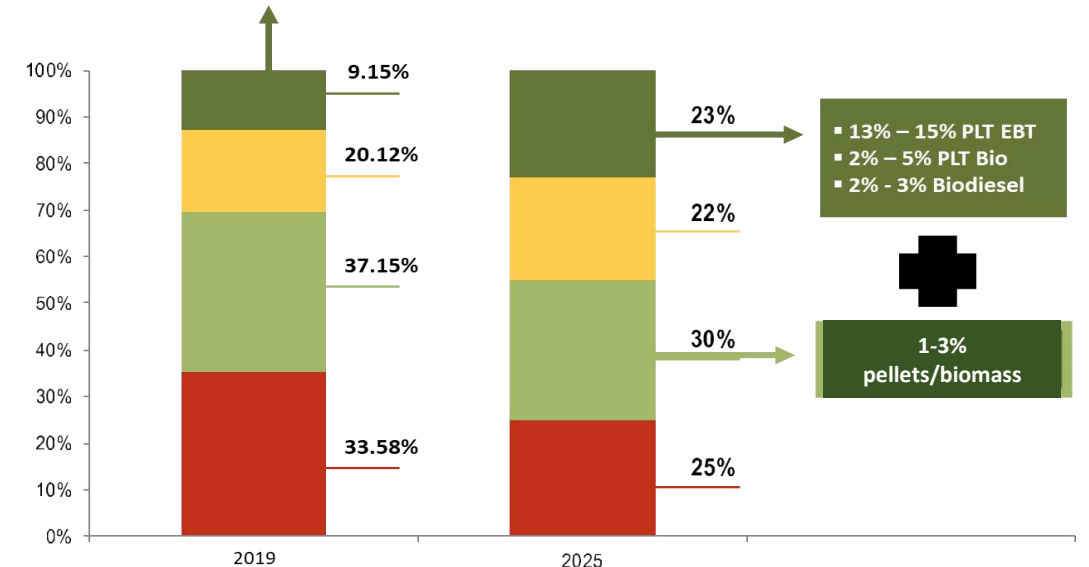
Source: KLHK-SWI (2019), Nexus3-ICEL-AZWI (2021)



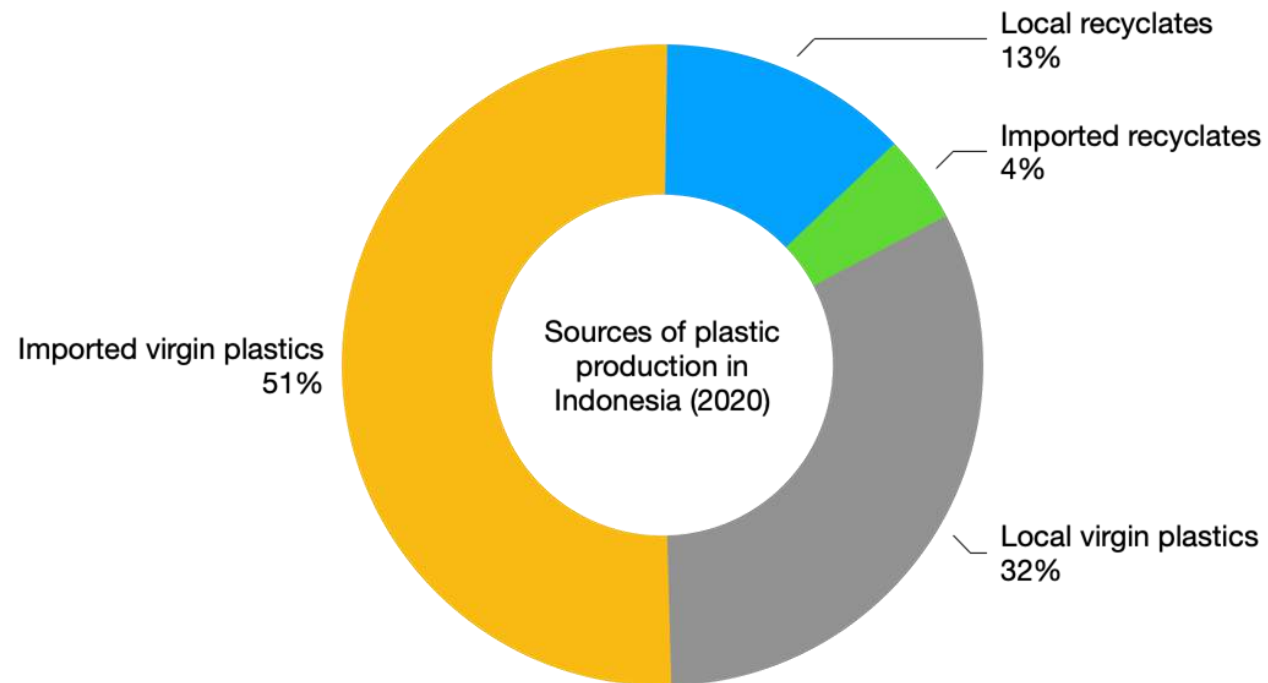
■ Coal
■ Gas
■ Oil
■ Renewable Energy

Mix energy target

- 6.2% from renewable energy
- 2.95% from biofuel



Sources of plastic materials



Source: Ministry of Industry, 2020



Type/grade of RDF reference



TABLE 1. SEVEN TYPES OF RDF BASED ON PRE-SORTED MUNICIPAL SOLID WASTES (MSW)

RDF-1	Waste used as fuel in as-discarded form
RDF-2	Waste processed to coarse particle size, with or without ferrous metal separation.
RDF-3	Shredded fuel derived from MSW that has been processed to remove metals, glass, and other inorganic materials (95%wt., passes 50mm ² 10 mesh)
RDF-4	Combustible waste processed into powder form (95%wt., passes 50mm 10 mesh)
RDF-5	Combustible waste densified (compressed) into a form of pellets, slugs, briquettes, or briquettes (d-RDF)
RDF-6	Combustible waste processed into liquid fuel
RDF-7	Combustible waste processed into liquid, gaseous fuel

Soure: The American Standards for Testing of Materials (ASTM)

Potential of materials for RDF/SRF in Indonesia

No.	Potential	Sumatera	Kalimantan	Jawa-Madura-Bali	Nusa Tenggara	Sulawesi	Maluku	Papua	Total (MWE)
1	Palm oil kernel peels	8,812	3,384	60	0	323	0	75	12,654
2	Sugar cane	339	0	854	0	42	0	0	1,235
3	Rubber	1,918	862	0	0	0	0	0	2,780
4	Coconuts	53	10	37	7	38	19	14	178
5	Rice husks	2,255	642	5,353	405	1,111	22	20	9,808
6	Maize/corns	408	30	954	85	251	4	1	1,733
7	Cassava	110	7	120	18	12	2	1	270
8	Woods	1,212	44	14	19	21	4	21	1,335
9	Cow dung	96	16	296	53	65	5	4	535
10	Municipal wastes	326	66	1,527	48	74	11	14	2,066
TOTAL		15,529	5,061	9,215	635	1,937	67	150	32,594

Source: Ministry of Energy and Mineral Resources, 2021



National Standards for RDF biopellets and briquettes

No.	SNI number	Concerning	Technical committee	Scope
Biopellets				
1	SNI 8675:2018	Biomass pellets for energy (Pelet biomassa untuk energi)	27-10, solid bioenergy and gas	This standard stipulates the requirements for biomass pellets used as energy for domestic and/or industrial purposes
2	SNI 8021:2020	Wood pellets (Pelet kayu)	79-01, wood forest products	This standard specifies the classification, quality requirements, sampling, test methods, packaging and labeling of wood pellets
3	SNI 8951:2020	Biomass pellets for electricity generation (Pelet biomassa untuk pembangkit listrik)	27-10, solid bioenergy and gas	This standard stipulates the requirements and specific test methods for biomass pellets used as fuel in Coal-fired Power Plants (PLTU) using Pulverizer Coal (PC) or Circulating Fluidized Bed (CFB) or Stoker boilers and PLTBm (Biomass Power Plants).
4	SNI 8966:2021	Refuse Derived Fuel/Solid Recovered Fuel for electricity generation (Bahan bakar jumputan padat untuk pembangkit listrik)	27-10, solid bioenergy and gas	This standard establishes quality requirements and test methods for the use of solid jump fuel in power plants for co-firing purposes, and as a standard guideline in establishing specifications, sampling, test methods, shipping and storage.
5	RSNI1 XXXX:2021 (in review process)	Woodchips for cofiring in electricity generation plant (Potongan kayu untuk cofiring pada pembangkit listrik)	27-10, solid bioenergy and gas	This standard stipulates the requirements and test methods for specification of wood chips used as fuel for cofiring in Coal-fired Power Plants (PLTU).
6	RSNI1 XXXX:2021 (in review process)	Palm oil shells for cofiring in power plants (Cangkang sawit untuk cofiring pada pembangkit listrik)	27-10, solid bioenergy and gas	This standard stipulates the requirements and test methods for the specification of palm shells used as cofiring fuel in Coal-fired Power Plants (PLTU).
7	RSNI1 XXXX:2021 (in review process)	Sawdust for cofiring in power plants (Serbuk gergaji untuk cofiring pada pembangkit listrik)	27-10, solid bioenergy and gas	This standard stipulates the requirements and test methods for the specification of sawdust used as fuel for cofiring in Coal-fired Power Plants (PLTU).
Briquettes				
1	SNI 19-4791-1998	Coconut coir powder briquettes	27-10, solid bioenergy and gas	This standard includes references, definitions, quality requirements, sampling methods, test methods, marking requirements, and packaging methods
2	SNI 01-6235-2000	Wood charcoal briquettes	27-10, solid bioenergy and gas	This standard includes scope, reference, definition, quality requirements, sampling, test method, test pass requirements, marking and packaging requirements for wood charcoal briquettes.

Source: Badan Standarisasi Nasional Indonesia, 2021

Cofiring in coal-fired power plants

- PLN's cofiring roadmap set out plans to migrate 114 existing coal-fired power plants (total capacity of 18,154 MW) by 2024 and feedstock management improvement 2021-2023
- The cofiring plan will require large-scale biomass production to secure stable alternative fuel supplies between 4 to 9 million tonnes annually – 1-5% coal replacement
- Power plant with Pulveriser Coal Boiler, circulating fluidized bed (CFB) Boiler and Stoker Boiler
- Cofiring:
 - Direct cofiring: the cheapest and most commonly used option;
 - Indirect cofiring: biomass is first gasified into fuel gas and then used as fuel; and
 - Parallel cofiring: biomass is burned separately, popularly used in the pulp and paper industry.

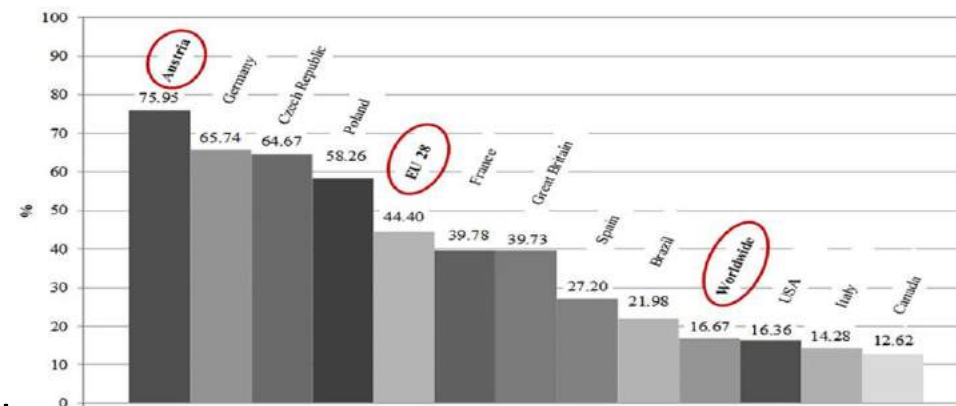


Co-processing in cement kilns

Wastes	Energy (MJ/kg) ^a	Energy (kcal/kg) (Petcoke ~7500) ^b
Used tire	23.03	5,500
Husk	19.93	4,760
Industrial plastic	18.21	4,350
Waste oil	14.65	3,500
Scrap paper	14.23	3,400
Contaminated waste	14.23	3,400
RDF plastic	11.72	2,800
Sewage sludge	8.37	2,000

Source: ^aAkcansa (2010) and ^bEkincioglu et al. (2012)

- PCDDs/Fs monitoring is challenging
- Thermal Substitution Rate target 15-23% by 2025
- CAPEX needed for coprocessing
- Collaboration with local suppliers of RDF fluff
- FMGcs supports and claimed plastic credits



Source: Sarc et al. 2019



MoEF Regulation No. P19/2017 emission standard for cement industry

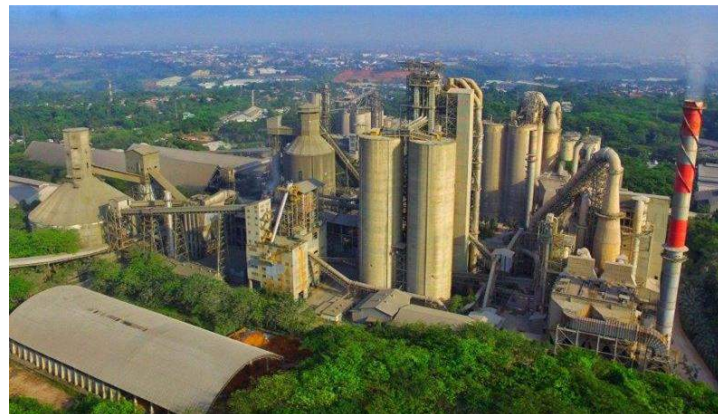
BAKU MUTU EMISI BAGI USAHA DAN/ATAU KEGIATAN
INDUSTRI SEMEN

BAKU MUTU EMISI SUMBER TIDAK BERGERAK BAGI USAHA
DAN/ATAU KEGIATAN INDUSTRI SEMEN YANG MENGGUNAKAN
REFUSE DERIVED FUEL (MENGGUNAKAN SAMPAH RUMAH TANGGA
DAN/ATAU SAMPAH SEJENIS RUMAH TANGGA)

No	Parameter	Satuan	Nilai Baku Mutu Emisi
1	Partikulat*	mg/Nm ³	60
2	Sulfur Dioksida (SO ₂)*	mg/Nm ³	650
3	Nitrogen Oksida (NO _x)*	mg/Nm ³	800
4	Hidrogen Fluorida (HF)*	mg/Nm ³	2
5	Hidrogen Klorida (HCl)	mg/Nm ³	20
6	Karbon Monoksida (CO)*	mg/Nm ³	625
7	Cadmium (Cd)	mg/Nm ³	0,2
8	Merkuri (Hg)	mg/Nm ³	0,2
9	Lead (Pb)	mg/Nm ³	5
10	Arsenik (As)	mg/Nm ³	1
11	Nikel (Ni)	mg/Nm ³	0,5
12	PCDD/F (Dioxin dan Furan)**	ng TEQ/Nm ³	0,1

Catatan :

- kadar maksimum baku mutu diatas dikoreksi terhadap 7% Oksigen (O₂)
pada kondisi 25°C, 760 mmHg.



- Pengukuran emisi dilakukan pada kondisi kering.
- Pengukuran kadar Karbon Dioksida (CO₂) pada cerobong kehaar.
(*) Pengukuran diwajibkan menggunakan CEMS
(**) PCDD/F diukur setiap 4 (empat) tahun sekali setelah beroperasinya
unit fasilitas *Refuse Derived Fuel*.

Salinan sesuai dengan aslinya
KEPALA BIRO HUKUM,

Ttd.
KRISNA RYA

MENTERI LINGKUNGAN HIDUP DAN
KEHUTANAN REPUBLIK INDONESIA,

Ttd.
SITI NURBAYA

PCDDs/Fs in Alternative Fuels (AF):

- RDF from MSW waste measured every four years after the facility started its operation
- Hazardous waste ? measured at least once a year
- BUT no laboratory capacity in Indonesia

+Heavy metals releases



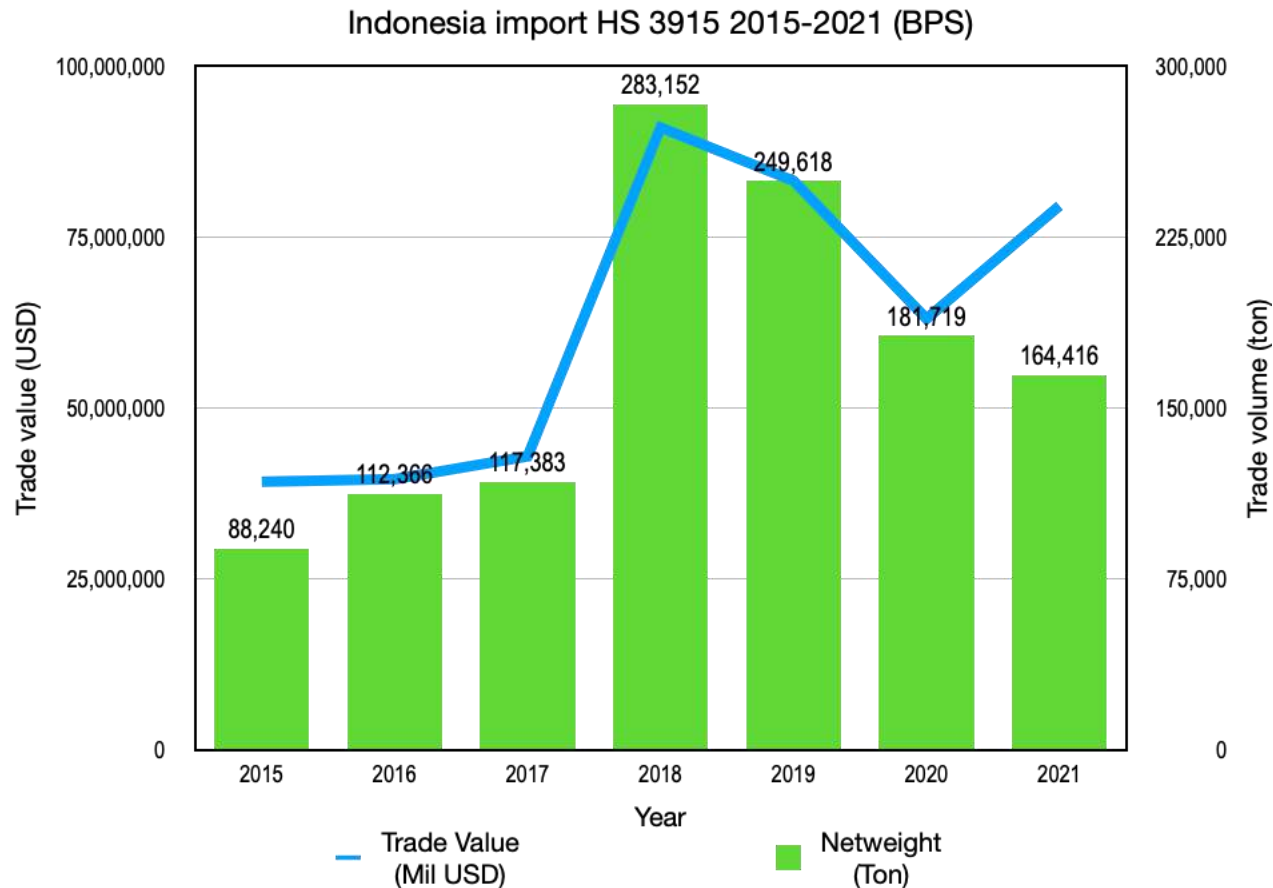
RDF from mixed wastes and waste residues for plastic credit



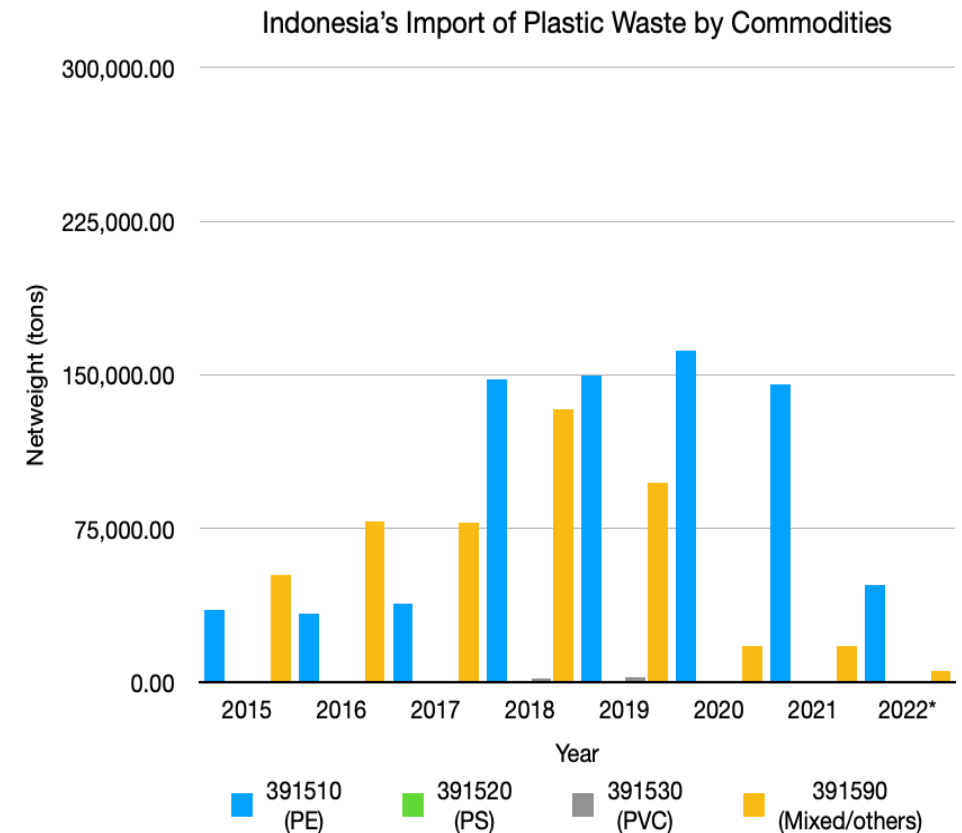
© Indonesian Waste Platform
2022

Examples of the marked photos submitted as evidence by IWP to Verra via email. Verified by Jeffri Ricardo/Danone as the TPST Samtaku Jimbaran facility. Left to right: 1) mixed waste collection, 2) blue RDF briquette machine, 3) the RDF briquettes, 4) evidence of leachate leakage, 5) evidence of leachate pollution to waterways, 6) evidence of burning and black smoke from furnace complained by the communities.

Indonesia imported plastic wastes (HS3915 etc) 2015-2021

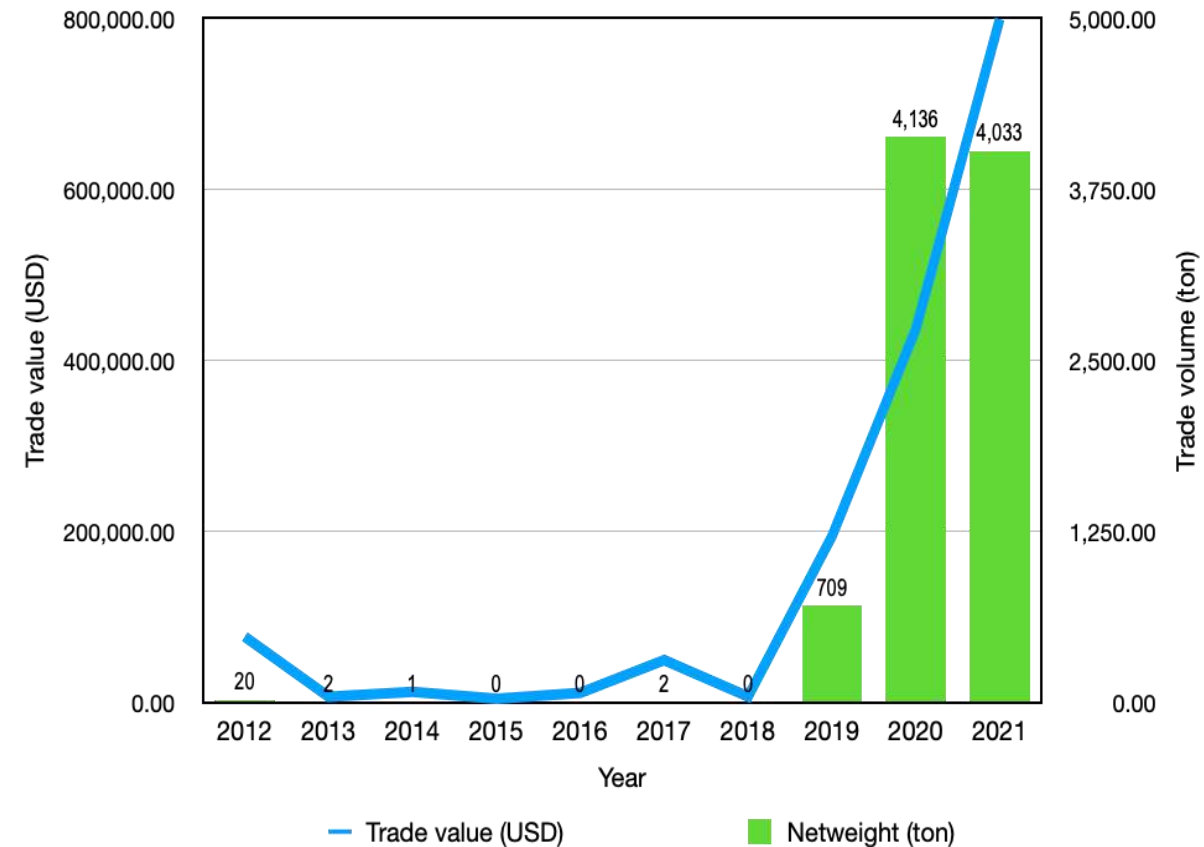


Source: BPS Indonesia



Indonesia imported waste (HS3825) from all partners 2012-2021

Year	Trade value (USD)	Netweight (ton)	Partner	Remarks
2012	76,964.00	19.83	Australia, Germany, China, Hong Kong SAR, Rep. of Korea, Other Asia, nes, India, Singapore, UK, USA	India was the highest exporter (91%)
2013	6,711.00	2.04	Canada, Germany, Rep. of Korea, Malaysia	Republic of Korea was the highest exporter (99.7%)
2014	12,390.00	0.64	Australia, Singapore	Singapore was the highest exporter (93%)
2015	4,371.00	0.34	China, China, Hong Kong SAR, Italy, Japan, Rep. of Korea, Singapore	Italy was the highest exporter (59%)
2016	11,190.00	0.11	China, Japan, Rep. of Korea, Singapore, UK, USA	USA was the highest exporter (61%)
2017	49,536.00	2.07	USA, Turkey, Singapore, Rep. of Korea, Netherlands, Japan, France, China	Republic of Korea was the highest exporter (53%)
2018	6,855.00	0.19	USA, UK, Singapore, Rep. of Korea, Malaysia, Lithuania, Japan, China	Singapore was the highest exporter (65%)
2019	194,429.00	708.66	USA, UAE, Thailand, Singapore, Rep. of Korea, Japan, China, Austria, Australia	Thailand was the highest exporter (85%)
2020	436,841.00	4,136.16	USA, Thailand, Singapore, Rep. of Korea, Norway, Malaysia, Japan, Czechia, China, Hong Kong SAR Australia	Thailand was the highest exporter (99%)
2021	799,147.00	4,033.44	Viet Nam, USA, Thailand, Singapore, Rep. of Korea, Netherlands, Malaysia, Japan, Czechia, China	Thailand was the highest exporter (97%)

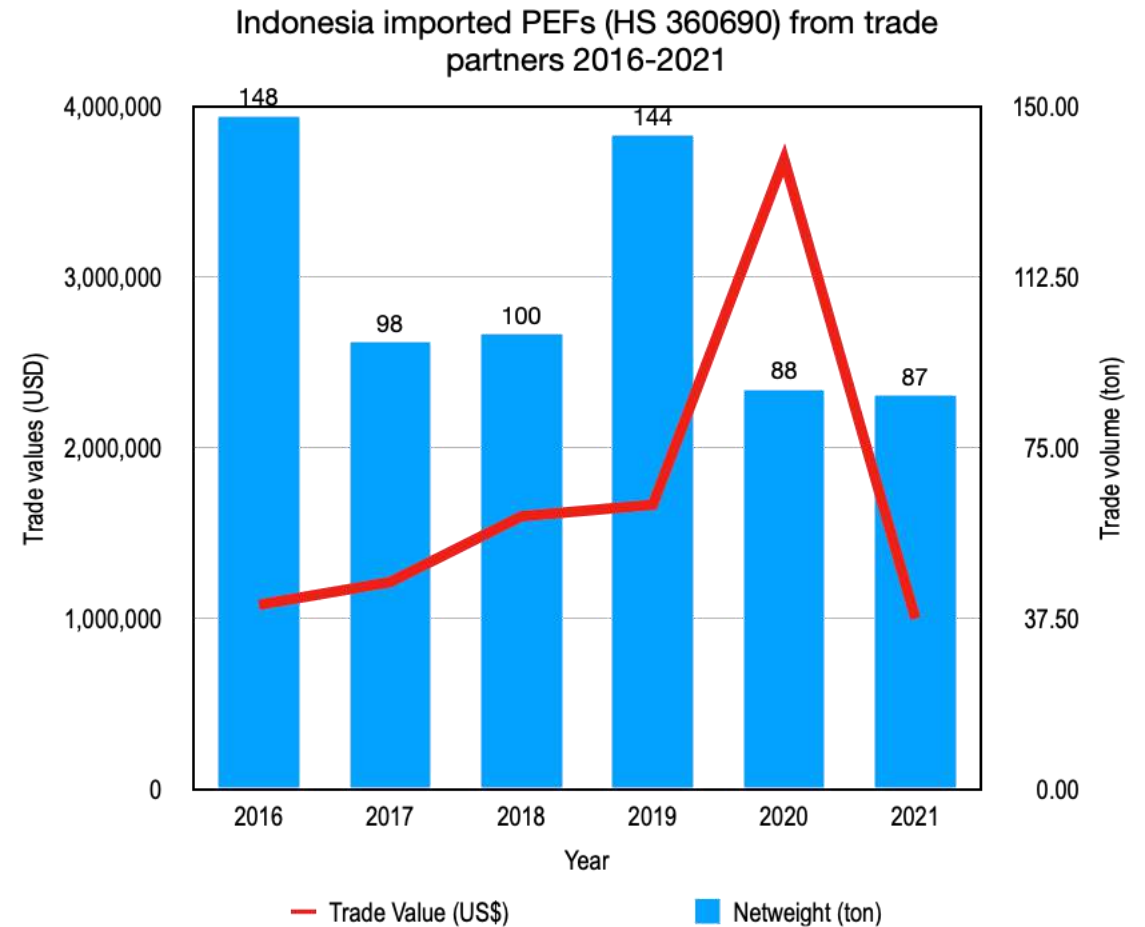


Source: UN Comtrade

Indonesia imported PEFs (HS360690) 2016-2021

Year	Trade Value (US\$)	Net weight (ton)	Trade partners
2016	1,081,949	147.93	USA, Singapore, Rep. of Korea, Philippines, Other Asia, nes, Malaysia, Japan, Italy, India, Germany, China, Belgium, Austria, Australia
2017	1,214,938	98.38	USA, Singapore, Rep. of Korea, Philippines, Other Asia, nes, Malaysia, Japan, Italy, China, Hong Kong SAR China, Australia
2018	1,600,111	100.01	USA, Singapore, Rep. of Korea, Philippines, Other Asia, nes, Japan, Italy, Indonesia, Germany, Denmark, China, Hong Kong SAR China, Austria, Australia
2019	1,667,745	143.73	USA, United Kingdom, Spain, Singapore, Rep. of Korea, Other Asia, nes, Malaysia, Japan, Italy, India, France, China, Hong Kong SAR China
2020	3,686,791	87.98	USA, Singapore, Rep. of Korea, Other Asia, nes, Malaysia,, Lithuania, Japan, Italy, France, China, Hong Kong SAR, China, Austria, Australia
2021	1,001,302	86.59	Austria, China, Italy, Japan, Other Asia, nes, Poland, Singapore, Viet Nam, United Kingdom, USA

Source: UN Comtrade database, 2022



Allocate funds to improve waste management system as a whole and Zero Waste approach.

Prohibit the importation of waste for alternative fuels under HS codes 3825 and 360690.

Implement Basel Amendments effectively and strengthen the border check.

Strengthen emission standards for thermal treatment facilities.

Increase the capacity of environmental laboratory to analyse dioxins and other POPs chemicals.

No RDF production facilities in residential areas and use for SMEs.

Publish the roadmap of circular economy for paper and plastic industry

Voluntary SNI is useless. Make it mandatory and enforced by a ministerial regulation.

No subsidies should be given to RDF or WTE projects

Recommendations



Thank you

yuyun@nexus3foundation.org

Plastics & Refuse-Derived Fuel: Fuel Product or Plastic Waste Export?



9 June 2022 | 18:15 - 19:45 CEST

AGENDA

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- Lia ESQUILLO | Programs and Policy Coordinator, IPEN | Moderator

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- **Waste Export Bans and RDF Trade**

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COPs PLASTICS FORUM



**GENEVA
BEAT PLASTIC POLLUTION
DIALOGUES**

Refuse-Derived Fuel in Malaysia



Mageswari Sangaralingam
Senior Research Officer
Consumers' Association of Penang

Consumers' Association of Penang

Persatuan Pengguna-Pengguna Pulau Pinang

MALAYSIA:
REPACKAGED WASTE IMPORTS
CASE STUDY OF PROCESSED
ENGINEERED FUEL

March 2022



- Established in 1969
- Promotes critical awareness and action among people in order to uphold consumer rights and interests.
- CAP's activities are conducted from its office in Penang, engaging in education, community mobilisation, research, advocacy, training and publication.

For more info: <https://consumer.org.my>

First RDF plant in Malaysia: A failure



- Developed in 2006 in Semenyih, Selangor.
- Capacity 1,000 tons/day MSW; 8.9MW electricity
- 2007 - Complaints of odour, plant not fully operating.
- Company suffered loss.
- Finally shut down in 2015

<https://www.industryabout.com/country-territories-3/2221-malaysia/waste-to-energy/34769-kajang-incineration-plant-shutdown>

Australia's waste exports to Malaysia



<https://www.youtube.com/watch?v=lqrlEsPoyJk>
60 Minutes Australia, 15 April 2019

Malaysia to send up to 100 tonnes of plastic waste back to Australia

Environment minister says recycling sent from Australia included plastic bottles that were 'full of maggots'



Malaysia cracks down on imported plastic - video

The Malaysian government will send back up to 100 tonnes of Australian plastic waste because it was too contaminated to recycle, but will not yet name the companies responsible.

The Guardian 29 May 2019

Tracking waste trade

Harmonized system (HS) codes

- **HS 3915** for **Waste, parings and scrap, of plastics.**

There is a whole range of associated categories of plastic waste under this category for different polymers and types of waste. 3915 is the base code with additional numbers added to this to describe the different categories of plastic waste.

- **HS 3825** for **Residual products** of the chemical or allied industries, not elsewhere specified or included; municipal waste; sewage sludge; other wastes Whole range of different categories of residual waste products classified under this base code.

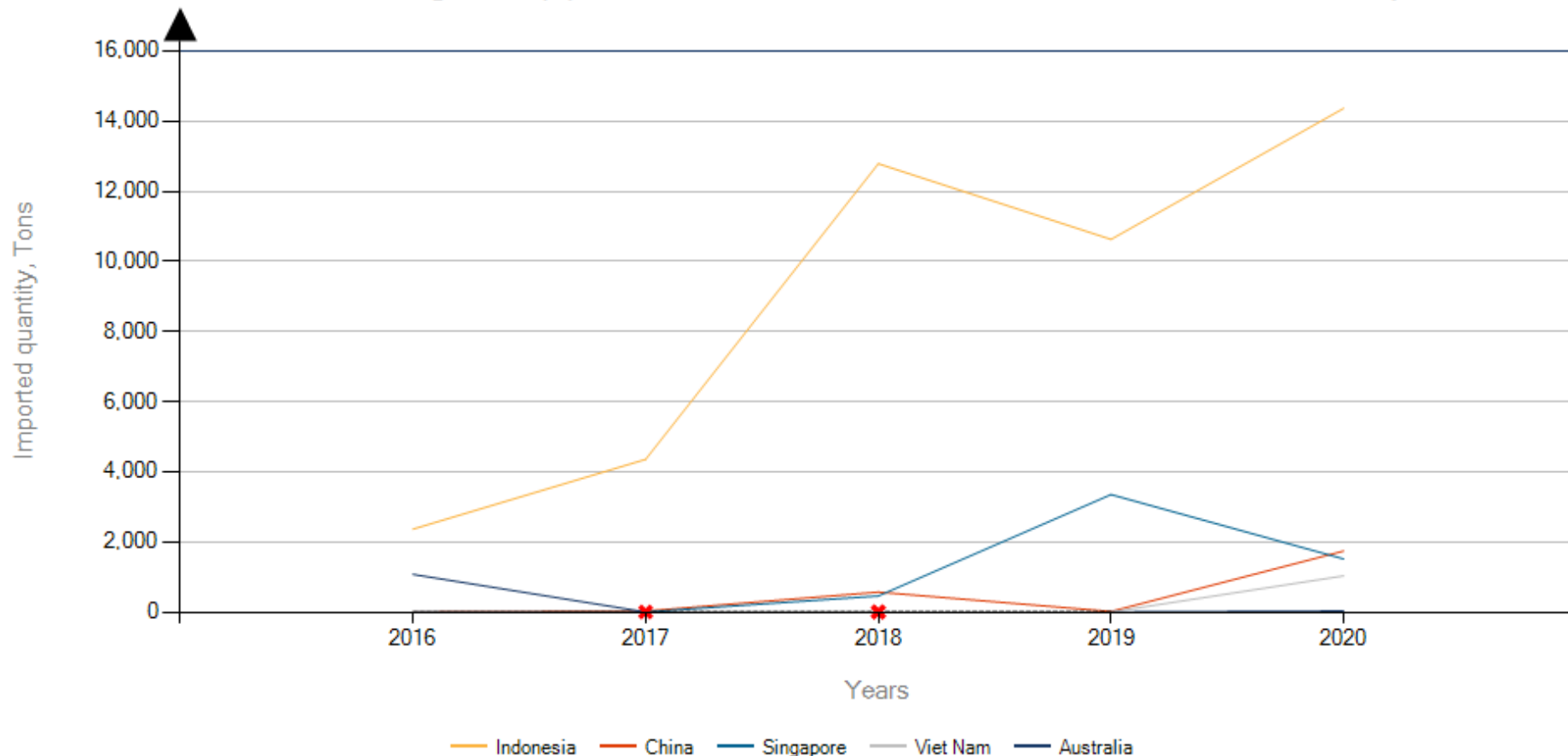
- **HS 3825.10** is the code for **refuse derived fuel**

- **HS 3606.90.10** code for **processed engineered fuel**
(Singapore Customs ruling in June 2015)

HS 3825 imports to Malaysia

List of supplying markets for a product imported by Malaysia

Product: 3825 Residual products of the chemical or allied industries, n.e.s.; municipal waste; sewage sludge; clinical waste, waste organic solvents, wastes of metal pickling liquors, of hydraulic fluids, brake fluids and anti-freeze fluids and other wastes from chemical or allied industries (excluding wastes containing mainly petroleum oils or oils obtained from bituminous minerals)



Australia's waste export to Malaysia

HS 3915 Plastic waste	
Year	Quantity (kg)
2014	13,996,138
2015	16,762,437
2016	10,021,294
2017	32,199,160
2018	44,992,549
2019	32,332,830
2020	32,504,460

HS 360690 PEF	
Year	Quantity (kg)
2014	14,341,959
2015	5,435,249
2016	-
2017	-
2018	-
2019	-
2020	-

No more PEF from Australia since 2015?



Is Australia banning waste exports?



The Sydney Morning Herald

More than 14 million tonnes of plastic end up in the ocean every year. AP

Federal Environment Minister Sussan Ley said she wants other countries to ban plastic waste exports to “tackle the ghostly walls of death that litter Australian and international waters”.

“I would like to see more nations follow Australia’s lead and regulate their plastic waste, so it is not shipped offshore – where it becomes another country’s problem, lying in landfill or in our oceans – where it destroys marine life and precious marine environments,” Ms Ley said.

UN: Australia pushes for plastic export ban in pollution crisis
The Sydney Morning Herald. 13 Feb 2022

Plastic



We have regulated the export of waste plastic since **1 July 2021**.

[Find out more about exporting plastic waste.](#)

Tyres



We have regulated the export of waste tyres since **1 December 2021**.

[Find out more about exporting tyres waste.](#)

Paper and cardboard



We will start to regulate waste paper and cardboard on **1 July 2024**. From this date, you will only be able to export paper and cardboard that is processed or sorted to specific requirements.

Hazardous waste



Separate requirements apply for the export of hazardous waste.

Check the export requirements for [hazardous waste](#).

Australian Government: Department of
Agriculture, Waste and the Environment
<https://www.awe.gov.au/environment/protection/waste/exports>

Australia's Plastic Rules

Phases

The Plastic Rules come into effect in two phases:

From **1 July 2021**, you can only export waste plastics that have been:

- sorted into single resin or polymer type, or
- processed with other materials into processed engineered fuel.

You will no longer be able to export mixed waste plastics.

From **1 July 2022**, you can only export waste plastics that have been:

- sorted into single resin or polymer type and further processed, for example flaked or pelletised, or
- processed with other materials into processed engineered fuel.



Processed engineered fuel
<https://awre.com.au/recycling/processed-engineered-fuel/>

<https://www.awe.gov.au/environment/protection/waste/exports/plastic>

Tyres that can be exported from Australia

Tyres you can export

From 1 December 2021, you can export the following waste tyres **if you have a waste export licence**:

- tyres that have been processed into shreds or crumb of not more than 150 millimetres for use as tyre derived fuel
- tyres for retread by an appropriate retreading facility, for example, one that is verified by Tyre Stewardship Australia's Foreign End Market program
- tyres to an appropriate importer for re-use as a second-hand tyre on a vehicle
- tyres that have been processed into shreds, crumbs (when the shred or crumb are not for use as tyre derived fuel), buffings or granules.

<https://www.awe.gov.au/environment/protection/waste/exports/tyres>

Imported tyre derived fuel (TDF) in flames



A pile of crumb rubber blazing in flames,
Teluk Panglima Garang, Kuala Langat, Selangor
- The Star Metro online (27 June 2021)



Dept of Environment officer taking samples
- KOSMO online (27 June 2021)

Waste tyre exports from Australia

Illegal structures at private jetty to be torn down

Bernama - June 29, 2021 10:10 PM

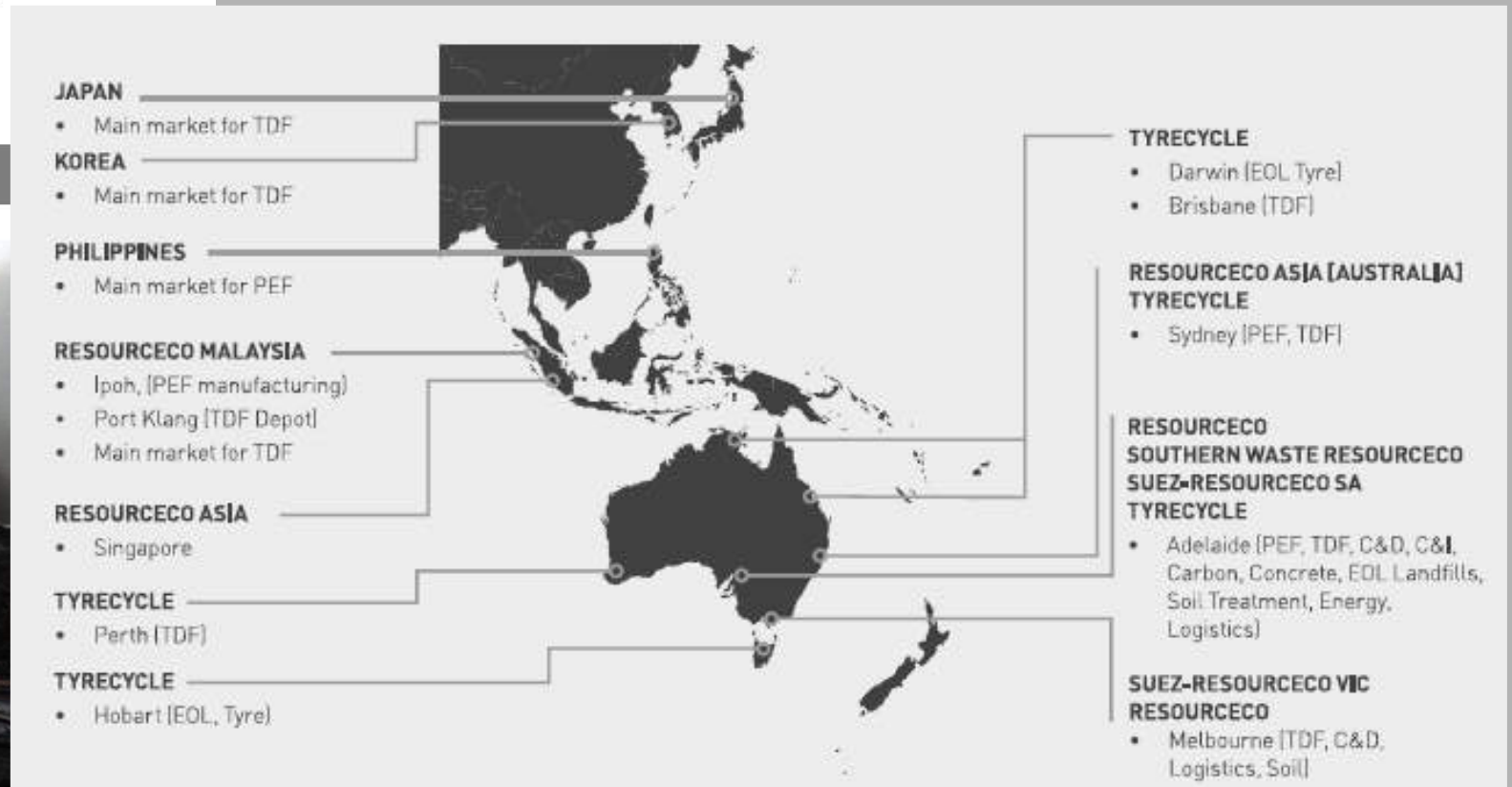
110
Shares



89



16



Hee said it was learnt that the warehouse owner had a valid approved permit (AP) where the shredded tyres were shipped from Australia to be used as fuel for a plastic recycling factory in Chemor, Perak and a cement factory in Langkawi, Kedah.

Malaysia's policy

Putrajaya studying plastic trash-for-fuel tech to clear illegal dump sites

Published 2 days ago on 17 July 2019
BY JOHN BUNYAN



Housing and Local Government Minister Zuraiddin visits alternative fuel manufacturer ResourceCo Asia in Chemor July 17, 2019. — Picture by Farhan Najib

IPOH, July 17 — The Housing and Local Government Ministry is looking to tap the mountains of plastic trash in the country as an alternative fuel and source for producing cement, Zuraiddin said today.

The minister said the technology known as processed engineered fuel (PEF) could help the government cut down the illegal plastic garbage pile nationwide.



Waste to fuel



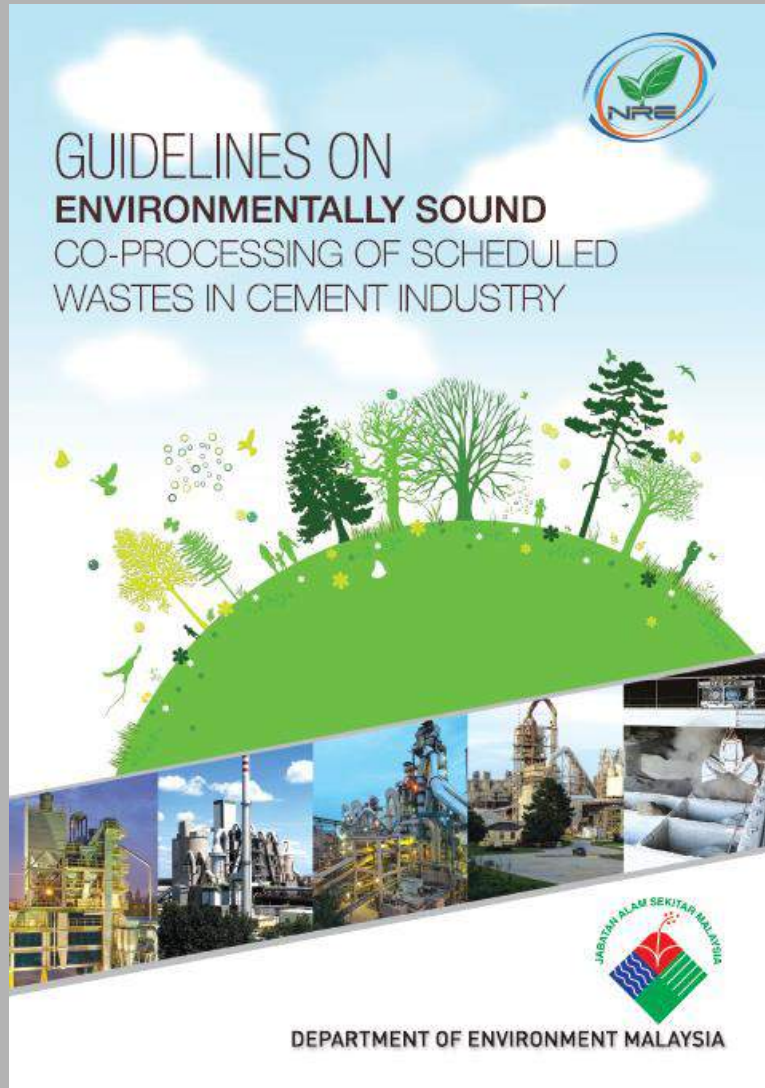
Cement plants co-processing waste in Malaysia

Nine cement plants in Malaysia are co-processing waste such as PEF, TDF, RDF, scheduled (hazardous) waste, fly ash, copper slag, saw dust, soap sludge, fluid cracking catalyst.

1. Pahang Cement Sdn. Bhd. Bukit Sagu, Kuantan, Pahang
2. Perak Hanjoong Simen Sdn. Bhd. Padang Rengas, Kuala Kangsar, Perak
3. Tasek Corporation Berhad, Ipoh, Perak
4. Associated Pan Malaysia Cement Sdn. Bhd. Jalan Kuala Kangsar, Perak
5. Hume Cement Sdn Bhd, Gopeng, Perak
6. Negeri Sembilan Cement Industries Sdn Bhd (Perlis Plant) Bukit Keteri, Chuping, Perlis
7. Negeri Sembilan Cement Industries Sdn. Bhd. (Kp) Bahau, Negeri Sembilan
8. CMS Cement Industries Sdn Bhd. Kuching, Sarawak
9. CMS Cement Industries Sdn Bhd. Bintulu, Sarawak

<https://www.doe.gov.my/senarai-kilang-simen-yang-menjalankan-aktiviti-co-prosprocessing/>

Malaysia Guidelines on Co-processing: Emissions monitoring



Emissions monitoring

To accurately quantify the emissions, continuous measurements is BAT for the following parameters (UNEP, 2007):

- (a) Exhaust gas flow rate;
- (b) Moisture (humidity);
- (c) Temperature;
- (d) Dust (particulate matter);
- (e) O₂;
- (f) NO_x;
- (g) SO₂;
- (h) CO.

Continuous measurement of TOC is also recommended. The operator should assure proper calibration, maintenance, and operation of the continuous emission monitoring systems (CEMS). A quality assurance programme should be established to evaluate and monitor CEMS performance on a continual basis.

Periodical monitoring at a minimum once per year is appropriate for the following substances:

- (a) Metals (Hg, Cd, Tl, As, Sb, Pb, Cr, Co, Cu, Mn, Ni, V) and their compounds;
- (b) HCl;
- (c) HF;
- (d) NH₃;
- (e) PCDDs/PCDFs.

Our demands

- **Prevent dumping:** End waste colonialism
- **Ban trade** of waste-based fuels
- Ensure full **traceability** and **transparency** of waste shipments
- Reinforce **monitoring** and **enforcement** measures to **stop illegal waste trade**
- **Prioritise reduction.**
- **NO false solutions.**

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

RECOMMENDATIONS

1. As clarified in the Global Alliance for Incinerator Alternatives'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.

THANK YOU

Contact Details

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11600 PULAU PINANG, Malaysia
Email: magesling@gmail.com**

Plastics & Refuse-Derived Fuel: Fuel Product or Plastic Waste Export?



9 June 2022 | 18:15 - 19:45 CEST

AGENDA

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- Lia ESQUILLO | Programs and Policy Coordinator, IPEN | Moderator

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- **Waste Export Bans and RDF Trade**

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COPs PLASTICS FORUM



**GENEVA
BEAT PLASTIC POLLUTION
DIALOGUES**



RDF and the Basel Convention



The Burning Questions:

→ ***Does RDF escape Basel Convention Controls?***

Wastes “Controlled” under Basel must first be wastes. And then they can either be “hazardous wastes” (Annex VII, Annex I and III) or they can be “other” wastes (Annex II).

So there are two ways to fall *outside* of controls....

→ You can declare your material to be a non-waste; or

→ Or you can say it’s a waste but is neither a hazardous waste nor an Annex II waste.

The Burning Questions:

- Is RDF a waste?
- And, if so, is it a hazardous waste?
- And if not, is it on Annex II – other waste?





The Burning Questions:

Waste?

- “Wastes” are defined as “substances or objects that are disposed of or required to be disposed of.
- “Disposal” is defined as materials or objects destined for any of the operations on Annex IV of the Convention.
- Annex IV includes R1 "Use as a Fuel". So, on the face of it, this would appear to clearly be a waste.
- Certainly, the EU has called it such: it is in the waste catalog as 19 12 10 – “combustible waste (refuse derived fuel)”



The Burning Questions:

When Waste Ceases to be a Waste Criteria

- However, in that regard, one would need to beware various country policies on “when waste ceases to be a waste”.
- Basel does not have such criteria but certain countries do.
- Countries could decide that wastes, once they are processed and made into RDF, cease to be a waste.



The Burning Questions:

Hazardous Waste?

- Annex VIII is a list of wastes *presumed to be hazardous*, but the real test is:

Does the material contain an Annex I hazardous constituent and possess a hazardous characteristic found in Annex III at the same time?



The Burning Questions:

Hazardous Waste?

- RDF is not found on Annex VIII.
- So, does it have an Annex I (hazardous constituent) with an Annex III (hazardous characteristic)?
- If the RDF had e.g. heavy metals or pesticides in it... Then yes.
- But, as this waste is derived from households/commercial waste pick-ups...we really don't know what people might have thrown in their garbage at any given time.
- No certainty then for RDF without extensive / constant testing.

The Burning Questions:

Other Waste (Annex II)?

- It was in part because of this kind of uncertainty over some types of wastes that Annex II was created.
- So, when we go to Annex II we can see very plainly we have Y46 – “Wastes collected from households”
- But....some might argue its not always collected from households -- production or commercial sources are possible.
- Some might argue that RDF has been manipulated (proportions of waste changed) so its no longer wastes collected from households.



The Burning Questions:

Other Waste (Annex II)?

- If its not Y46, it could then be Y48 (mixed and contaminated plastics)
- Usually there is significant amounts of plastic in RDF for the calorific value...
- But....some might argue RDF is really not a plastic waste.



Cold Hard Facts

Basel Waste?

- RDF is fairly clearly a waste at global level
- But, at National level some might claim it has been processed and thus ceases to be a waste and is now a product.
- And, unless you can prove it, its likely not to be considered a hazardous waste.
- And, it may very well fall through the cracks of Annex II.
- The current ambiguity is ripe for exploitation.



Recommendations

- RDF should be nominated by a Party for entry into Annex VIII *or at the very least* -- Annex II and then a Guidance Doc.
- People should cease the “caveman” mentality of Burning Wastes -- its killing the planet with CO² and other emissions.
- Countries and local governments should begin to pass measures to forbid production of RDF and other waste burning operations.
- It is not ESM.



Thank You!

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**GENEVA
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CLOSING REMARKS



COPs PLASTICS FORUM



**GENEVA
BEAT PLASTIC POLLUTION
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COPs SIDE EVENT

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9 June 2022 | 18:15 - 19:45 CEST

THANK YOU!



Lee BELL



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Executive Director and Founder, Basel
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Lia ESQUILLO



Programs and Policy Coordinator, IPEN |
Moderator



WHAT'S NEXT?

 genevaenvironmentnetwork.org



EVENT | CONFERENCE

'Chemical recycling' of plastics - What is it and what impacts for the environment? | BRS COPs Side Event

10 JUN 2022 13:15 - 14:45

CICG | Room C & Online

🕒 Chemicals and Pollution

🕒 SDG3 | SDG12



EVENT | CONFERENCE

The Basel Plastics Amendments: The First Year Report Card | BRS COPs Side Event

13 JUN 2022 18:15 - 19:45

CICG | Room 14 & Online

Basel Action Network

🕒 Chemicals and Pollution

🕒 SDG3 | SDG12



EVENT | VIRTUAL

The Rights Holders' Challenges Facing Climate Change | HRC50 Side Event

24 JUN 2022 13:30 - 15:00

Online | Webex

GeCCco, GEN

🕒 Human Rights and Environment | Climate

🕒 SDG13



COPs SIDE EVENT



9 JUNE 2022 | 18:15 - 19:45 CEST

PLASTICS & REFUSE-DERIVED FUEL: FUEL PRODUCT OR PLASTIC WASTE EXPORT?

>>> tiny.cc/GENgJunePlasticWaste

GENEVA
BEAT PLASTIC POLLUTION
DIALOGUES



TESS

Forum on Trade,
Environment and the SDGs



UNIVERSITÉ
DE GENÈVE



Permanent Mission of Norway
Geneva



Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra