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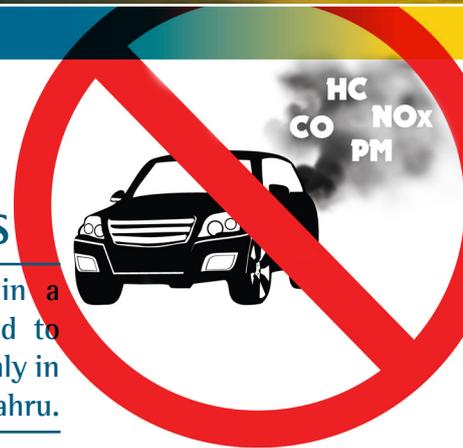
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Guided Self-Regulation (GSR): A New Approach to Control Motor Vehicle Emissions

The rapid growth in economic development and population has resulted in a significant increase in demand for transportation. Rapid urbanisation has led to increased levels of air pollution and a consequent deterioration in air quality, mainly in several major cities in Malaysia such as Kuala Lumpur, Georgetown and Johor Bahru.



According to the Road Transport Department (RTD), the number of registered vehicles in Malaysia has increased at an annual average of 6-10%. Essentially, the transport sector is an important component of the social economy and is regarded as a common benchmark for development. However, this development in modes of travel and in the transport network needs to be balanced with protection and preservation of the environment. The development of transportation that is environmentally sustainable has been an over-riding aim of the Department of Environment (DOE) which has introduced legislation to control pollution from motor vehicles. Since 1996, the Environmental Quality Act, 1974 and Regulations have been in force to control emissions from motor vehicles as well as the quality of automotive fuel properties.

Limitations of the Environmental Quality Act 1974

From the time of implementation of the Environmental Quality Act 1974, the DOE has conducted roadside inspection programs for all petrol- and diesel-driven vehicles. The vehicle inspection programs reveal a clear indication of compliance to emission standards. According to the DOE Annual Report, both petrol and diesel engines have recorded more than 98% compliance with the standards over the past 5 years.

However, the astonishing pace at which the number of motor vehicles is growing has also led to traffic and environmental problems such as an increase in urban traffic congestion and environmental pollution. Therefore, the current approach to control emissions is found to be no longer effective and efficient because of constraints in manpower for enforcement, an increase in operating cost, and health hazards to DOE's enforcement officers as they are exposed to pollution, hot weather and safety issues at the roadside. For long term results, new strategies and a creative approach need to be adopted to control motor vehicle emission as there has been greater sophistication in the technology used to control

emission from vehicles as the vehicles themselves are more advanced and incline towards green 'eco drive' and energy efficiency.

Guided Self-Regulation (GSR)

Guided Self-Regulation (GSR) has been identified and proposed as a new approach to control emission from motor vehicles. The DOE has been practising GSR in controlling point source pollution, as in the case of the industrial sector where they have given industry the responsibility of maintaining pollution control equipment and monitoring closely the compliance of their emission standards.

The DOE has improved on existing standard operating procedures and adopted the GSR approach as the best available way to control pollution from motor vehicles. The GSR approach has targeted greater responsibility on the part of the owner of the vehicles to do maintenance and inspection (M&I) of their own vehicles.

Under the GSR approach, the current operation of the video camera and observation of smoke from vehicles will be stepped up. This operation has been found very effective to control smoke-emitting vehicles as the operation needs minimum manpower and the number of vehicles observed at any one particular time is relatively greater compared to roadside inspections. For this operation, those vehicles that are caught emitting excess smoke would receive a written notice from the DOE state office. The vehicle owners are required to conduct emission testing in designated PUSPAKOM testing centres. For those who do not comply with the written notice, more stringent enforcement action will be taken, e.g. prosecution in court.

The current regulations for controlling emission from motor vehicles have defined a fleet operator (FO) as

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Re-Understanding Enforcement



The way forward for DOE Enforcement will be based on Attitude, Skills and Knowledge (ASK) to ensure regulatory compliance on a sustained basis. To achieve this, DOE has a strategic plan which is based on a goal of self-regulation. Self-regulation has been adopted by the Department of Environment (DOE) as a long-term goal and this will be achieved by inculcating a culture of ownership within the regulated sectors through mainstreaming of the environmental agenda.

The self-regulation approach to pollution control is described as 'guided self-regulation'. Under Guided Self-Regulation (GSR), the regulated sectors (primarily, the industries and project proponents) are "taken by the hand" so to speak, towards achieving the goal of self-regulation through environmental mainstreaming tools. With this guidance, they should be able to take greater initiatives in the environmental management of their own sectors.

Environmental Mainstreaming

Environmental mainstreaming refers to the infusion (embracing) of the environmental agenda at all levels of the organisational structure in the regulated sectors. Success in environmental management results from the collaborative efforts of all key personnel in the organisation playing their role in an effective manner. For self-regulation to work, environmental responsibility must be felt and discharged not only by the very top person, but down to the general workers of the organisation.

The Environmental Mainstreaming Tools consist of eight elements and are required to be implemented in most industrial manufacturing companies:

1. Formulate Company's /Industry's Environmental Revised Policy
2. Employ Certified, Competent Person (Qualified person- Environmental Officer)
3. Establish Permanent Environmental Management & Decision Making Process Committees for Company/Industry
 - Environmental Regulatory Compliance Monitoring Committee –Chaired by CEO
 - Environmental Performance Monitoring Committee – Chaired by a senior management official
4. Establish Monitoring Facilities & Instruments
 - Establish company's mini laboratory
5. Establish Maintenance of Records
 - Record keeping system
6. Regular Data Analysis and Interpretation
 - Includes method of sampling & analysis and corrective actions
7. Regular Reporting & Communication
 - Includes real time reporting
8. Future System Improvements
 - Provide sufficient Budget allocation to strengthen organisational set-up, set in place a system and infrastructure (hardware, software) including a reasonable implementation schedule in order to improve regulatory compliance and corporate environmental image of the industry

CAC (Command and Control) vs GSR (Guided Self-Regulation)

In the CAC approach, the emphasis of enforcement is on Compliance Monitoring (CM) = Final Discharge. In the GSR approach, the enforcement emphasis is on Performance Monitoring (PM) = Upstream of Final Discharge or Each Unit Operation/Unit Process

GSR complements the CAC approach and it is therefore vital that DOE shifts from CAC towards GSR for several reasons:

1. Positive Corporate Image
 - The image of the country in the eyes of investors is at stake if non-compliant industries are taken to court
 - Pre-empts factory or project developers' downtime and prevents heavy monetary penalties
2. Snapshot inspection
 - Enables immediate action based on 'snapshot' information resulting in highly responsible industries which are fully hands-on.
3. Positive culture
 - Under the practice of self-regulating performance through environmental mainstreaming, not only is attention paid to the environment at the policy level but at every stage of production.

Self-Regulation Approach

In self-regulation, industries or project proponents take ownership in enforcing environmental laws to meet their environmental obligations, that is Do-it- Yourself (DIY) which is a 'hands-on' approach to achieve environmental compliance.

The new approach to enforcement by DOE is through desktop enforcement which means that the DOE Officer will undertake a systematic assessment of compliance to the EQA 1974. The project proponent will respond to the report through the monitoring system of the actions taken on the report. The DOE officer will check and undertake enforcement action, if necessary. The monitoring system that has been developed includes the following

1. OER (Online Environmental Report)
 - to monitor effluent discharge
2. CEMS (Continuous Emission Monitoring System)
 - to monitor air emission
3. E-Swiss (electronic scheduled waste information system)
 - to monitor the movement of scheduled wastes
4. EKAS
 - (Elektronik Kawalan Alam Sekitar)
 - to identify production information

Facilitating Compliance

The act of facilitating by the DOE means that the regulated sectors are assisted towards regulatory compliance through the platform of DOE-regulated sector engagements, issuance of guidance documents, etc. How does DOE facilitate the regulated sector? DOE facilitates the regulated sector towards compliance through a certification program that teaches project proponents how to understand the law, how to monitor and operate pollution control systems properly, how to analyse and interpret data, how to keep records, etc., as well as exposes them to sampling criteria and planning (sampling type, location and frequency), and how to report (to CEO & DOE).

After all the teaching and training, industries/project proponents do not have any excuses not to comply with the EQA 1974. If they still flout the law, then DOE has no other choice but to compound them, or take them to court, or issue a prohibition order!

DOE aims to achieve all these objectives through this principle: Achieving Self-regulation by Facilitating Compliance through Environmental Mainstreaming.

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a company, firm, society or other body of persons, or any person who owns and operates 10 units or more motor vehicles. A FO must now operate and maintain an approved facility. This means the fleet operator must be equipped with the necessary smoke meter for diesel engines or gas analyser for petrol engines and must have at least a trained personnel for carrying out the emission testing to monitor their vehicles. Under the GSR approach, the DOE will strengthen enforcement against the FOs throughout the country. The DOE will also identify and engage the new FOs, especially those with heavy vehicles which are more than 3.5 tonnes, to be equipped with the necessary equipment, conduct inspection and have in place a maintenance (I/M) program to monitor and control emission from their vehicles. Essentially, the I/M program has the potential to significantly reduce emissions of Carbon Monoxide (CO), Hydrocarbon (HC), Nitrous Oxide (NOx), Particulate Matter (PM) and smoke from the vehicles.

Authorised Testing Centre (ATC)

As part of the GSR approach to control emission from motor vehicles, 'Approved Facilities' or 'Kemudahan Yang Diluluskan (KYDL)' like PUSPAKOM should improve their current role to become an Authorised Testing Centre (ATC). The Authorised Testing Centre will be authorised to conduct tests on the smoke-emitting vehicles which have been 'caught' on DOE's Video Camera or in an Observation Operation or in any other operation that they have conducted. All the test results at the ATC should be recorded and provided to the DOE. The records of the emission testing could be used for analysis and evaluation and development of policy and aid further decision making on the part of the DOE. The DOE may use the collected data to undertake further analysis and identify options or develop better strategies for controlling pollution from transportation, such as the mandatory retirement of old vehicles, implementing alternative fuels,

introducing more stringent emission standards or initiating incentive programs to encourage freight operators to change to better fuel efficiency engines in their daily operations.

Vehicle Inspection and Maintenance (IM) programs help to improve air quality by identifying high pollutant emitting vehicles that need to be repaired. The inspection may be through visual inspection, emission testing, or more precisely identified from a vehicle's on-board diagnosis system. Servicing and maintaining a vehicle in good condition requires a combination of these inspection activities on the vehicles. Good I/M programs are very important to keep the vehicle in good operating condition and in compliance with the emission standards. To ensure good I/M programs, the Vehicle Service Centres (VSCs) should play a very important role in giving good advice, consultations and services to vehicle owners.

Vehicle Service Centres (VSCs)

Currently, most Vehicle Service Centres (VSCs) in Malaysia only perform service and routine checks on the vehicles without carrying out any inspection on vehicle emissions. Currently, the service only covers replacing the oil filter, engine oil, spark plugs, etc. What this means is that vehicles that have been serviced and maintained by service centres do not know if they have complied with DOE's emission standards. In this case, the service centre should improve their current service offerings by having testing equipment such as smoke or opacity meter for diesel engine, and carbon monoxide/hydrocarbon (CO/HC) gas analyser for petrol engine; also trained personnel to conduct the exhaust emission testing on the motor vehicles. In this regard, all testing results should be recorded and conveyed to DOE where it will be centralised in its database system for monitoring purposes. One of the main outcomes expected from giving a greater role for the VSC in the GSR approach is that the individual vehicle owners will be



more confident with the quality of service and maintenance at the service centre and also be more certain of the vehicle's emission compliance.

More Effective Monitoring

Motor vehicle emissions control and enforcement programs in Malaysia need to be improved from the current command and control (C&C) approach to a guided self-regulation (GSR) approach. This new approach proposed by the DOE will ensure that all types of vehicles registered in Malaysia will be monitored more effectively resulting in 'hands-on' emission compliance by the vehicle owner. The GSR approach is essential to develop a positive culture among Malaysians to take ownership of environmental laws so as to fulfil the environmental obligation towards sustainable development and preservation of the quality of the environment.

Therefore, to ensure the success of this program, both the government agencies and the private sector should play their role and give wholehearted support. Each level of society should have a sense of belonging and work towards protecting and preserving the environment for future generations. Eventually we should be able to meet the goal for resilient and sustainable development of our nation.

Source

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New Clean Air Regulations: How it Impacts Industry in Malaysia

The new clean air regulations “Environmental Quality (Clean Air) Regulations of 2014” is the first major revision of the previous act of 1978. The new regulation is the end-product of a lengthy process the industry has been engaged with DOE for over 10 years before it was gazetted. The air pollution limits have been reduced in line with internationally acceptable limits, and as such may result in some limits being perceived as strict, and difficult to comply with. The reality is that even though we are striving for sustainability in our economic endeavours, the environment is continuously under more pressure because of our industrial activities.

Existing industries have five years (starting from the time of the publication of the new regulations) to comply. Our first reaction to this is most probably despair at the thought of new investments in Air Pollution Control Equipment (APCE) and a look at how it will affect the bottom line of our balance sheet. The good news is that it does not have to negatively affect our bottom line at all. What is going to make the difference is how we look at the Air Pollution Control Equipment and our industrial process. The old way of thinking is that we put a “black box” just before the chimney to take out whatever pollutants we have. This means the end-user transfers responsibility of the air emissions to the equipment supplier. It is convenient, but usually very expensive.

Re-evaluating the Processes that Generate Pollution

The better way of doing it is to re-evaluate the process generating the pollution, optimising it with the air pollution limits in mind, and then choosing the most cost effective technology to solve a well-defined air pollution problem. This not only reduces the cost of the APCE, but also increases production efficiency and saves big on operation cost, not only for the control equipment, but also for the process. Biomass boilers are a good example (De Kock, 2015).

Take note that by reducing the fuel burnt, we are directly reducing the amount of ash, by the same percentage.

In addition to fuel consumption, the study also shows the reduced outlet emission after the installation of a high efficiency dust collector to eliminate soot and VOCs. It suggests a 62% reduction in outlet emission by controlling the boiler combustion, maintaining the desired air/fuel ratio and ensuring the furnace draft is controlled to a “natural draft” condition.

Table 1. Study on biomass boilers in Southeast Asia

Description	Units	Study 1	Study 2	Study 3
Boiler size	[ton/hour]	60	35	25
Fuel		Palm oil fibre and dry shell mix		
Average steam output	[ton/hour]	40	18	14
Average fuel consumption	[ton/hour]	14.4	7.1	6.6
Excess air (extra air to what is needed for combustion, typically 50% for biomass fuel should be sufficient)	[%]	150	193	188
Boiler efficiency at a typical operation	[%]	57	61	50
Boiler efficiency at 50% excess air		62	66	55
Target fuel consumption	[ton/hour]	13.1	6.6	6.0
Fuel consumption reduction	%	8.70%	7.0%	9.0%

Table 2. Reduced outlet emission after installation of a high efficiency dust collector

Description	Units	Study 1	Study 2	Study 3
Boiler Size	[ton/hour]	60	35	25
Implied emission reduction by having a higher boiler efficiency and automated boiler control	[%]	71%	69%	71%
Possible emission if these boilers have been complying to old emission limits because of installation of a high efficiency dust collector (more than 95% dust collection efficiency)	[mg/Nm ³]	116	122	115

Palm oil mill boilers fall under the Second Schedule of the new regulations. Therefore, the facilities need to reduce the particulate emission from the old 400 mg/Nm³ (at 12% CO₂) to 150 mg/Nm³ (at 12% CO₂). Some of these boilers have been fitted with high efficiency dust collectors because of complaints from surrounding villages (De Kock & Yap, 1999). If these boilers above have been complying to the old emission limit and were fitted with high efficiency dust collectors, it means that without investing in any new Air Pollution Equipment, they will be able to reduce the current emission to below the new limit by simply improving on the combustion control. See Table 2 (refers to the same study).

Moving towards Newer Equipment and Technologies?

Many industries, on the other hand, have been operating with a sword over their heads under the old regulations. With ailing equipment, and pressure on costs and production productivity, many industries may now consider investing in newer equipment and technologies. This may well be a good option. Whatever the case may

be, we have to understand another very important part of the new regulations. That is, the requirement to monitor the performance of any APCE installed. In line with modern trends, the DOE has started to implement compulsory performance monitoring. This may range over a spectrum of parameters, including indicators in the APCE equipment and emission monitoring in the stack.

Again, instead of looking at this as an extra burden, we should welcome this requirement as a tool to monitor not only our APCE equipment but our whole plant as well. Automation is not a luxury anymore or a way to reduce reliance on manpower. Automation is the tool for optimising and increasing quality, consistency and output. The figure in the next page illustrates a very basic rule in the industry, again using a boiler as an example.

Sophistication on the process side leads to lower cost of air pollution control equipment both in capital and operational expense, whereas sophistication in the APCE leads to lower emissions, but increased capital and operational costs.

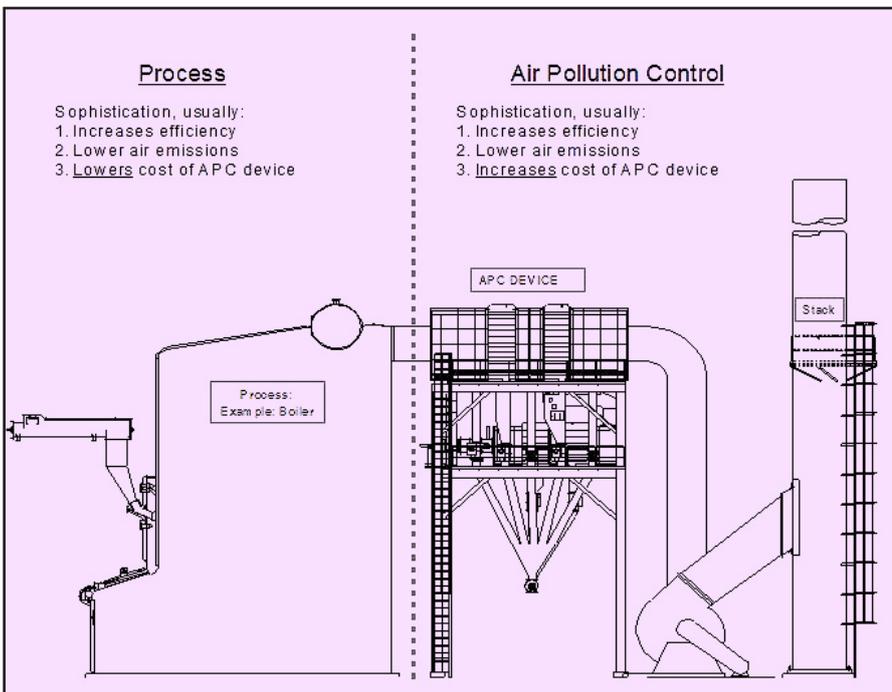


Figure 1. Air pollution control equipment.

We can take a few general examples to test this rule:

Smelting Furnaces

Better hood design leads to more efficient smelting by reducing waste heat, and limits extraction of gases by efficient extraction. This reduces the size of the air pollution control (APC) device.

Chemical Process

Any fume extraction should be done more efficiently to reduce wastage of chemicals, and lower the extraction volume, thus leading to a reduction in size of the APC device.

Conveyor Transfer

Covering the conveyors and building hoods over the transfer points not only reduces the extraction volume, but saves the product being transferred.

Combustion Systems

Controlling the combustion process over a range of operations by spreading the fuel evenly, ensuring the correct air/fuel ratio and favourable combustion conditions reduces fuel consumption, eliminates VOC and soot formation and reduces maintenance cost.

Having said all these, some industries will still find themselves in a situation where the new regulations are extremely strict for the pollutants relevant to them. Some of the schedules require particulate emissions

of less than 5 mg/Nm³. These requirements leave the end-user with little option but to use absolute filters such as specialist fabrics or ceramic filters. In this case, we should consider pre-filtration, which will constitute part of the process, rather than the APC device, to again reduce the operational cost of the sophisticated APC device.

In conclusion, the new clean air regulation will affect the industry in a direct way by dictating better control equipment and better control of our processes. The industry should embrace this opportunity to increase efficiency and adjust to modern practices. This will not only serve the environment well but also reduce our carbon footprint. Above all, it will also ensure that Malaysia remains and develops as the 'first choice' for manufacturing and as a producer of sustainable products.

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Source

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The 2015 Haze: Scenario and Response

Introduction

Of all the various environmental disasters afflicting Southeast Asia today, perennial haze remains one of the most persistent and challenging, given its negative impact on human health and economic development. In 2015, the region faced another episode of haze smoke of unprecedented severity and geographical spread, affecting millions of people in several ASEAN countries, particularly Indonesia, Singapore, Malaysia, Thailand, the southern part of Philippines and the northern part of Lao PDR. Occurring from August to October 2015, the haze was caused by massive and uncontrolled land and forest fires in Sumatra and Kalimantan, Indonesia, largely as a result of intense drought and the devastating impact of the El Nino phenomenon.

Chronology of Events

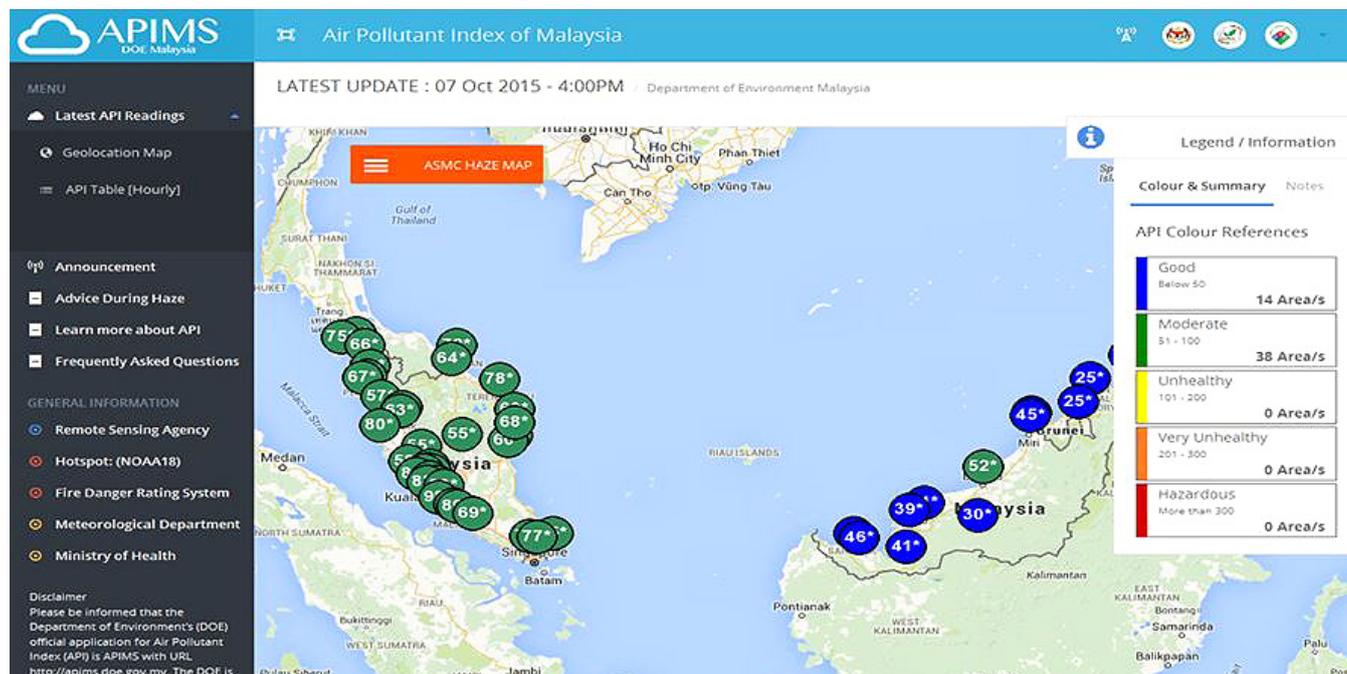
The 2015 haze in Malaysia is referred to as one of the worst episodes since 1997, lasting for more than two months and affecting the whole country. It got worse on 15 September when a total of 34 stations in the country recorded unhealthy levels, breaching 100 in the Air Pollutant Index (API). The haze worsened on 4 October 2015 as the API level rose to hazardous levels (API reading exceeding 300) in Shah Alam, Selangor. The haze was also influenced by four tropical cyclones namely "Djujan", "Mujigae", "Koppu" and "Champi" which caused the wind direction to be consistently blowing southwesterly from the burning areas in Sumatra and Kalimantan, Indonesia resulting in a persistent haze that engulfed the whole of Peninsular Malaysia and West Sarawak in October 2015.

Actions Taken

In accordance with the National Haze Action Plan, several National Haze Committee Meetings were conducted and chaired by YB Dato Sri Dr. Haji Wan Junaidi Tuanku Jaafar, Minister of Natural Resources and Environment (NRE) to coordinate inter-agency action lines in reducing the haze impacts. Among the actions taken by the respective agencies to respond to the haze crisis included the following:

1 The National Security Council (NSC) activated Haze Coordination Management Committee to discuss inter-agency coordination and actions to respond to the worsening haze.

2 Cloud seeding operations by the Malaysian Meteorological Department and Royal Malaysian Air



Thick haze back in southern S'wak

One week of respite ends as Samarahan becomes the worst hit area

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KUCHING: Southern Sarawak is once again blanketed by thick haze after about a week of relatively clear sky.

The air pollution index (API) for Samarahan, 10km from here, was an unhealthy 102 at 2pm yesterday.

In the city centre, the API was 87 in the morning but visibility plummeted to 1.5km by noon.

As the day wore on, the API in Sri Aman – the worst affected by haze in the country last month when the API reached 129 – hovered in the



high 80s.

Only Miri escaped – it had an API of 34.

According to the Asean Specialised Meteorological Centre, much of Kalimantan and Sumatra continued to be shrouded in moderate to dense haze.

It said its satellites detected 124 hotspots in Kalimantan on Monday.

On Sept 4, there were 399 hotspots.

The Singapore-based centre elevated Sumatra's forest fires to Level Three – the most severe – last week after 222 and 380 hotspots were detected on Aug 31 and Sept 1, respectively.

Kalimantan is at Level Two, for exceeding 150 hotspots over two consecutive days.

In its September regional weather and haze review, which was released yesterday, it warned that El Nino conditions were increasingly likely in the coming months.

It said drier-than-normal conditions could be expected, particularly in the southern and eastern parts of South-East Asia.

Forest fires in central Sarawak have been confirmed by the Natural Resources and Environmental Board (NREB).

On Sunday, huge plumes of smoke were sighted along the Bintulu-Bakun road, about 50km from the dam.

An early report said the fires were likely started by longhouse dwellers for hill padi planting.

Sarawak NREB controller Peter Sawal said warnings were issued.

Asked if the residents could face fines, he explained that subsistence farming activities, including open burning, on native customary rights land "were not regulated by law".

"The area was about 2km from the longhouse. Heavy rain doused the fires. There were no more fires when we visited," he said.

The NREB has cancelled all open burning permits since the dry weather began.

Force were conducted from 15 September 2015 to 5 October 2015 in Peninsular Malaysia and West Sarawak to reduce the impact of the haze. A total of eleven operations were conducted in Peninsular Malaysia while five operations were conducted in Western Sarawak.

3

The Ministry of Education announced closure of schools due to the worsening haze resulting in a total of 7,645 schools (accounting for 4,080,971 students) in the areas affected by the haze.

4

The Standard Operating Procedure (SOP) to prevent open burning and peatland fires had been activated since 16 February 2015. Enforcement action on smoky vehicles, emission from industries and earth works activities were further strengthened. The following measures are part of the SOP:

1. Aerial and ground surveillance to curb open burning throughout the country and as well as all hotspots (open fires) detected by satellite image NOAA18 were verified accordingly through ground truthing.

2. Prohibition order on open burning issued by the Director General of Environment for the State of Johor in September 2015 while the prohibition order issued since March 2014 for the states of Selangor, Melaka, Negeri Sembilan, Kuala Lumpur and Putrajaya remained in force. The prohibition applied to all open burning except for crematorium, burning for religious purposes, grill/barbeque and gas flaring.

3. Air quality monitoring was initiated to detect changes in air quality status through a network of 52 monitoring stations nationwide.

4. All sectors were reminded that stern legal action would be taken against culprits or landowners that carry out open burning at construction sites, industrial areas and plantations and dump sites. As for other cases of small fires, individuals were reminded that maximum compounds of RM2000 would be imposed for each spot of open burning case.

5. Notices were issued to all local councils to closely monitor landfill areas under their jurisdiction to prevent open burning.

6. Public awareness and a more aggressive campaign on prohibition of open burning.

At the regional level, Malaysia deployed its bombardier aircraft for water bombing operations to douse fires in Palembang, South Sumatra, Indonesia from 11 to 19 October 2015. During the haze incident, the Honourable Prime Minister of Malaysia had met his counterpart, President Joko Widodo of Indonesia on 11 October 2015 to raise concerns over the worsening haze situation. Subsequent visits by Minister of NRE to his counterpart, Ibu Dr.Siti Nurbaya Bakar, Minister of Environment and Forestry, Indonesia took place in Jakarta on 27 October 2015.

Lessons Learnt

Very often, a crisis sets the tone for actions to be implemented, and the one positive outcome of this environmental disaster was that the source and affected countries set out to address the haze arising from land and forest fires and prevent them through better management policies and countermeasure strategies. With regard to lessons learnt

from the 2015 haze, we are appreciative of Indonesia's commitment and pledge to resolve the haze problem over a period of three years through implementation of its Plan of Action (POA) in Dealing with Transboundary Haze Pollution. This POA, include, among others, development of a moratorium on peatland use, close and continuous monitoring of hotspots, and enhanced coordination among local governments, the national and regional governments, the private sector and local communities to prevent and suppress land and forest fires.

Conclusion

Haze is a long term challenge and no doubt more attention and resources need to be committed towards eliminating this problem. Hence, concrete measures must continue to be adopted by the regional countries as outlined in the framework of the ASEAN Agreement on Transboundary Haze Pollution (AATHP) which is aimed at addressing transboundary haze in a collective manner. In dealing with transboundary haze, ASEAN countries must assertively translate their commitment into effective and concrete action, especially at a time when all AMS have ratified the AATHP. On bilateral cooperation, Malaysia looks forward to closer cooperation with the Indonesian government to build upon the previous experience and work on countermeasures to prevent the occurrence of haze.

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The HAZE

From the Perspective of a Planter of 35 Years

Every time the haze or smog descends upon our atmosphere, affecting visibility and polluting the air we breathe, many, in their annoyance, wonder who is to blame. And the answer they often get to hear is: it is the big oil palm plantation companies that operate in Indonesia; they are the culprits who cause this perennial problem by their indiscriminate burning during the planting process. It is time to recognise that this is a highly fallacious view. The truth is that large plantations are nowhere near the top of the list of agents that cause the haze.

Rapid Pace of Oil Palm Cultivation

Development of oil palm areas in Indonesia at unprecedented levels by both local and foreign plantation companies has been going on for almost a quarter century. Alongside, the opening up of areas in units of a few hectares by individual Indonesian farmers, for their own economic progress, has also been proceeding at no lesser a pace.

The pace of development by the companies, however, has slowed down in the last few years and among the reasons is the increasing influence of international regulatory bodies and green NGOs of the West on the way palm oil is produced in the East. Their imposition of ever-expanding requirements and restrictions to render oil palm cultivation more sustainable is laudable to the general public but the same can amount to disincentives to the prospective developer. With the exhaustion of fertile land, development was allowed on peat soil, but a brake has been put on this practice now. Thus, all these factors have led to even well established companies in Indonesia to slow down or halt their expansion.

However, no such slowing down is felt in the case of the smallholders though. Growing oil palm is a definite path to progress for the rural Indonesians and so it makes good economic and political sense to keep providing incentives for expansion of the small farms. It is a fact that while plantations often use large and expensive machinery in their efforts to avoid open burning, the smallholder has no other means except to set fire to his cleared vegetation and debris to prepare the ground for planting. This practice of controlled burning by the smallholder is allowed under Indonesian law and it is not just for oil palm, but for rubber, tapioca, pepper and other crops as well.

Malaysia Pioneered Zero Burning

In Malaysia, strict controls on open burning have been in force since the early 90s. The Department of Environment's field officers will be at the doorstep of an estate in which some overnight burning had taken place stealthily. Satellite-assisted detection of flash points enables these officers to closely monitor the plantations for any infraction and no estate manager would wish to be known among his peers as an offender in this area. He also would not have the sympathy of his superiors at the Head Office if he embarrassed the company by running foul of the law.

As a result, proper operating procedures have been laid down by individual companies to guide their estate managers on the ground and all necessary machinery are procured to clear the ground in an eco-friendly manner when replanting is carried out – whether of rubber or oil palm. In the case of rubber, the wood is mostly extracted for furniture manufacture and the remaining debris neatly stacked by bulldozers in the inter-rows, i.e., in between the rows along which the new rubber seedlings are to be planted, and allowed to disintegrate over time and become organic fertiliser for the crop.

In the case of oil palm replanting, much heavier machinery is deployed to chip the felled oil palm trunks into small pieces that decay quickly and need no burning. There are also other machines that literally pulverise the trunk to fibre. Though the objective here is also to prevent large scale breeding of the dreaded rhinoceros beetles, by denying them favourable breeding ground in the form of rotting palm trunks, these practices of chipping and pulverisation also totally negate the need for any burning.

Sustainability Requisites of RSPO

Then at the turn of the millennium, the formation of the international accreditation body called the Roundtable on Sustainable Palm Oil, or RSPO, introduced further ecological, safety and related requirements to make cultivation of oil palm less damaging to the planet and people. As non RSPO-certified oil producers might not be able to find ready buyers in the world market, there is now therefore no question of any oil palm company not complying with sustainability requisites including zero burning.

Now, much of this development in sustainability and preservation of the environment applies to oil palm crop cultivation in Indonesia as well. RSPO being an international body, regulates Indonesian

palm oil industry in the same way as it does the Malaysian industry. It takes individual estates and oil mills a year or two to put their house in order before they could qualify for certification by RSPO. To supplement the RSPO's functions locally, there are the Malaysian Sustainable Palm oil, MSPO, and for our neighbour, the ISPO, with their own certification schemes. It is mandatory for companies to get certified by this local body.

RSPO requirements cover not just the mode of replanting or processing of the oil but a whole range of aspects from protection of workers' health and provision of safe working environment to safeguarding of high conservation areas and safe disposal of waste and effluents. Every substantive operation in the plantation is guided by a standard operating procedure. Thus, it has to be a real recalcitrant company that would routinely flout any of these processes, least of all open burning.

No doubt there will be the blacksheep. It would be naive to assume that since all the laws are in place, compliance would be 100%. In a vast and scattered country like Indonesia, new or late comers to the game, understandably in more remote areas of the jungle, and in collusion with local enforcement officials, may flout the law for their expediency. It is not unheard of for big companies to be suspended from RSPO for violating its provisions as happened in early 2016 to a prominent Malaysian company accused of rainforest destruction. However, despite such exceptions, the large oil palm companies are unlikely to precipitate the haze as we know it, thanks to the watchdog bodies keeping a hawk's eye on their activities.

But the same cannot be said of the scores of local and international companies involved in logging, cultivation of rubber and sugar cane and the production of pulp. These enterprises are not as comprehensively policed for environmental protection as the palm oil industry. Sugar cane, in particular, involves open burning during harvest. Timber grown for pulp has a shorter life span than oil palm and therefore is replanted more frequently.

Multitude of Factors Causing Haze

Nonetheless, the major causes of the recurrent haze are a composite of other factors and sources. The primitive land clearing technique of the Indonesian smallholder called 'slash and burn' is still very much alive. Local laws allow controlled burning as a means of assisting the small farmer. Logging, legal and illegal, is much less amenable to surveillance as it is carried out deep in the jungle. Permitting peatland cultivation is another major cause. Add to these, are a host of other considerations – the vastness of the country, low literacy and high poverty levels



of the people, poor road communication and the government's limitations in terms of funding, machinery and manpower, plus, the more common occurrence of the El Nino phenomenon in recent years.

In Indonesia, much of the land is still owned by the government and administered by the local authority. Families willing to cultivate are given lots of usually two hectares with the proviso that they begin tilling it within a timeframe and not leave it idle for long. The farmer will normally choose dry periods to clear his land as then the felled vegetation of bush, rattan, small trees, etc. can be burnt quickly. As stated, controlled burning of small plots by smallholders is allowed under Indonesian law. The drier the period, the more this clearing and burning can be expected because to the farmer it is sound logic to 'make hay while the sun shines'.

Control Limitations

Peat soil can be shallow or up to even twenty meters deep. Very old peat would have, over a long period of time, become mineralised, in which form it cannot burn well. It is the woody peat that when ignited can go on burning, smothering and flaring up when temperatures soar. While still under, peat of course poses no problem of creating haze, but where the area has been drained for development, by way of cutting canals, they become exposed and vulnerable. Being nothing but flammable material, they can easily ignite.... cigarette butts of fishermen along the canal, amber from a nearby bush fire or even the sheer heat of the atmosphere.

When a patch in the middle of a several hundred hectares of exposed peat soil catches fire, and the area is not accessible, the fire can go on burning for weeks. This is where the special difficulties of tackling the problem present themselves. With no roads, bulldozers will need to work for weeks to create access to the spot, and further transport would be needed to send in fire-fighting items and

manpower. The task is time-consuming, arduous and, most-importantly, its priority becomes questionable.

Where resources are in short supply, and the fire is not endangering people or property, will mobilising resources to put out the fire be top priority? Should resources be concentrated where crop and communities might be at risk? So, will waiting it out and letting the rains to the job, whenever they come, be a better option? In the meantime just tolerate the pollution? It is fair to assume that in many instances this is how the matter would have been dealt with.

A Solution in Sight?

The worst haze since the first major one in mid-90s, was experienced late last year affecting not just the three usual victims of Indonesia, Singapore and Malaysia, but also extending as far as Thailand. Eventually it came to an end only when the rainy season set in, not through fire control as the cloud seeding efforts and water bombing efforts were far from sufficient. Haze is not a one-off natural calamity akin to an earthquake but a chronic nasty war, that has to be fought resolutely with adequate resources and the right approach.

In an interview with the BBC News Channel at the height of the haze menace late last year, the Indonesian President was reported to have stated that it would take the country three years to solve the problem. One wonders what factors are likely to change in the next three years that would enable a solution to the problem. For a start, a moratorium has been imposed on peatland development which is one positive move. Army personnel are now widely deployed to high risk fire areas for patrolling and fire-fighting. There is also talk that the open burning provision in the law may be toned down. Land of high carbon stock, i.e., above the benchmark of 75mt per hectare is now disallowed for development. All these are

moves in the right direction to reduce the onset of forest fires.

Thus, it is time that Indonesia starts viewing the haze for what it really is: a kind of chemical war unleashed on the country and its people by a combination of natural and man-made forces; an uprising, staged almost every year, lasting for months, and arguably, as devastating. Haze spews greenhouse gases harming the ozone, carries toxic elements endangering the health of hundreds of thousands of people, disrupts air travel and affects economic activity and children's schooling. Haze contains chemicals such as carbon monoxide, nitrogen dioxide, sulphur dioxide and heavy metals carried on fine particles that can enter deep into our lungs causing respiratory problems. A Pollutant Standards Index (PSI) or Air Pollution Index (API) of 100 is considered unhealthy and 300, hazardous. But during worst periods, towns like Pekanbaru in Sumatra and Palangkaraya in Central Kalimantan have been known to be choked with smog exceeding PSI readings of 1000. With the climate not going to get any favourable in the future, should this situation be endured for weeks and months year after year or a permanent solution sought?

A suggestion from the author is that a special fund be set up to which budget allocations be made to create a new Counter-Haze body embracing all the current organisations involved in the task. This body will be tasked with putting into shape a new network of facilities, equipment and hierarchy of personnel to deal with the issue. These funds can be utilised to purchase patrol and water bombing helicopters, machinery for road construction, transport vehicles, surveillance equipment and all paraphernalia required as worked out by the experts chosen for the task.

Source

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HCFC Phase-out Management Plan (HPMP Stage-1) for Compliance to the 2013 and 2015 Control Targets for Annex-C, Group-i Substances

Introduction

The Montreal Protocol on Substances that Deplete the Ozone Layer is a multilateral environment agreement that controls the production and consumption of ozone depleting substances (ODS). Malaysia ratified the Protocol on 29 Ogos 1989. To date, 197 countries have ratified the Protocol and are obliged to phase out ODS according to the schedules agreed upon by the Parties. As for Malaysia, the Ministry of Natural Resources and Environment is the focal point while the Department of Environment is the implementation agency to carry out activities and projects to phase out ODS. Importation of chlorofluorocarbon (CFC), carbon tetrachloride (CTC) and halon was prohibited on 1 January 2010. Hydrofluorocarbon (HCFC), as an alternative to CFC, is also an Ozone-Depleting Substance (ODS) and has global warming potential (GWP).

Recognising the environmental benefits of reducing HCFC production and consumption earlier than the previous control schedule, the XIX Meeting of the Parties to the Montreal Protocol in September 2007, through its Decision XIX/6, accelerated the phase-out schedule for HCFCs by 10 years. The first control is the freeze on production and consumption of HCFCs from 1 January 2013, at the Baseline Level (average of 2009 and 2010 consumption levels). The second control step is the reduction of

Table 1. Phase-out targets for Malaysia

Target	Maximum Consumption Level (ODP tonnes)
From 01 January 2013	515.8
From 01 January 2015	464.2
From 01 January 2020	335.3
From 01 January 2025	167.6
From 01 January 2030	(strictly for servicing) 12.9
From 01 January 2040	0

10% from the Baseline Levels on January 1, 2015. Subsequent control steps are 35% reduction by 2020, 67.5% by 2025, 97.5% by 2030 and complete phase out from 01 January 2040 (Figure 1).

Through the Government-Industry Partnership, the HPMP was prepared by involving stakeholders from the government agencies and industry representatives. Another milestone was achieved in the phasing out of ODS in Malaysia when the 65th Meeting of the Executives Committee for the Implementation of the Montreal Protocol (ExCom) that met in Bali, Indonesia from 12-17 November 2011, approved Malaysia's HPMP for funding amounting to USD 9,578,470 for implementation from 2012 to 2016.

Phase-out Targets and Strategy

In order to ensure that the phase-out actions are carried out on time and remain

sustainable, targeted policy and regulatory actions, management and coordination, technical assistance and awareness programs will also be implemented. The HCFC consumption baseline for Malaysia (average of 2009 and 2010 consumption levels) is 515.8 ODP tonnes. Consequently, the targets for compliance with the phase out controls are as given in Table 1.

The strategy for compliance with the Stage-I targets with the 2013 and 2015 milestones comprise Policies, Regulations, Project Management and Coordination. Policies and targeted regulations that are enforceable without distorting the markets will be key to controlling the consumption of HCFCs, in order to meet the 2013 and 2015 targets. In March 2011, the Malaysian cabinet approved planned regulatory action as shown in Table 2.

On 1 January 2013, Malaysia implemented the quota system for the importation of

Montreal Protocol's HCFC Phase-out Schedule

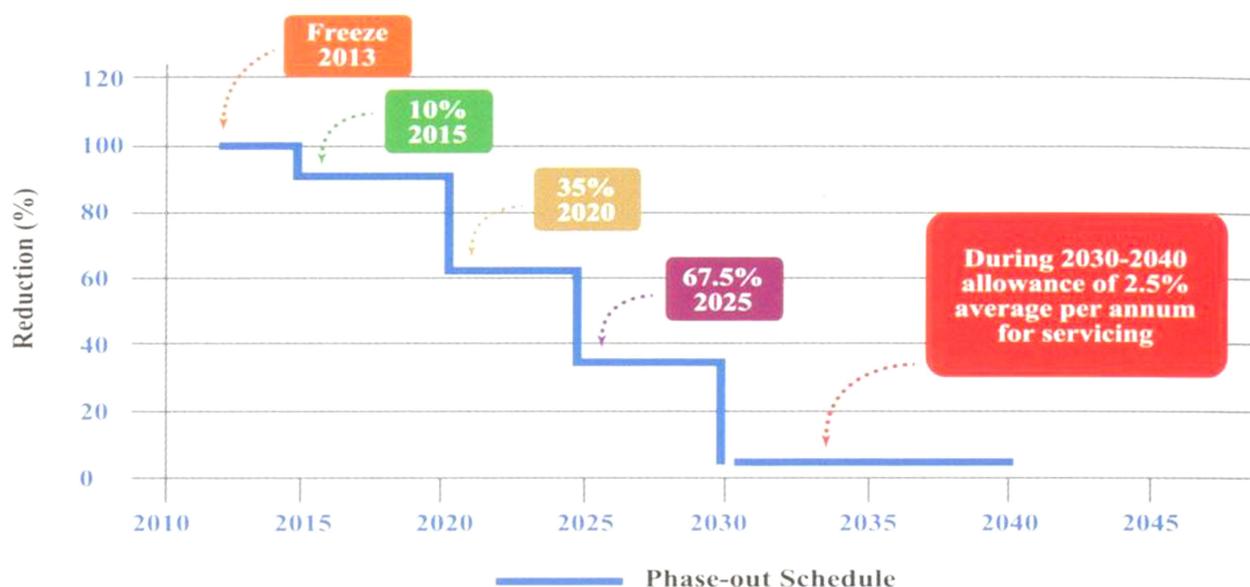


Figure 1: HCFC Phase-out Schedule for A5 Countries

Table 2. Policies and regulatory actions of HCFC Phase-out Management Plan (HPMP) (2012-2040)

Year	Regulatory Actions
2012	Establishment of AP for HCFC import quota based on national average consumption for 2009/2010
	Amend existing legislation for control on the use, import, manufacture, assembly or installation of products and equipment using HCFCs.
2013	Licence for re-export of HCFC chemicals
	Implement Approved Permit (AP) system for HCFC import (by January 2013)
	Prohibit expansion of new manufacturing facilities using HCFCs
	Promote the use of alternatives through incentives
2015	Undertake certification of skilled workers trained to handle HCFCs
	Prohibit the manufacture, assembly and import of HCFC-based air-con equipment of 2.5hp and below (for use in Malaysia)
	Include HCFCs as restricted gas
2020	Prohibit import of pre-blended polyols with HCFCs
	Prohibit the manufacture, assembly and import of all products and equipment using HCFCs (except for essential uses)
	Prohibit the use of HCFC 141b as blowing agent
2025	Prohibit the use of HCFC in the manufacturing and installation of new fire suppression systems
	No further new installation of products and equipment using HCFCs
2030	Approved Permit (AP) limited to 2.5% of baseline and for servicing use only
2040	Total ban on the import and use of HCFCs.

HCFC. Application for Approval Permit (AP) is processed by DOE through an online 'e-Permit' system within the quota given with the total amount of HCFC allocated according to baseline level or freeze limit of 515.8 ODPT (ozone depleting potential tonnes) or 7900 metric tonnes.

The on-line system, "e-Permit", was developed to process and approve import and export of HCFC from registered importers and exporters. The on-line system is a linkage network between the HCFC importers/exporters, Department of Environment Malaysia and the Customs Information System of the Royal Customs of Malaysia. The establishment of this system is in line with the HPMP strategy which is the implementation of Approved Permit (AP) and quota system for import of HCFC.

The HCFC Phase-out Management Plan Stage 1 (HPMP - Stage 1)

Malaysia received funding assistance from the Multilateral Fund of the Montreal Protocol (MLF) amounting to USD 9,587,470 to implement the policy and strategy outlined in the HPMP – Stage 1 which included an investment project to phase out HCFC in 17 industries in the foam sector and technical assistance for refrigeration and the air-conditioning sector. Technology conversion projects using cyclopentane at 13 foam manufacturing companies and 4 system houses manufacturing HCFC-free polyol were completed in June 2015. The list of industries that participated in the technology conversion projects under HPMP Stage 1 is shown in Table 3.

There are four main components of projects under the refrigeration & air-conditioning sector (RAC) namely Refrigeration Management, Technician Training, Enforcement Officials Training and Pilot Retrofitting/Replacement Demonstration for air-conditioning system.

The Department of Environment published a Training Manual for Technicians in Refrigeration and Air-conditioning Service Sector as well as a Training Kit for use by 41 Authorised Training Centres (ATCs). They were given sets of Reclaim and Recycle machines to carry out training for Certification of Technicians.



Cyclopentane as an alternative to HCFC 141b in the foam sector

Continued on page 12



Replacement project of R32 air-conditioners at EiMAS and UNIKL

A demonstration project on replacement of domestic air-conditioning system using R22 with air-conditioning units using R32 has been carried out at two selected sites that is at University Kuala Lumpur, Malaysian – France Institute (UniKL – MFI) Bangi and Environmental Institutes of Malaysia (EiMAS), Bangi. The objective of the project is to promote the ozone friendly R32 air-conditioning system which is being introduced to the Malaysian market to replace the R22

system. This project has been supported by Daikin Malaysia (OYL) as the R32 air-conditioning system manufacturer.

A series of seminar and training sessions was organised to disseminate information on new technology in phasing-out HCFC. A series of training sessions was also conducted for enforcement officers of the Malaysia Royal Customs Department and DOE to have a better understanding of the import and export of ODS especially on illegal trade, together with hands-on training in using Refrigerant Identifiers.

The implementation of projects under HPMP Stage 1 has run according to schedule and is expected to be completed by December 2016. Upon successful completion of the HPMP Stage 1, there should be a sustainable reduction of 77.36 ODP tonnes of HCFC consumption which is equivalent to a reduction of 1.35 million tonnes of CO₂eq, (carbon dioxide equivalent) direct emission annually from 2016.

Table 3. Foam companies that participated in HPMP Stage 1

A. FOAM MANUFACTURING COMPANIES	
1.	CYCLE WORLD CORPORATION Lot 23261 Jalan Sungai Puluh, off Jalan Kapar, 42100 Klang, SELANGOR
2.	INSAFOAM INSULATION SDN BHD Lot 11118, Kg Sungai Rasau, Batu 8, Jalan Pulau Meranti, 47100 Puchong, SELANGOR
3.	RICWIL SDN. BHD 122, Jalan 2D, Kampong Baru Subang, Seksyen U6, Shah Alam, SELANGOR
4.	LINEAR PANEL MARKETING SDN BHD No:1285, Jalan 11, Kampung Baru Ampang, 68000 Ampang, SELANGOR
5.	OCEAN ROTO MOULDING SDN BHD Lot 5482, Jalan Bernam, Parit 4, 45400 Sekinchan, SELANGOR
6.	RIGID FOAM INDUSTRY SDN BHD Lot 2697, Jalan Kampung, Kampung Baru, 47000 Sg Buloh, SELANGOR
7.	UNITED PANEL SYSTEM (M) SDN. BHD No:6, Jalan Mutiara 6, Taman Perindustrian Plentong, 81100 Johor Bahru, JOHOR
8.	BERJAYA STEEL PRODUCT SDN BHD PT 16736 Jalan Permata 1, Arab Malaysian Industrial Park, 71800 Nilai NEGERI SEMBILAN
9.	PANGKAT INDUSTRIAL SDN. BHD 11, Sri Bahari Road, 10050 PULAU PINANG
10.	ZUN UTARA INDUSTRY SDN. BHD Lot 13, Kawasan Perindustrian Bandar Darulaman, Mukim Naga, 06000 Kubang Pasu, KEDAH
11.	SAI COND SALES & ENGINEERING SDN BHD No.3, Jalan Mashuri 1, Kawasan Perindustrian Kluang, Batu 4, Jalan Mersing 86007 Kluang, JOHOR
12.	SUPIERA ENTERPRISE SDN BHD 34, Jalan Bistari 4, Taman Industri Jaya, 81300 Skudai, Johor Bahru, JOHOR
13.	KWANG TAI REGRIGERATIONS & ELECTRICAL SDN BHD 193 Section 60, Jalan Sekama, Kuching, SARAWAK
B. SYSTEM HOUSES (POLYOL MANUFACTURERS)	
1.	MASKIMI POLYOL SDN BHD Unit 1-8, Lot 5815, Jalan Reko, 43000 Kajang, SELANGOR
2.	COLOREX SDN. BHD D9-5-1, Pusat Perdagangan Dana 1, Jalan PJU1A/46, 47301 Petaling Jaya, SELANGOR
3.	ORIKEN MARKETING (M) SDN BHD Unit 1009, Block B, Phileo Damansara #15, Jalan 16/11 off Jalan Damansara 46350 Petaling Jaya, SELANGOR
4.	PPT (M) SDN. BHD No.65, Jalan TTP 1/1, Taman Industri Puchong,, 47100 SELANGOR



Refrigerant Identifiers distributed to DOE State Offices for enforcement activity



Refresher course for master trainers and the management of HFC 32 refrigerant in servicing sector, 22-25 February 2016

Source

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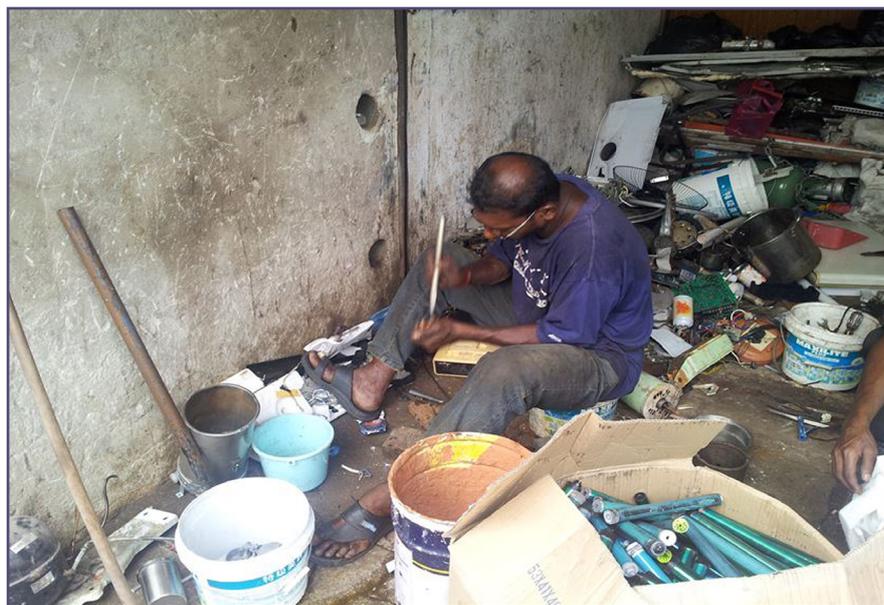
Household E-Waste Management – An Unseen Dimension of Technologies

Background

Electronic waste (commonly known as E-waste) refers to all discarded electronics and electrical appliances. It is one of the fastest growing waste streams in the world today. These items include anything from computers, televisions, handphones and tablets, to washing machines, air-conditioners, refrigerators and everything else used in our daily life. Daily human activities rely so much on a wide range of electronics and electrical appliances nowadays, and new technology development or new products are being churned out to bring the best of convenience, entertainment, efficiency and quality to human life.

There is, however, an unseen dimension behind the scene of technologies we use, which is not known to most people. According to a report released by the United Nations University (UNU), about 41.8 million tonnes of E-waste were produced globally in 2014. Even more surprisingly, only less than 20% of this E-waste is properly recycled or reused. The remaining is either disposed off at the landfill sites, being dismantled improperly for recyclable materials, or illegally dumped indiscriminately at illegal dumpsites. Improper management of discarded E-waste poses serious environmental, social and economic impacts due to the fact that E-wastes contain hazardous substances such as lead, mercury, arsenic and cadmium, which are extremely harmful to the environment and human health. The World Health Organization (WHO), in particular, has shown increasing concern towards the adverse health impacts of improper handling and disposal of E-waste especially at huge E-waste dumping grounds in some countries such as Guiyu in China, Mumbai in India, and several other cities in African and South American regions.

E-waste contains precious materials such as gold, palladium, platinum, copper, silver and many others, which could be recovered and recycled if a proper management mechanism is in place. Following international standards, a complete system for recovery and recycling of E-waste includes not only the recovery of precious



Dismantling of E-waste by the informal sector in Malaysia

metals, but also proper treatment and disposal of hazardous substances from the E-waste, to ensure an overall efficient process carried out in an environmentally sound manner.

Current Situation in Malaysia

E-waste is generally divided into two main streams by generation sources; firstly the E-waste generated from the industrial manufacturing processes, which is normally in the form of parts; and secondly the E-waste generated after end of consumption, which is in the form of products, commonly known as household E-waste (although it could be generated from other non-household consumers such as commercial entities, institutions and others).

In Malaysia, most people think that our discarded household E-waste creates no issue because there are many so called “recyclers” or buyers around, who normally are able purchase our household

E-waste at certain buying prices. The truth is that most of this household E-waste is actually being dismantled in the informal sector, where most of the valuables such as plastics, ferrous and non-ferrous metals are recovered, while those unwanted hazardous parts such as the printed circuit board (PCB) and other harmful materials such as chlorofluorocarbons (CFCs) are disposed off or released into the natural environment without taking any precautionary measures, causing serious adverse impacts on the environment and human health.

There are currently a handful of full and partial E-waste recovery facilities licensed by the Department of Environment (DOE) throughout the country, but these facilities are mainly doing recovery of E-waste parts discarded directly from the industrial sector, instead of the complete set of household E-waste generated from the consumers. In other words, items such as televisions, washing machines, refrigerators, computers, tablets, printers, mobile phones as well as small appliances such as hair dryers, DVD players, rice cookers and many other appliances that we have used at home and discarded as household E-waste after the lifespan, are not properly managed. The complete set of household E-waste needs a totally different management system in terms of collection, handling and recycling requirements, which are currently not the focus, and beyond the capability of most of the licensed E-waste recovery facilities in Malaysia.

The Future Plan

The Department of Environment (DOE) is seriously looking into this issue and is currently in the process of establishing a proper system for household E-waste management in Malaysia, in line with the world’s direction towards proper management of household E-waste in an environmentally sound manner. With assistance from the Government of Japan through the Japan International Cooperation Agency (JICA), a 3-year technical cooperation project was commenced in August 2015, with a group of technical experts dispatched to the DOE to



Improper handling of E-waste in Guiyu, China



An example of a proper E-waste recycling system

Table 1. Legal framework with shared costs

Legal Framework	Descriptions
E-waste Flow	Determines the right channel where the household E-waste is collected from generation points to authorised collection centres, collectors, retailers, and finally the household E-waste full recovery facilities or final disposal.
Fee Flow	Proper E-waste flow prohibits the household E-waste from entering into informal sectors, by authorising only the formal collection channels within the formal system boundary. Determines how the fees required for proper recycling of household E-waste are collected from the consumers and/or manufacturers, and channeled to the fund management entity, for various purposes of disbursements to ensure functionality of the entire system. Proper fee flow sustains the entire system, and ensures the overall costs required for proper management of household E-waste is shared among the players.
Reporting Flow	Determines the information / data flow through proper reporting by relevant players, with the use of possible manifest system (consignment note). Proper reporting flow avoids leakage of E-waste into the informal sector, and ensures that proper data is captured for determination of total recycling fee to be received. Proper data management is also crucial for future planning and improvement of the system in the long run.

support the Government of Malaysia in developing a system for household E-waste management in Malaysia, taking into consideration all aspects: legal, institutional and logistics planning. The future plan emphasises the concept of “Extended Producer Responsibility” (EPR) and “shared responsibility” among relevant players at all levels including the users or consumers who are the E-waste generators, retailers, manufacturers, importers, collectors, transporters and recycling facilities.

The DOE aims to enforce the new regulations in 2018, specifically targeting 6 prioritised items of household E-waste, namely refrigerators / freezers, televisions, air-conditioners, washing machines / cloth dryers, computers, and mobile phones. The scope of the regulation will be extended to cover additional items such as small appliances, as well as other household hazardous wastes including fluorescent lamps and rechargeable batteries in the future.



Future vision of the entire household E-waste management system in Malaysia.

The new regulation will outline three main legal frameworks to support proper E-waste flow, recycling fee flow and reporting flow. The regulation also stipulates the roles and responsibilities of the respective players to ensure that all household E-waste generated is handled and collected in the right way, channelled to the right destinations and treated in the right manner, with the costs shared as shown in Table 1.

In a nutshell, the regulation prohibits the household E-waste from entering the informal sector in the long run as an offender will be checked against the regulation and subject to punishments. In order to achieve this, new mechanisms will be developed to authorise only players involved in activities related to household E-waste collection, transportation, handling and treatment and who fulfil the criteria or requirements be allowed to function as the formal channel of household E-waste management in the future.

In addition, it is important to note that sufficient financial flow is necessary to ensure the functionality of the entire system, especially substantial costs are required for various environmental protection measures as well as safe disposal of hazardous substances. All costs incurred in addition to the revenue obtained from the recovery and recycling of the household E-waste shall be shared among the consumers, manufacturers, recycling industries and other relevant stakeholders, to ensure overall sustainability in the long run.

Conclusion

Although E-waste is a global issue, it is undeniable that this issue can be tackled only at the local level. To date, most of the household E-waste generated in Malaysia ends up in the informal sector, being dismantled for valuable materials, while the unwanted residue is being discarded indiscriminately, posing high risks of contamination to the environment and human health. It is also a waste of natural resources because E-waste contains precious metals that could be recovered for further reuse.

A new system for proper management of household E-waste is essential, and currently under development by the Department of Environment. This new system is based upon a legal framework of “shared responsibility” to ensure proper household E-waste flow, proper fee flow and proper reporting flow. Each player in the entire flow of household E-waste from generation till final recovery facility should play their respective role to ensure that all the E-waste is properly collected through the right channels for effective recycling and recovery in an environmentally sound manner. Consumers in particular, should be responsible for the entire lifespan of the electrical and electronic products that they have used, including after use or when it becomes E-waste.

It is nice to buy and nice to use, but please give a second chance to your E-waste for a new life!

“Be smart to buy, be wise to use, be responsible to discard your E-waste!”

Source

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World Environment Day

Host Country Angola Has a Mission...



This year Angola in Africa has been chosen as the host country for the World Environment Day celebrations on 5th June 2016 with the theme “Go Wild for Life”. It is aimed at raising awareness of the far-reaching nature of wildlife crime and to encourage people to change their habits in order to reduce demand for illegal wildlife products, and to press friends, colleagues and officials to do what they can to stop the trade. The illegal trade in wildlife is pushing many species of animals and plants toward local or global extinction, which would be a disaster for conservation efforts. It will also lead to loss of biodiversity, disturbance to the natural systems and a growing threat to economies and communities.



Angola has a rich wildlife: lions, great apes and the giant sable antelope, an endangered species found only in Angola and listed as critically endangered by the International Union of Conservation of Nature. Bird life includes African Grey Parrots, whose decline across the continent is widely blamed on their illegal harvesting for the pet trade. Angola’s environmental assets are a pristine coastline, and forests and grasslands comparable to those that draw tourists to neighbours Namibia and Zambia.

The government recently launched a string of initiatives to enhance conservation and stiffen law enforcement. The Great Elephant Census is expected to release the results of the Angola survey in the coming months. To demonstrate its commitment to curb elephant poaching, Angola last year submitted a National Ivory Action Plan as part of its membership of CITES, the UNEP-hosted international convention designed to prevent trade in wild animals and plants

The plan includes stiff penalties for poaching and ivory trafficking and stronger policing, including more training for wildlife rangers and the posting of a wildlife crime unit to the international airport in the capital, Luanda. In March, officials presented a draft law banning the sale of ivory, a move that would end

the open sale of ivory artifacts at Luanda’s Benfica market. Angola is also discussing the establishment of several vast trans-frontier conservation areas, such as the wildlife-rich Okavango delta in Botswana, and another that incorporates Namibia’s wild Skeleton Coast. Angola has joined 12 other African nations in signing the Elephant Protection Initiative, which focuses on safeguarding elephants through measures such as closing down domestic markets.

SOME ALARMING ELEPHANT DATA

- Between 2010-2012, 100,000 African elephants have been killed out of an estimated population of 500,000.
- Between 2009 and 2014, 170 tonnes of ivory are estimated to be illegally exported out of Africa.
- Between 2002 and 2011, there has been a two-third fall in forest elephant population due to poaching.
- Since 2009, there has been 60% decline in African Savannah elephant in the United Republic of Tanzania.
- Since 2009, there has been a 50% decline in African Savannah elephants in Mozambique.

Source: Illegal Trade in Wildlife (ITW)

Angola is embracing this ambitious agenda – and the high-profile role as host of WED – even as it continues to rebuild after a long and damaging civil war that only ended in 2002. The country can look to other African countries, especially safari destinations, and the growing revenue they earn from ecotourism to appreciate the value of safeguarding the environment and protecting iconic species from illegal poaching and trafficking.



GO GREEN RUN 2016

IN CONJUNCTION WITH WORLD ENVIRONMENT DAY 5 JUNE 2016

World Environment Day (WED) is a global platform for public outreach that is widely celebrated in over 100 countries. It has been established by the United Nations General Assembly to mark the opening of the 1972 Stockholm Conference on the Human Environment for encouraging global awareness and action for the environment. It serves as the people's day for doing something positive for the environment, inspiring individual actions that collectively can generate a hugely positive impact on the planet.

In Malaysia, various environmental activities have been conducted in conjunction with the WED. One of the activities was the "Go Green Run 2016" held in Petaling Jaya. It was co-organised by the Department of Environment Malaysia and a local event planner company, Big Show Asia Sdn. Bhd., in cooperation with various private companies. The program was officiated by the Hon. Datuk Ir. Haji Hamim bin Samuri, Deputy Minister, Ministry of Natural Resources and Environment. More than 500 local and international participants took part in the fun run to celebrate the WED. The execution of the program is supported by the Ministry of Natural Resources and Environment (NRE) and Ministry of Youth and Sports.



Prize giving ceremony by the Hon. Datuk Ir. Haji Hamim bin Samuri, Deputy Minister, Ministry of Natural Resources and Environment



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Aerobic exercise session



Aerobic exercise session led by trainers from Celebrity Fitness



Participants getting ready for flag-off



Children listening to the explanation given by one of the exhibitors



Go Green Run 2016

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