

OZONE

BULLETIN

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Department Of Environment
Ministry Of Natural Resources & Environment

Message On THE INTERNATIONAL OZONE DAY

By The Honourable
Minister Of Natural Resources And Environment
On 16th September 2017

Our earth is protected from the harmful UV rays from the sun by the ozone layer. The increase of ozone depleting substances, such as Chlorofluorocarbon (CFC), Halon, Carbon Tetrachloride (CTC), Methyl Bromide (MBr) and hydrochlorofluorocarbon (HCFC) in the atmosphere has led to the thinning of the ozone layer. This subsequently leads to the rise of skin cancer, eye cataracts, weaken body resistance to fight disease and harmful affects the food chain.

Malaysia has successfully phased out CFCs, Halons and CTC since

January 2010. In 2015, Malaysia recorded 19% reduction in HCFC consumption far beyond the 10% required under the HCFC Phase Out Management Plan Stage 1.

The International Ozone Day is celebrated every year on 16th September by 197 countries, which are parties to the Montreal Protocol on Substances that Deplete the Ozone Layer. To mark the 30th Anniversary of the Montreal Protocol, the celebration theme is "Caring for All Life Under the Sun". The logo and theme celebrate the Montreal Protocol's critical role caring for life on the planet over the

past 30 years by preventing massive damage to human health and the environment from excessive ultraviolet radiation.

Let us together protect the ozone layer by reducing the use of ozone depletion substances for the well-being of global life.

“CARING FOR ALL LIFE UNDER THE SUN”



DATU SRI DR. HJ WAN JUNAIDI TUANKU JAAFAR
MINISTER OF NATURAL
RESOURCES & ENVIRONMENT MALAYSIA

CONTENTS

SIXTH ASIA OCEANIA KONWAKAI MEETING,
10th - 12th FEBRUARY 2017, JAPAN

Page03

MASTER TRAINER WORKSHOP FOR
TECHNICIAN IN REFRIGERANT AND AIR
CONDITIONING (RACS) SERVICING SECTOR,
17th - 21st APRIL 2017, SUBANG JAYA,
SELANGOR

Page04

SEMINAR ON HCFC PHASE-OUT
MANAGEMENT PLAN (HPMP) STAGE II,
8th MAY 2017, KUALA LUMPUR

Page05

REFRIGERANT MANAGEMENT COURSE OF
R32 AND CARBON DIOXIDE (R744) IN
REFRIGERATION SYSTEM, 7th - 9th MAY 2017,
THE SAUJANA HOTEL, KUALA LUMPUR

Page06

CUSTOMS TRAINING PROGRAMME ON
OZONE DEPLETING SUBSTANCES (ODS),
23rd - 26th JULY 2017, JOHOR BAHRU

Page07

HCFC PHASE OUT MANAGEMENT PLAN
STAGE II – CONSULTATIVE WORKSHOP
WITH INTERNATIONAL EXPERTS IN
FOAM SECTOR, 20th - 24th AUGUST
2017, GRAND BLUE WAVE HOTEL,
SHAH ALAM

Page10-11

ATMOsphere ASIA 2017, 6th SEPTEMBER 2017,
BANGKOK

Page12

INTERNATIONAL OZONE DAY CELEBRATION,
5th OCTOBER 2017, PUTRAJAYA

Page13

REFRESHER COURSE ON REFRIGERANT
MANAGEMENT COURSE IN OZONE
DEPLETING SUBSTANCE (ODS) RECLAMATION
PROJECT AND CARBON DIOXIDE (CO₂)
R-744, 3rd - 6th OCTOBER 2017, PUTRAJAYA

Page14

MALAYSIA – TIMOR LESTE SOUTH – SOUTH
COOPERATION ON CAPACITY BUILDING FOR
THE IMPLEMENTATION OF MONTREAL PROTOCOL,
11th - 13th DECEMBER 2017, MALAYSIA

Page15

DIARY OF EVENTS 2017

Date: 16 March 2017

Seminar on Update On Refrigerants: Upcoming Major Impact On The Air-Conditioning Industry by MACRA

Venue: Pullman Hotel, Kuala Lumpur

Date: 23 March 2017

Seminar On Carbon Dioxide (CO₂) Refrigeration System Demonstration Project Under Hydrochlorofluorocarbon Phase-Out Management Plan (HPMP) Stage 1.

Venue:
Marriot Hotel, Putrajaya

Date: 17-21 April 2017

Master Trainer Workshop for Technician in Refrigerant and Air Conditioning (RACs) Servicing Sector.

Venue:
Geno Hotel, Shah Alam Selangor

Date: 7 – 9 May 2017

Refrigerant Management Course R32 and Carbon Dioxide (R744) in Refrigeration System

Venue:
Saujana Hotel, Kuala Lumpur

Date: 8 May 2017

Seminar on Hydrochlorofluorocarbon Phase-Out Management Plan (HPMP) Stage II.

Venue:
Saujana Hotel, Kuala Lumpur

Date: 14 June 2017

Seminar on Refrigerants Phase Out: Way Forward in Malaysia.

Venue:
Dorsett Hotel, Putrajaya

Date: 23 – 27 July 2017

Enforcement Course for Customs Officers on Ozone Depleting Substances (ODS)

Venue:
KSL Hotel & Resort, Johor Bharu, Johor

Date: 20 – 24 August 2017

HCFC Phase Out Management Plan Stage II – Consultative Workshop With International Experts In Foam Sector

Venue:
Blue Wave Hotel, Shah Alam, Selangor

Date: 3 – 6 October 2017

Master Trainer Refresher Course On Refrigerant Management In ODS Reclamation Project And Carbon Dioxide (CO₂)

Venue:
Pullman Hotel, Putrajaya

Date: 5 October 2017

International Ozone Day Celebration

Venue:
Pullman Hotel, Putrajaya

Date: 11 – 13 December 2017

Malaysia – Timor Leste South – South Cooperation on Capacity Building for the Implementation of Montreal Protocol

Venue:
Putrajaya

MEETINGS ATTENDED IN 2017

Date: 2 – 5 May 2017

Meeting:
Network Meeting and Thematic Workshops for Asia and the Pacific National Ozone Officers

Venue:
Phuket, Thailand

Date: 10 July 2017

Meeting:
Workshop on Safety Standard relevant to Low GWP alternatives

Venue:
Bangkok, Thailand

Date: 13 – 17 November 2017

Meeting:
The 79th Meeting of the Executive Committee of Multilateral Fund of Montreal Protocol

Venue:
Montreal, Canada

Date: 3 – 7 April 2017

Meeting:
The 78th Meeting of the Executive Committee of Multilateral Fund of Montreal Protocol

Venue:
Montreal, Canada

Date: 3 – 7 July 2017

Meeting:
The 79th Meeting of the Executive Committee of Multilateral Fund of Montreal Protocol

Venue:
Bangkok, Thailand

Date: 11 – 14 July 2017

Meeting:
39th Open Ended Working Group Meeting

Venue:
Bangkok, Thailand

Date: 20 – 24 November 2017

Meeting:
The 29th Meeting of Parties to the Montreal Protocol

Venue:
Montreal, Canada

SIXTH ASIA OCEANIA KONWAKAI MEETING, 10th - 12th FEBRUARY 2017, JAPAN

Daikin Industries, Ltd. had organised the Sixth Asia Oceania Meeting at Osaka, Japan from 10th to 12th February 2017. The participants include experts from academic societies of Heating, Ventilation, and Air Conditioning (HVAC) in Japan such as Japan Society of Refrigerating and Air Conditioning Engineers (JSRAE), key persons of business associations such as Japan Refrigeration and Air Conditioning Industry Association (JRAIA) and Air Conditioning, Heating and Refrigeration Institute (AHRI), professors specialised in architectural technology, and executives of power companies, construction firms and government agencies from Asia and Oceania region.



The meeting is being held to discuss and share experience on the growing concern over increasing environment and energy problems despite the rapid economic development and expansion of the air conditioning market. Specifically, it focused on the problem on the refrigerant of air conditioning, energy supply, and indoor air quality (IAQ) which had been the most important problems in Asia and Oceania region.

The meeting also included visits to two Daikin's facilities which are the Technology and Innovation Centre (TIC) in Osaka and the training 'facility by the sea', Daikin ALES Aoya in Tottori. The visit to the TIC revealed on Daikin's history, success and business as well as technology evolution since its establishment in 1924. On the other hand, the visit to Daikin ALES Aoya demonstrated on the state of the art of training facility where it is fully equipped with accommodation, canteen and training equipment that included installation, research and development (R&D) facilities on the product design as well as on the development of new low GWP refrigerant.

For Malaysia's participant, there was another site visit arranged on the 13th February 2017 which was a site visit to the Daikin Industries Ltd. Shiga Plant. This factory received some awards and certifications towards their commitment on sustainable development and reducing environmental impacts. The recognitions received included Super Green Heart Factory in 2011, Certification for Energy Management System (ISO 50001) in 2014 and had achieved zero waste emissions since 2001. The initiative taken by the factory included; improving line productivity, effective coating to reflect sun and installing LED lighting to save energy consumption. Other efforts also included; thorough separation and recycling of waste, reusing protective gear and reusing wooden pallets in order to achieve zero waste emissions.

In overall, this meeting had been beneficial to the participants in terms of experience sharing and knowledge towards finding a solution on reducing the impacts of global warming in HVAC industries.

MASTER TRAINER WORKSHOP FOR TECHNICIAN IN REFRIGERANT AND AIR CONDITIONING (RACS) SERVICING SECTOR, 17th - 21st APRIL 2017, SUBANG JAYA, SELANGOR

The Master Trainer Workshop for Certified Service Technician Programme (CSTP) in Refrigeration and Air Conditioning Sector (RACs) was successfully conducted at Geno Hotel, Subang Jaya, Selangor from 17th to 21st April 2017. It was organised by the National Ozone Unit (NOU), Department of Environment, Malaysia. 34 participants from Authorised Training Center (ATC) attended the workshop. The aim of the workshop was to train and familiarise the trainers with the manual that will be used in the Certification System Training Program (CSTP).



Good practice and proper handling of HCFC based equipment and other emerging refrigerants in the market were emphasised. Recovery and recycling techniques of HCFC refrigerant was also highlighted in an effort to accommodate the gradual reduction of HCFC refrigerant in the country. At the end of the workshop the trainers had undergone an assessment before they could be certified as Master Trainers. The assessment consisted of two components, theoretical and practical session which covered detailed and thorough checklist on the good practices in Refrigeration and Air Conditioning Service Sector (RACs).

SEMINAR ON HCFC PHASE-OUT MANAGEMENT PLAN (HPMP) STAGE II, 8th MAY 2017, KUALA LUMPUR

On the 8th May 2017, the Department of Environment had organised a Seminar on HCFC Phase-Out Management Plan (HPMP) Stage II at the Saujana Hotel and Resort, Shah Alam. The seminar was officiated by the Minister of Environment, YB Dato Sri Dr. Hj. Wan Junaidi Tuanku Jaafar. The seminar was also attended by the Deputy Secretary General from the Ministry of Natural Resources of Environment, Director General of Environment and Chief, Chemical and Montreal from United Nations Development Programme (UNDP), New York. The purpose of the seminar was to enhance public awareness and to share the initiatives and action plans that will be implemented by the Government under the HPMP Stage II from 2017- 2022.



Figure 1: VIPs with MLF beneficiaries and Centre of Excellence award recipients.

The HPMP Stage II will continue the effort to phase out Hydrochlorofluorocarbons (HCFCs) in order to meet Malaysia's commitments as party to the Montreal Protocol. The implementation of HPMP Stage II has received approval of funding amounting to USD 6.1 million from the Multilateral Fund (MLF). The HPMP Stage II will initially focus on converting manufacturing facilities in foam sectors where non-HCFC, zero-ODP and low-GWP technologies can be applied. In addition, project on the recovery and reclaim of HCFCs in the Servicing Sector will be implemented in order to control the growth of HCFC consumption in servicing sector.



Figure 2: Participants during the seminar.



Figure 3: Press Conference for Seminar on HPMP Stage II.

During the seminar, the Minister handed over Memorandum of Agreement (MoA) to ten (10) MLF beneficiaries who will receive financial assistance to convert their technology to ozone friendly alternatives. Institut Latihan Perindustrian (ILP) Kepala Batas and University of Kuala Lumpur (UniKL) were also awarded as the Centre of Excellence (CoE) for the training of service technicians on handling flammable refrigerants.

REFRIGERANT MANAGEMENT COURSE of R32 AND CARBON DIOXIDE (R744) IN REFRIGERATION SYSTEM, 7th - 9th MAY 2017, THE SAUJANA HOTEL, KUALA LUMPUR

National Ozone Officers (NOO) through Department of Environment (DOE) had organised a Refrigerant Management Course on Hydrofluorocarbon (HFC) R-32 and Carbon Dioxide (CO₂) R-744 in Refrigeration and Air Conditioning Sectors (RACs) on the 7th until 9th May 2017 at The Saujana Hotel Kuala Lumpur. This event had been organized back to back with the launching of Hydrochlorofluorocarbon (HCFC) Phase Out Management Plan Stage 2 (HPMP Stage 2).



Figure 4: Talk given by Daikin Malaysia Sdn Bhd on R-32 (left) and Panasonic Corporation on R-744 (right) refrigerant management system during the Refrigerant Management Course on Hydrofluorocarbon (HFC) R-32 and Carbon Dioxide (CO₂) R-744 in Refrigeration and Air Conditioning Sectors (RACs).



Figure 5: Demonstration on good practices to ensure proper installation of a R-32 air conditioning unit performed by Daikin Malaysia Sdn Bhd staff.

The course was attended by 120 master trainers who involved in teaching and organizing the Certified Service Technician Program (CSTP) for Refrigeration and Air Conditioning Sectors (RACs) from 51 Authorized Training Centres (ATC) in Malaysia. The course aimed to educate and build capacity of the master trainers to be delivered to the technicians in Malaysia on the upcoming and emerging R-32 and R-744 refrigerant handling and management of the equipment.

R-32 is considered as a good alternative to HCFC-22 (R-22) in air-conditioning sector as it does not deplete the ozone layer (i.e zero ODP value) and has a considerable moderate GWP value (i.e. GWP value of 675). However, it is classified in A2L refrigerant class where it has a slight

flammability property. On the other hand, R-744 is carbon dioxide (CO₂) which is viewed as a good alternative to the HCFC-22 (R-22) in refrigeration sector as it has zero ODP value and has a very low GWP value of 1. However, the system using R-744 as refrigerant requires to be operated at a higher pressure (i.e. 6MPa) compared to system using R-22 as refrigerant.

Thus, special consideration in the refrigerant handling and management of the equipment needs to be taken in order to prevent and reducing the safety risk associated with the flammability and high pressure issue.



CUSTOMS TRAINING PROGRAMME ON OZONE DEPLETING SUBSTANCES (ODS), 23rd - 26th JULY 2017, JOHOR BAHRU

Malaysia being a consumption country of Ozone Depleting Substances (ODS) does not produce ODS and imports most of the substances for her consumption. Since the import and export data of these substances is vital towards the country's compliance under the Montreal Protocol, it is important for the custom and enforcement officers to be trained in order to strengthen the effectiveness of the import control system for ODSs especially Chlorofluorocarbon (CFC) and Hydrochlorofluorocarbon (HCFC) and ultimately to prevent and curb illegal smuggling of these ODSs into the country. To strengthen the enforcement capacity of the Royal Customs & Excise Department, Refrigerant Identifiers (RI) have been distributed to all major ports and entry points across the country.

Department Of Environment Malaysia in collaboration with the Royal Customs Academy Malaysia (AKMAL)



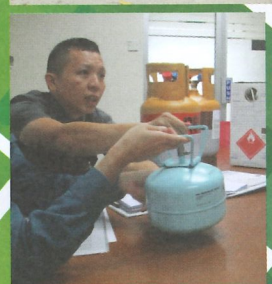
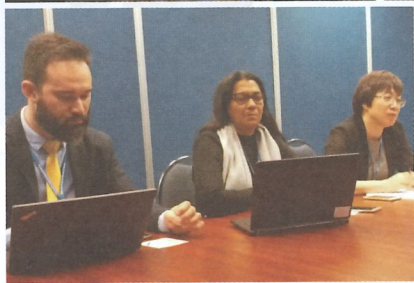
Figure 6: Briefing by the Royal Customs & Excise Department officials at the Tanjung Kupang Checkpoint, Gelang Patah, Johor.



Figure 7: Group photo of customs training programme on ozone depleting substances held from 23-26 July 2017.

organised the annual training programme at the KSL Hotel & Resort Johor Bahru from 23rd - 26th July 2017. The program was attended by 54 officers from Royal Malaysia Customs and DOE state officers. The main objectives were to inform, increase awareness, enhanced knowledge and improve understanding on the control of import and export of the Ozone Depletion Substances (ODS). The programme also aimed to further enhanced the smart partnership between DOE and Royal Customs Department.

A demonstration on the use of Refrigerant Identifier was conducted to familiarise the participants on the use the equipment. This is important to enable the officers to identify the refrigerants during the inspection at the port of entries and on-site inspection. Apart from the above, a field trip to Tanjung Kupang Checkpoint, Gelang Patah Johor was organised and participants were briefed on the process of import and export inspection procedure. The training programme was successful in meeting its objectives and both agencies decided to further continue the programme in the future.



ACTIVITIES



HCFC PHASE OUT MANAGEMENT PLAN STAGE II – CONSULTATIVE WORKSHOP WITH INTERNATIONAL EXPERTS IN FOAM SECTOR, 20th - 24th AUGUST 2017, GRAND BLUE WAVE HOTEL, SHAH ALAM

Under HCFC Management Plan (HPMP) Stage I, thirteen (13) polyurethane (PU) successful foam manufacturer recipients from MLF had completed their conversions to cyclopentane, resulting in the phase-out of 860 MT (94.6 ODP tonnes) of HCFC-141b. Through the technical assistance (TA) programme, four local systems houses had customized at least

one low-GWP formulation and shared their experiences with downstream clients.

Under Stage II of HPMP implementation, another 67.94 ODP of HCFC 141b used in the foam sector is targeted from 403.91 ODP of HCFC. With this amount, Malaysia will reach the target of 35% of HCFC phase out by 2020. For the 1st phase of this stage (2017 – 2018), only 10 companies with consumption of more than 5 metric tonnes will be given financial assistance to convert their production by using



cyclopentane while the rest will be allowed to continue using HCFC 141b until there are alternatives available in the market before the end of HPMP Stage II.

Polyurethane foams for various applications are manufactured in Malaysia. The sector has experienced steady growth in recent years primarily driven by the economic development and increase in purchasing power of the population, and growth in the construction and cold chain industry

Under the HPMP Stage II, the focus is more on long term environmental and occupational sustainability while selecting alternative substances and technologies. Thus, the selection of alternative substance is governed by the factors such as favourable physical and chemical properties for the concerned application, being inert and stable, compatible with existing materials, preferably not flammable and toxic, with zero ODP and low GWP as well as easily available.





as to give guidance to the foam enterprises in implementing the phase out projects.

A two day visit to foam enterprises and system houses ranging applications from making panels, roofing, ice box, commercial refrigeration were organised. In this visits, the experts, DOE officers and also UNDP shared their knowledges and expertises to discussed issues pertaining to the phasing out HCFCs project.



In addition, the technology selection is governed by the factors such as-proven and reasonably mature technology, end-product properties and performance should be maintained, cost-effective conversion with minimal disruption of current manufacturing operations, compliance with established local and international standards for health safety and environment, low overall direct and indirect CO₂-equivalent emissions and implementable in a relatively short time frame.

In this regards, The Department of Environment (DOE) Malaysia in collaboration with the local and International Foam Experts, alternative suppliers as well as UNDP experts from New York and Bangkok had organized a one-day Consultative Workshop on 21st August 2017 at Grand Blue Wave Hotel, Shah Alam, Selangor. The aim of the Workshop was to share the experts knowledge and experiences as well



ATMOsphere ASIA 2017, 6th SEPTEMBER 2017, BANGKOK

ATMOsphere was established as the most influential forum for discussions on the business case for natural refrigerants across the continents, ATMOsphere Asia 2017 was held at its first destination in Southeast Asia (SEA) and one of the growing Heating, Ventilation, Air Conditioning, and Refrigeration (HVAC&R) industry hubs in the region, Thailand. ATMOsphere Asia 2017 was a unique opportunity to help inform South East Asia (SEA) policy makers about global developments in natural refrigerants.

The international community was gathered to share experiences and discuss market trends with government representatives from the SEA region, contractors, domestic and foreign manufacturers, suppliers and end users.

The program offers the participants end user and supplier panels, policy, market trends and technology case study sessions to explore the latest developments and case studies from industrial refrigeration, commercial and light refrigeration, Air Conditioning and heat pumps as well as training and standards for natural refrigerants.



Figure 8: NOU from Malaysia presenting paper at ATMOsphere Asia 2017 held on 6 September 2017 at Hotel Sofitel Bangkok Sukhumvit



The organiser, SHECCO has invited Malaysia's NOU to share the experience with regards to the implementation of natural refrigerant under the HPMP implementation. Under HPMP Stage I, CO₂ Demonstration Project was approved by the Multilateral Fund with the objective to reduce ozone depletion substances and greenhouse gas emission through the installation of zero-ODP and low-GWP refrigerant for refrigeration unit in commercial sector. Mr. Chai Chun Leong from Coolcare (M) Sdn. Bhd., the maintenance company of the project representing Jaya Grocer, the host of the Project, presented on the technical issues of the demonstration project.

The forum had been beneficial to the participants in terms of sharing experiences and knowledge towards finding a solution on reducing the impacts to ozone layer and global warming in HVACR industries.

INTERNATIONAL OZONE DAY CELEBRATION, 5th OCTOBER 2017, PUTRAJAYA

The Ozone Day celebration was officially opened by YB Dato Sri Dr. Haji Wan Junaidi Bin Tuanku Jaafar, Minister of Natural Resources and Environment on 5th October 2017 at Hotel Pullman, Putrajaya. The Secretary General Ministry of the Natural Resources and Environment, YBhg. Dato 'Sri Azizan Bin Ahmad together with approximately 500 other guests from government agencies, private sector, non - governmental organizations, industries, UNDP, Malaysian Air Conditioning & Refrigeration Association (MACRA), Certified Training Centers (ATCs) as well as school children around Putrajaya attended the ceremony.



Figure 9: YB Dato Sri Dr. Haji Wan Junaidi Bin Tuanku Jaafar, the minister of Natural Resource & Environment during the launching of the HPMP Stage II Document.

The International Ozone Day celebration annually reflects the international community's efforts towards a healthier environment for the sake of future generations. It has been celebrated globally every year on September 16 since 1994 to commemorate Party's commitment to the Montreal Protocol in protecting the ozone layer. In conjunction with the 30th Anniversary of the Montreal Protocol and to celebrates the success of the Montreal Protocol as one of the Multilateral Environmental Agreements that has succeeded in conserving the ozone layer and in reducing the impact of climate change, the theme "Caring for All Life Under the Sun" was chosen and supported by "We are all Ozone Heroes" campaign organised by the Ozone Secretariat in collaboration with the eminent and popular film production agency the "Marvel Comics".

During the opening ceremony, the YB Minister launched the HCFC Phase Out Management Plan (HPMP) Stage II Document where the highlight of the launching ceremony was the appearance of "Iron Man" being the "Ozone Hero" which resembled the continuous efforts of the hero in protecting the ozone layer.

School children and all guests were given the opportunity to capture their photograph with the favourite icon "the Iron Man" at the photo booth. Apart from that, guests were also able to visit the exhibition booths that were set up to showcase the use and applications of ODS and alternatives that are

available in the market. Among the exhibitors were the Fire and Rescue Department showcased the halon application, Taiyo Shoji, through JICA project on the exchanging of Recycle & Reclaim Technology, Daikin (M) Sdn. Bhd. on R32 air conditioner and few other machine suppliers.

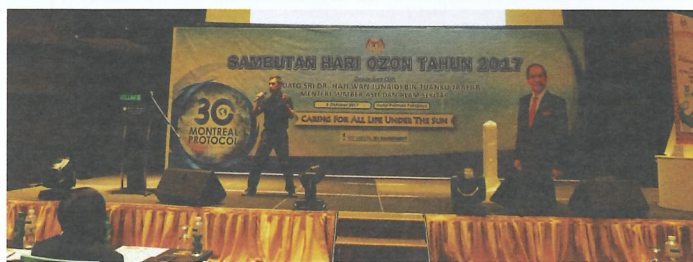
The International Ozone Day Celebration 30th anniversary poster published by the United Nation Environment with ozone layer protection awareness materials has been produced and distributed to all guests aiming to enhance the promotion campaign on protecting the ozone layer.



REFRESHER COURSE ON REFRIGERANT MANAGEMENT COURSE IN OZONE DEPLETING SUBSTANCE (ODS) RECLAMATION PROJECT AND CARBON DIOXIDE (CO₂) R-744, 3rd - 6th OCTOBER 2017, PUTRAJAYA

The National Ozone Unit (NOU) through Department of Environment (DOE) had organised a Refresher Course on Refrigerant Management In ODS Reclamation Project and Carbon Dioxide (CO₂) R-744 in Refrigeration and Air Conditioning Sectors (RACs) on the 3rd until 6th October 2017 at Pullman Lakeside, Putrajaya. This event was held in conjunction with the International Ozone Day celebration for Malaysia.

The course was attended by 150 master trainers and technicians who were involved directly in the Refrigeration and Air Conditioning Sectors (RACs) mainly from Authorised Training Centers (ATC) and other related industry players. The course aimed to inform and promote recycling and reclaim technology of used refrigerants particularly ODS. These used refrigerants can be send to the 6 reclamation centers which were funded under the Malaysia HPMP Stage-1 located at 6 different zones throughout Malaysia. These centers are able to reclaim CFC, HCFC and HFC where the machines supplied are in compliance to the Air Conditioning Heating and Refrigeration Institute (AHRI) and Underwriters Laboratories (UL).



The participants were also being exposed to the Carbon Dioxide (R-744) technology especially on the handling and managing of the equipment by the Panasonic Japanese and local experts. R-744 is classified as A1 refrigerant class where it has a non-flammability property. On the other hand, R-744 or carbon dioxide (CO₂) is viewed as a good alternative to the HCFC-22 (R-22) in refrigeration sector as it has zero ODP value and very low GWP . However, system using R-744 as refrigerant requires to be operated at a higher pressure (i.e. 6MPa) compared to the system using R-22 as refrigerant.

Thus, special consideration in the handling and management of refrigeration equipment needs to be taken in order to prevent and reduce the safety risk associated with flammability and high pressure issue.

MALAYSIA-TIMOR LESTE SOUTH – SOUTH COOPERATION ON CAPACITY BUILDING FOR THE IMPLEMENTATION OF MONTREAL PROTOCOL, 11th - 13th DECEMBER 2017, MALAYSIA



Under the South - South Cooperation, A capacity building on Malaysia's experienced in the implementation of Montreal Protocol was organised by National Ozone Unit (NOU) Department of Environment Malaysia for Timor Leste NOU and Customs Officers from 11th -13th December 2017 in Putrajaya, Malaysia. The objectives of the capacity building were to share experiences in the implementation of Montreal Protocol and to exchange ideas and knowledge on issues and challenges during the implementation.

The program started with presentation on status of implementation of the Montreal Protocol in Malaysia and Timor Leste at the Department Of Environment office in Putrajaya. Both parties discussed the gaps and constraints on the implementation of Montreal Protocol and ways to improve and strengthen the implementation of Montreal Protocol.

A site visit was held to an equipment supplier, Dynotech Sdn Bhd located in Glenmarie Shah Alam, Selangor. The purpose of this visit was to learn on the use of Refrigerant Identifier (RI) in identifying the type of refrigerant in the container.

The program continued with a site visit to Royal Malaysia Customs Department located at North Port, Port Klang,

Selangor. Royal Malaysia Customs Department is the authority responsible for controlling the import /export of Ozone Depletion Substances (ODS) at the border. The delegations from Timor Leste were briefed on Malaysia Customs Regulation and procedure with regards to import / export of Ozone Depleting Substances (ODS).

The delegations were then brought to Oriken Polyurethane Sdn Bhd , a system house and one of the Multilateral Fund recipients of HPMP Stage 1.

On the final day, the delegations visited Universiti Kuala Lumpur-Malaysia France Institute (UniKL-MFI), one of the appointed Authorised Training Center (ATC). ATC's were appointed by DOE in collaboration with other Ministries such as Ministry of Youth and Ministry of Human Resource aiming in organising Certification Program for Service Technician (CSTP). During the visit, UNIKL-MFI also showcased the demonstration project and provided information on R-32 unit performance with regards to energy consumption and the cooling performance.

LIST OF SIX MINI RECLAIM CENTRES

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93050 Kuching, Sarawak

Tel : 082-645 319
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Mile 5 ½, Jalan Tuaran,
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Fax : 088-425 979

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40300 Shah Alam, Selangor.

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Fax : 03-5541 0132

Aurora Chemicals Sdn. Bhd.

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47120 Puchong, Selangor.

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Fax : 03-8062 3118

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