



OCT 13 2021

**DENR ADMINISTRATIVE ORDER  
NO. 2021 - 31**

**SUBJECT: CHEMICAL CONTROL ORDER (CCO) FOR HYDRO-  
FLUOROCARBONS (HFCs)**

Pursuant to the provisions of Executive Order No. 192 entitled "Reorganization Act of the Department of Environment and Natural Resources", series of 1987, Republic Act No. 6969 entitled "Toxic Substances and Hazardous and Nuclear Wastes Control Act of 1990", DENR Administrative Order (DAO) No. 29, series of 1992 entitled "Implementing Rules and Regulations of Republic Act 6969", DAO No. 05, series of 2005 entitled "Toxic Chemical Substances for Issuances of Chemical Control Orders", Republic Act No. 8749 entitled "Philippine Clean Air Act of 1999", and Philippine Senate Resolution No. 25, dated 10 March 1993 concurring with the ratification of the Montreal Protocol on Substances that Deplete the Ozone Layer as adjusted and amended, the Department hereby promulgates the following Chemical Control Order, hereinafter referred to as CCO for Hydrofluorocarbons (HFCs):

**SECTION 1. Basic Policy.** It is the policy of the State to regulate, restrict or prohibit the import, export, use, manufacture, transport, processing, storage, possession or sale of chemical substances that emit Greenhouse Gases to the atmosphere in order to abate or minimize their risks and hazards to public health and the environment.

**SECTION 2. Objectives.**

- a. Reduce the risk of exposure of human health and the environment to Hydrofluorocarbons (HFCs)
- b. Increase awareness on the toxicity of HFCs, as well as the availability of technically superior and safe alternatives
- c. Ensure the proper implementation of the existing framework and appropriate prevention-based programs to mitigate, reduce, and eliminate risks from HFCs

**SECTION 3. Scope and Coverage.** This CCO shall cover the following controlled substances contained in Annex F of the Montreal Protocol:

Group	Substance	100-Year Global Warming Potential (GWP) value
<b>Group I</b>		
CHF <sub>2</sub> CHF <sub>2</sub>	HFC-134	1,100
CH <sub>2</sub> FCF <sub>3</sub>	HFC-134a	1,430
CH <sub>2</sub> FCHF <sub>2</sub>	HFC-143	353
CHF <sub>2</sub> CH <sub>2</sub> CF <sub>3</sub>	HFC-245fa	1,030
CF <sub>3</sub> CH <sub>2</sub> CF <sub>2</sub> CH <sub>3</sub>	HFC-365mfc	794
CF <sub>3</sub> CHFCF <sub>3</sub>	HFC-227ea	3,220
CH <sub>2</sub> FCF <sub>2</sub> CF <sub>3</sub>	HFC-236cb	1,340

Group	Substance	100-Year Global Warming Potential (GWP) value
CHF <sub>2</sub> CHFCF <sub>3</sub>	HFC-236ea	1,370
CF <sub>3</sub> CH <sub>2</sub> CF <sub>3</sub>	HFC-236fa	9,810
CH <sub>2</sub> FCF <sub>2</sub> CHF <sub>2</sub>	HFC-245ca	693
CF <sub>3</sub> CHFCHFCF <sub>2</sub> CF <sub>3</sub>	HFC-43-10mee	1,640
CH <sub>2</sub> F <sub>2</sub>	HFC-32	675
CHF <sub>2</sub> CF <sub>3</sub>	HFC-125	3,500
CH <sub>3</sub> CF <sub>3</sub>	HFC-143a	4,470
CH <sub>3</sub> F	HFC-41	92
CH <sub>2</sub> FCH <sub>2</sub> F	HFC-152	53
CH <sub>3</sub> CHF <sub>2</sub>	HFC-152a	124
<b>Group II</b>		
CHF <sub>3</sub>	HFC-23	14,800

**SECTION 4. Definition of Terms.** As used in this Order, the following terms shall be defined as:

- 4.1 **Alternative substance** – a replacement of ODS with zero ozone depleting potential (ODP), such as HFC or such other substances that may be discovered in the future that holds the same characteristics.
- 4.2 **Back conversion** – the act of charging a system or equipment with ODS/HFCs that is already phased-out/phased-down.
- 4.3 **Baseline Consumption of HFC** – the average country consumption of HFCs in CO<sub>2</sub> equivalent for the years 2020-2022 plus 65% HCFC baseline consumption.
- 4.4 **Bureau** – the Environmental Management Bureau.
- 4.5 **CDA** – Cooperative Development Authority
- 4.6 **Chemical substance** – any organic or inorganic substance of a particular molecular identity, including:
- i) Any combination of such substances occurring in whole or in part as a result of chemical reaction or occurring in nature; or
  - ii) Any element or uncombined chemical.
- 4.7 **Consumption** – the sum of production and imports minus exports of ODS/HFCs. The amount recycled and reused is not considered as production. Since the Philippines does not produce nor export ODS/HFCs, the country's consumption is equivalent to imports as measured by ODP weight/ CO<sub>2</sub> equivalent.

- 4.8 **Controlled substance** – any chemical that is subject to control measures, such as a phase-out/phase-down requirement pursuant to the schedule of the Montreal Protocol on Substances that Deplete the Ozone Layer, as amended.
- 4.9 **DP** – Discharge Permit
- 4.10 **Dealer** – any person that sells refrigerants such as, ODS, HFCs, HFOs, HCs, refrigerants containing equipment or other refrigerants containing product in any form for the purpose of trade.
- 4.11 **Department** – the Department of Environment and Natural Resources.
- 4.12 **Disposal of refrigerants** – the collection, sorting, transport, storage, and treatment of unwanted refrigerants.
- 4.13 **ECC** – Environmental Compliance Certificate
- 4.14 **Exporter** – any person that undertakes to bring outside of the country an equipment, substance, or product, in any form, including those that are used, stored, restored or recovered, which is intended for direct consumption, warehousing, sale, or distribution in another country. The term also includes a person who brings outside the country any unwanted refrigerants or wastes containing refrigerants.
- 4.15 **Flushing** – the act of cleaning a contaminated refrigeration or air conditioning system or system with burnt compressor by pumping or blowing gas, medium or solvent through the system, then releasing the compounds to the atmosphere or a system in contact with atmosphere.
- 4.16 **Global Warming** – a gradual increase in the overall temperature of the earth's atmosphere generally attributed to the greenhouse effect caused by increased levels of carbon dioxide, chlorofluorocarbons, and other pollutants. *Global warming* occurs when carbon dioxide (CO<sub>2</sub>) and other air pollutants and greenhouse gases collect in the atmosphere and absorb sunlight and solar radiation that have bounced off the earth's surface.
- 4.17 **Global Warming Potential (GWP)** – a measure of how much heat a greenhouse gas traps in the atmosphere up to a specific time horizon, relative to carbon dioxide.
- 4.18 **Hydrofluorocarbons** or **HFCs** – any of several organic compounds composed of hydrogen, fluorine, and carbon. HFCs are produced synthetically and are used primarily as refrigerants. (They became widely used for this purpose beginning in the late 1980s, with the introduction of the Montreal Protocol, which phased out the use of chemicals such as halons and chlorofluorocarbons (CFCs) that contribute to the depletion of Earth's ozone layer. However, while HFCs have an ozone depletion potential of zero, they are **potent greenhouse gases**, and thus their manufacture and use became increasingly regulated in the 21st century.)
- 4.19 **Installation** – any mounting or setting-up of a system, or transfer of equipment from one location to another, which involves opening the system to the atmosphere, such as when the piping has to be cut and reconnected or involving fixed installation to water piping or electricity.
- 4.20 **Kigali Amendment** – amendment adopted by the Parties to the Montreal Protocol on 15 October 2016 and entered into force on 1 January 2019. It aims to reduce the production and consumption of HFCs, potent greenhouse gases (GHGs), over 80% by 2047 and thus to prevent up to 0.4°C Celsius of global warming by the end of this century while continuing to protect the ozone layer.

- 4.21 **Montreal Protocol on Substances that Deplete the Ozone Layer or Montreal Protocol** – the Protocol to the Vienna Convention, signed in 1987 and subsequently adjusted or amended, which commits Parties to take concrete measures to protect the ozone layer by freezing, reducing, or ending production and consumption of controlled substances.
- 4.22 **Ozone** – a gas whose molecules contain three atoms of oxygen, and whose presence in the stratosphere constitutes the ozone layer that protects life against harmful radiation. Ozone is toxic to humans, animals, and plants at high concentrations. It is a pollutant when it occurs in the lower atmosphere in smog.
- 4.23 **Ozone depletion** – the process by which the stratospheric ozone is destroyed by man-made chemicals, leading to a reduction in its concentration.
- 4.24 **Ozone Layer** – a thin, fragile shield created as ozone forms in the stratosphere. This ozone layer envelops the entire earth which efficiently and effectively filters and screens most of the harmful ultraviolet (UV) rays like UV-B.
- 4.25 **Party** – a country that signs and/or ratifies the Montreal Protocol and its relevant adjustments or amendments indicating that it agrees to be bound by the rules set out therein. Article 4 of the Montreal Protocol restricts trade with countries that are not parties to the Protocol.
- 4.26 **Person** – a natural or juridical entity. A person may be an individual, a corporation, partnership, or association.
- 4.27 **Phase-Down** – gradual reduction that leads up to 80% of the baseline consumption in the case of HFCs.
- 4.28 **Phase-Out** – the ceasing of the production and consumption of a chemical substance controlled under the Montreal Protocol except than those considered for essential uses.
- 4.29 **POD** – Philippine Ozone Desk of DENR-EMB.
- 4.30 **PTO** – Permit to Operate
- 4.31 **Process** – the preparation of a chemical substance or mixture after its manufacture for commercial distribution:
- i) In the same form or physical state or in a different form or physical state from that which it was received by the person so preparing such substance or mixture; or
  - ii) As part of an article containing a chemical substance or mixture.
- 4.32 **Recycle** – the act of reducing contaminants in used refrigerants by separating oil, removing condensable, and using devices, such as filter dryers to reduce moisture, acidity, and particulate matter.
- 4.33 **Refrigerants** – Chemical used in a cooling mechanism, such as an air conditioner or refrigerator, as the heat carrier which changes from gas to liquid and the back to gas in the refrigeration cycle.

- 4.34 **Reseller** – any person engaged in the business of buying an equipment, product, or substance in any form from a dealer or an original seller for the purpose of selling it to another.
- 4.35 **Retailer** – any person who sells an equipment, product, or substance in any form directly to a consumer or end user.
- 4.36 **SEC** – Security and Exchange Commission
- 4.37 **Service Provider** – any person engaged in the business of or directly performs the installation, maintenance, service, repair or operation of ODS/HFCs, HFOs/HCs-using equipment located on any land or water body, such as technicians, mechanics, contractors, service shops, and repair shops.
- 4.38 **Servicing** – any act of repair, maintenance, testing, or trouble-shooting of parts, including mechanical and electrical component, of existing ODS/HFCs, HFOs/HCs-using equipment located on any land or water body.
- 4.39 **TESDA** – Technical Education and Skills Development Authority
- 4.40 **Venting** – the practice of intentionally releasing and/or purging ODS/HFCs, HFOs/HCs to the atmosphere.

**SECTION 5. Assessment of new Alternative Substance to ODS.** All relevant data on HFCs and their blends that are not specified in the preceding section and/or in the Philippine Inventory of Chemicals and Chemical Substances (PICCS) shall be submitted to the Bureau for proper evaluation and assessment for inclusion to the PICCS, but must first undergo Pre-Manufacture Pre-Importation Notification (PMPIN).

**SECTION 6. Phase-down Schedule and Control of Importation of HFCs.** All HFC substances under Annex F, Groups I and II of the Montreal Protocol, shall have a phase-down schedule based on the following:

- 6.1. Baseline Consumption is the Average production/consumption of HFCs in 2020, 2021 and 2022 Plus 65% of HCFC baseline production/consumption.
- 6.2. By 01 January 2024, imports shall not exceed the recorded baseline consumption in CO<sub>2</sub> equivalent.
- 6.3. By 01 January 2029, imports shall have been reduced by 10% based on the recorded baseline consumption in CO<sub>2</sub> equivalent.
- 6.4. By 01 January 2035, imports shall have been reduced by 30% based on the recorded baseline consumption in CO<sub>2</sub> equivalent.
- 6.5. By 01 January 2040, imports shall have been reduced by 50% based on the recorded baseline consumption in CO<sub>2</sub> equivalent.
- 6.6. By 01 January 2045, imports shall have been reduced by 80% based on the recorded baseline consumption in CO<sub>2</sub> equivalent.

By this date 01 January 2045, importation of the remaining 20% recorded baseline consumption shall be allowed for the servicing sector.

Consistent with the above phase-down schedule, starting 2024, an annual import quota

allocation system shall be implemented by the Bureau through the Chemical Management Section.

The annual import quota *is non-cumulative*, that is, any remainder of the quota allocation for a particular substance is deemed consumed at the end of the calendar year. The total annual imports shall be in accordance with the phase-down schedule outlined above.

Starting 2024, only those importers that imported HFCs from 2020-2022 will be provided quota allocation and may only apply for Certificate of Registration (COR) and Pre-Shipment Importation Clearance (PSIC).

The Department, through the Bureau, may accelerate the phase-down schedule in all sectors as it may deem necessary through the issuance of an appropriate policy instrument.

**SECTION 7. Registration of Importers.** Any person who imports the aforementioned ODS alternative substances must register with the Department of Environment and Natural Resources (DENR), Environmental Management Bureau (EMB) through the Online Permitting and Monitoring System (OPMS).

A certificate of registration may be granted or renewed only when the applicant can show proof that they have ample knowledge as well as capability to take effective measures, including the necessary equipment, technology, training and infrastructure, to responsibly handle these substances and possible reuse of these substances, minimizing their emissions, and phasing-down their used, replacing them with substitutes or alternatives duly recognized by the Bureau, as shown by proof of attendance or certificate of participation by the applicant's chemical handler in at least one (1) relevant training/seminar organized by the Bureau or DENR or accredited Training Institutions or in-house Training within at least three (3) years from the date of application. The application for registration must be accompanied by the following:

- 7.1 Duly accomplished and notarized application form;
- 7.2 Photocopy of the following documents:
  - 7.2.1 Environmental Permits, if applicable, e.g. Environmental Compliance Certificate (ECC), Hazardous Waste Generator Certificate, Discharge Permit (DP) and Permit to Operate (PTO)
  - 7.2.2 Either SEC registration, DTI registration, CDA registration, whichever is applicable together with the list of its officers;
  - 7.2.3 Safety Data Sheet (SDS) from the manufacturing firm every time an importer applies for registration of a new chemical;
- 7.3 Documents describing applicant's handling procedure, safety precautions, and emergency response for the chemical.

The registration shall be valid only on the calendar year when it was obtained and shall be renewed within the last thirty (30) days of the current calendar year. Notwithstanding the submission of the following documents, the Bureau at its option, when circumstances so warrant, may conduct verification of the applicant's capability as an importer prior the issuance or renewal of said registration.

**SECTION 8. Pre-shipment Importation Clearance (PSIC).** All registered importers must first secure a PSIC through the Bureau's OPMS before they can import and ship within the Philippine territory the aforementioned chemical substances. The PSIC application form must provide the following information:

- 8.1 Commercial name, trade name, or brand name of the substance as usually promoted or marketed by the manufacturers;
- 8.2 Generic name of the substance;
- 8.3 Name and address of the manufacturing company;
- 8.4 Port of loading or the country or port immediately before the substance enters the Philippine territory;

- 8.5 Exporting company or any entity that transacts or brokers the chemical substance from the manufacturer to the importing company; and
- 8.6 Current inventory of the substance that is the subject of the application for importation clearance, including the area or building within which the same is stored either for further transshipment or distribution.

The following supporting documents must likewise be attached to the PSIC application, to wit:

- 8.7 Official receipt showing that the prescribed application fees and charges have been paid;
- 8.8 Photocopy of invoice, contract of sale, receipt, or other similar documents that will serve as proof of purchase of the aforementioned chemical substances;
- 8.9 Photocopy of accomplished Record of Actual Arrival or Shipment accompanied by a photocopy of the Bill of Lading issued by the carrier of the most recent importation made by the applicant. not applicable to new or first-time importers;
- 8.10 Summary of transactions made under the most recent importation clearance issued on the same chemical applied for. not applicable to new or first-time importers;
- 8.11 Import entry and internal revenue declaration;
- 8.12 List of intended buyers and/or end-users; and
- 8.13 Photocopy of Export Permit of ODS alternatives/substance from the Supplier/ Manufacturer
- 8.14 Notice of Arrival

The PSIC must be secured for every shipment and is only valid within the calendar year.

**SECTION 9. Registration of Dealers, Resellers, and Retailers.** All dealers, resellers, and retailers who are engaged in trading, selling, distribution of the above-mentioned chemical substances must register with the EMB Regional Office through OPMS that has jurisdiction over them for a determination of their capability in handling and using the same. Such registration is on a per enterprise or site-specific basis, and not on a per chemical basis. A certificate of registration will be granted or renewed only when the applicant can show proof that they have ample knowledge as well as capability to take effective measures, including the necessary equipment, technology, training and infrastructure, to responsibly handle these substances and possible reuse of these substances, minimizing their emissions, and phasing-down their use by replacing them with substitutes or alternatives duly recognized by the Bureau, as shown by proof of attendance or certificate of participation by the applicant's chemical handler in at least one (1) relevant training/seminar within the last five (5) years from the date of application.

Application for such registration, as well as the renewal thereof, must be accompanied by the following documents:

- 9.1 Duly accomplished and notarized application form;
- 9.2 Environmental Permits, if applicable, (e.g., Environmental Compliance Certificate (ECC), Hazardous Waste Generator Certificate, (Discharge Permit (DP) and Permit to Operate (PTO))
- 9.3 Photocopy of SEC registration or DTI registration or CDA registration, or Local Government permits and clearances with an updated list of its officers; and
- 9.4 Copy of the disposition report of these chemical substance on the previous year.

The Certificate of Registration issued by the EMB Regional Office is valid for the calendar year when it was obtained and shall be renewed within the last thirty (30) days of the current calendar year. Only duly registered dealers, resellers, and retailers may purchase, resell, and distribute the aforementioned chemical substances in the market.

**SECTION 10. Registration of Service Providers for all ODS Alternatives Using Equipment.** All persons (natural or juridical) who are engaged in servicing refrigeration and air-conditioning equipment must register with the DENR EMB-Regional Office who has jurisdiction over their area of operation and/or principal office of their business and to submit the following requirements as attachment to their application, to wit:

- 10.1 Prescribed application form for registration, duly accomplished and notarized;
- 10.2 Copy of the Certificate of Competency for the Technicians issued by the Technical Education and Skills Development Authority (TESDA);
- 10.3 Copy of the Accreditation issued by DTI-Fair Trade and Enforcement Bureau (FTEB);
- 10.4 Copy of Securities and Exchange Commission (SEC) or Department of Trade and Industry (DTI) registration;
- 10.5 Copy of Business Permit;
- 10.6 Environmental Permits, if applicable (e.g., Environmental Compliance Certificate (ECC), Hazardous Waste Generator Certificate, Discharge Permit (DP) and Permit to Operate (PTO);
- 10.7 Printed or JPEG format pictures of standard tools and equipment such as, but not limited to, recovery machine, gauge manifold, vacuum pump, weighing scale, recovery tank, and such other tools and equipment that will be required.

All service providers must have the capability to take effective measures, including the necessary equipment, technology, training and infrastructure, for the purpose of effectively handling ODS alternatives, including responsible re-use of refrigerants, minimizing their emissions, and ultimately phasing-out their use by replacing them with alternative substitutes duly recognized and certified by DENR through the Bureau. This will be validated through the conduct of monitoring and inspection.

All service providers must adhere to the good practices in handling and working with refrigerants set forth in the Code of Practice for Refrigeration and Air-conditioning approved and adopted by DENR in 2013. This will be validated through the conduct of monitoring and inspection by the respective Regional Offices. All Regional Offices are enjoined to submit report of the registered service providers quarterly to the Chemical Management Section. (regarding the registration hereof.)

Issued Certificates of Registration shall be valid for three (3) years, and application for its renewal may be submitted within sixty (60) days prior to its expiration. Terms and conditions stipulated in the Certificate of Registration must be strictly followed.

**SECTION 11. Record of Transaction through OPMS.** All importers, exporters, dealers, retailers, and re-sellers and service providers must keep a record of all transactions to be reflected in the OPMS to generate the annual report which will be utilized by the Bureau.

Records retained by importers, exporters, dealers, retailers, and re-sellers and service providers must be available for inspection at any time by an authorized officer of the Department through the Bureau.

**SECTION 12. Public Access to Records and Confidentiality of Business Information.** Sections 40(1) and 40(2) of DAO No. 1992-29, in which case disclosure of information may only be allowed in cases under Section 40(3) thereof:

1. Any person who is requested to provide information to the Department under Section 16, 17, 18 and 21 of these Rules and Regulations may submit together with the information, a request that such information be treated as confidential.
2. The Department of Environment and Natural Resources may consider a record, report of information or particular person thereof confidential and may not be made public when

such would divulge trade secrets, or sales figures or methods production or processes unique to such manufacturer, processor or distributor or would otherwise tend to affect adversely the competitive position of such manufacturer, processor or distributor, information other than its chemical name and CAS Number (if applicable) be treated as confidential.

**SECTION 13. Capability Building Program.** In order to support the implementation of the HFC phase-down and promote the use of alternative substances, the Department through the Bureau shall formulate a capability-building program (e.g., forum, trainings, workshops and seminars) that will increase research as well as information and education campaign (IEC) efforts on this CCO.

**SECTION 14. Administrative Violations.** Any violations on the provisions of this Order including the following acts and omissions, shall be considered as administrative violations:

- 14.1 Back conversion;
- 14.2 Use of HCFC-141B as blowing agent;
- 14.3 Intentional release or venting into the atmosphere of substances controlled under this Chemical Control Order;
- 14.4 Use of banned ODS or its alternatives as flushing or cleaning agent;
- 14.5 Servicing of refrigeration and air conditioning equipment without the necessary standard tools and equipment required in this CCO;
- 14.6 Non-recording of all transactions on distribution, utilization, servicing, recovery, recycling, storage and disposal by those who handle HFCs;
- 14.7 Transacting with importers, distributors/dealers and service providers that are not registered with concerned government agencies like EMB-DENR, DTI-FTEB; and
- 14.8 Possession of unregistered refrigerants, including mislabeling of controlled substances.

**SECTION 15. Penalty Provision.** Any violation(s) of the provisions of this Order shall be subject to the imposition of an administrative penalty of not less than Ten Thousand Pesos (Php 10,000.00) but not more than Fifty Thousand Pesos (Php 50,000.00) per instance of violation and at the discretion of the imposing authority based on reasonable circumstances as justice and prudence may dictate, pursuant to Section 15 of RA 6969 in relation to Section 43 of DAO No. 1992-29 and DENR Memorandum Circular No. 2005-003 without prejudice to the institution of criminal or civil actions.

**SECTION 16. Separability Clause.** If any provision of this Order shall be held invalid or unconstitutional, the other portions or provisions hereof which are not affected shall continue in full force and effect.

**SECTION 17. Repealing Clause.** All Orders and other similar issuances inconsistent herewith are hereby revoked, amended, or modified accordingly.

**SECTION 18. Effectivity.** This Order shall take effect fifteen (15) days after its publication in a newspaper of general circulation and upon acknowledgement of the receipt of the copy thereof by the Office of the National Administrative Register (ONAR).

  
**ROY A. CIMATU**  
Secretary

