

## National Report for the 12th WMO/UNEP Ozone Research Managers Meeting

### 1. INTRODUCTION

Nepal ratified the Vienna Convention for the Protection of the Ozone Layer, 1985 and Montreal Protocol on Substances that Deplete the Ozone Layer, 1987 (including its London Amendment) on July 6, 1994. Nepal also ratified Copenhagen Amendment, Montreal Amendment, and Beijing Amendment on May 18, 2012 and has started the procedures for ratifying Kigali Amendment (Table 1).

Table 1: Ratification of MEAs on Protection of Ozone Layer and their Ratification by Nepal

S. N.	Convention/Protocol/Amendments	Date of Ratification
1	Vienna Convention for the Protection of the Ozone Layer, 1985	July 6, 1994
2	Montreal Protocol on Substances that Deplete the Ozone Layer, 1987	July 6, 1994
3	London Amendment, 1990	July 6, 1994
4	Copenhagen Amendment, 1992	May 18, 2012
5	Montreal Amendment, 1997	May 18, 2012
6	Beijing Amendment, 1999	May 18, 2012
7	Kigali Amendment, 2016	-

(Source: <https://ozone.unep.org/all-ratifications>)

Environment Protection Act, 2019 and Environment Protection Rules, 2020 (Previously Environment Protection Act, 1996 and Environment Protection Rules, 1997) are the key national legislations for the environmental protection including the phase-out and restrictions of ozone depleting substances. Ozone Depleting Substances Consumption (Control) Rules, 2001 was framed under the Environment Protection Act, 1996.

Nepal completely phased-out the import and consumption of CFC-11 and CFC-12 in 2010. Nepal is implementing its phase-out plan for HCFC-22 starting from 2015 with a 100 % reduction in 2030 (Table 2).

Table 2: Nepal's HCFC Phase-out Target

S. N.	Targeted Time Period	Schedule	HCFC-22 Phase-out Target (MT)
1	2011-2014	Freeze at Baseline	23.04
2	2015	10 % reduction	20.736
3	2017	20 % reduction	18.43
4	2020	50 % reduction	11.52
5	2022	60 % reduction	9.26
6	2025	97.5 % reduction	0.576 (except 2.5 % for servicing use until 2030)
7	2030	100 % reduction	

(Source: Nepal Gazette, December 22, 2014)

Ministry of Forests and Environment (MoFE) grants permission for importing HCFC-22 to the importers with the allocated quantity at the beginning of the year. MoFE works closely with National Ozone Unit, Department of Commerce, Supplies and Consumer Protection, Department of Customs and Nepal Refrigeration and Electro Mechanical Association (NREMA) for issuing the permission of HCFC-22 import quota to the imports and generating its import, sales and stock data.

Nepal prohibited the import, sales/distribution and use of HCFC based equipment starting from January 1, 2017. MoFE started issuing an import recommendation for HFC and other Non-ODS refrigerant gases since 2018. Currently, Department of Environment (DoE) under MoFE issues such recommendation.

## 2. OBSERVATIONAL ACTIVITIES

Department of Hydrology and Meteorology (DHM) works for the meteorological observation and monitoring with its meteorological station network including the measurement of global solar radiation at various locations in Nepal. Air Quality Monitoring Stations established by Department of Environment (DoE) are measuring the meteorological parameters as well as some gaseous parameters.

DHM and DOE still do not have observational activities for UV measurement, column measurement and profile measurement of ozone layer. Ground level ozone is measured in some of the air quality monitoring stations. Other observational activities are related with academic research and other individual researches. Greenhouse Gas (GHG) Inventory was carried out for the base year 1994/95, 2000/01 and 2010/11.

## 3. RESULTS FROM OBSERVATIONS AND ANALYSIS

Nepal's net GHGs Emissions for the Base Year 2010/11 was 28,166.06 Gg CO<sub>2</sub>-eq (Table 3).

Table 3: GHGs Emissions in Three Inventories

Computed CO <sub>2</sub> -eq (Gg)	Base Year		
	1994/95	2000/01	2010/11
Emission	54,043	26,222	54028.73
Removal	14,778	12,775	25862.67
Net	39,265	13,447	28,166.06

*(Source: Nepal's Third National Communication to the UNFCCC, 2021)*

## 4. THEORY, MODELLING, AND OTHER OZONE RELATED RESEARCH

Some researchers have been carried out on Total Ozone, Ultraviolet Index (UVI) index, Total Ozone Column (TOC) in Nepal.

## 5. DISSEMINATION OF RESULTS

DHM and DoE are disseminating their measurement results through their websites. Although they do not carry out observation related to ozone layer, it is expected that these agencies will be able to do observation related to ozone layer and disseminate the results in future.

## 6. PROJECTS, COLLABORATION, TWINNING AND CAPACITY BUILDING

Nepal has a National Ozone Unit receiving support from the Multilateral Fund for the implementation of Montreal Protocol. Collaboration between government agencies and academic institutions on ozone research is increasing.

## 7. IMPLEMENTATION OF THE RECOMMENDATIONS OF THE 11th OZONE RESEARCH MANAGERS MEETING

Nepal still needs the capacity on research relevant to ozone layer. Therefore, technical capacity and financial requirements for observational equipment's are necessary for implementing the recommendations of 11th ozone research manager meeting.

## **8. FUTURE PLANS**

It is necessary to plan for establishing the observational activities for UV measurement.

## **9. NEEDS AND RECOMMENDATIONS**

- Establishment of observational activities for UV measurement, column measurement and profile measurement of ozone layer.
- Encouraging academic institutions for the researches on ozone layer.
- Technical capacity enhancement, training and awareness.
- Financial support.
- Developing the phase-out plan for HFCs.