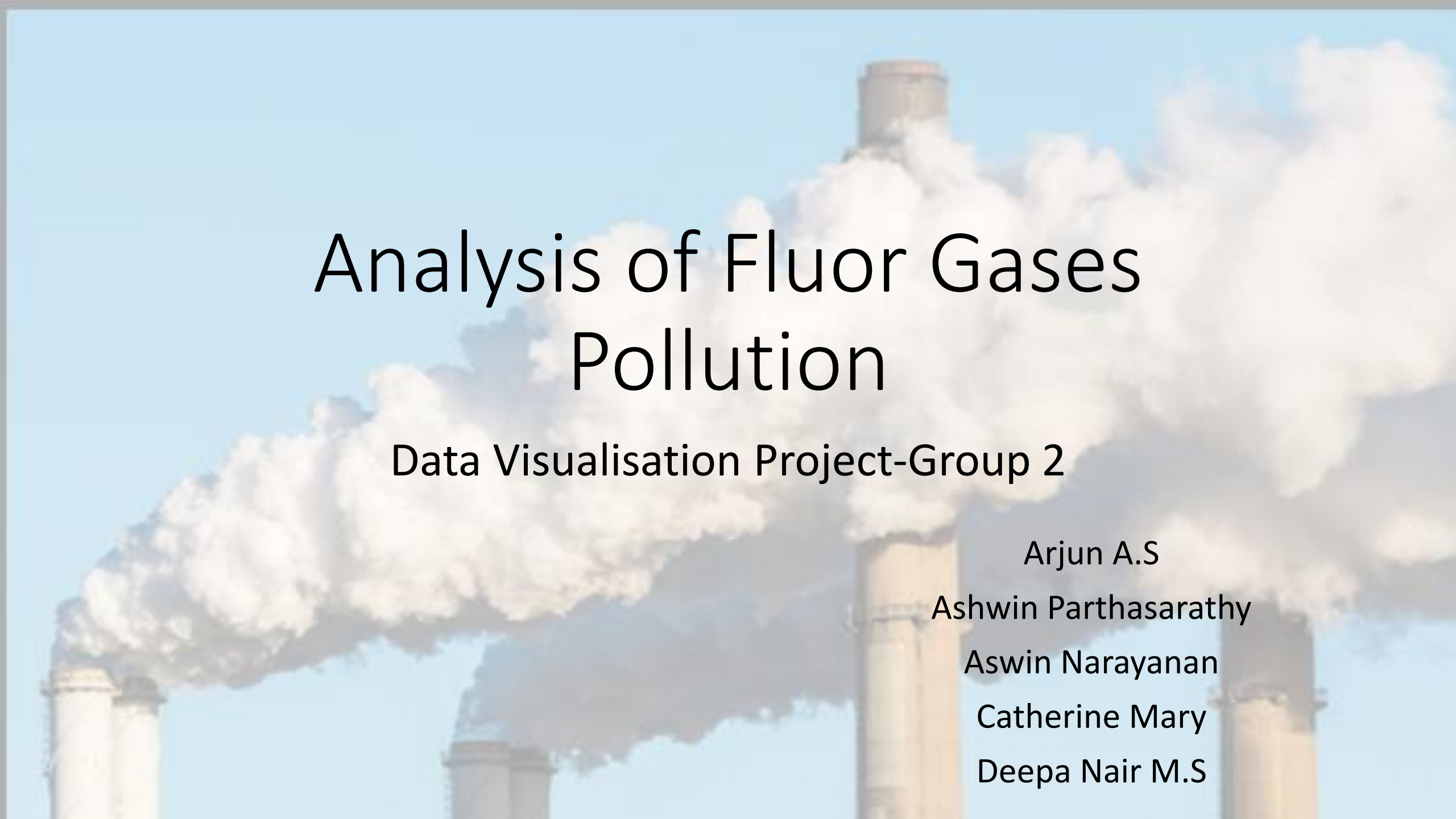

Analysis of Fluor Gases Pollution

Data Visualisation Project-Group 2

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Contents

Introduction

- Fluorinated Gases (F-gases) are a family of man made gases used in a range of industrial applications
- Fluor-Gases Emissions Dataset consists of global and regional emissions of Hydrofluorocarbons (HFCs), Perfluorocarbons (PFCs), Sulphur Hexafluoride (SF6), Chlorofluorocarbons (CFCs) and Hydrochlorofluorocarbons (HCFCs) projected every 10 years beginning in 1990 through 2100.
- This dataset is produced by the Intergovernmental Panel on Climate Change (IPCC) Special Report Emissions Scenarios (SRES) and is distributed by the Columbia University Center for International Earth Science Information Network (CIESIN).

About the Dataset

- The dataset contains global and regional emission values of F-gases for 4 scenarios which are commonly used in environmental and climate studies.
- Scenarios : alternative images of how future might unfold based on characteristics such as demographic change, economic development and technological change.
- In the dataset CFC’s and HCFC’s are grouped together as Ozone Depleting Substances (ODS)

Summary of Scenarios

- A1: rapid economic growth, peak in global population and rapid introduction of new and more efficient technologies.
- A2: continuously increasing global population and regionally oriented economic growth that is slower than in other storylines.
- B1: same global population as in A1 but with rapid changes in economic structures towards a service and information economy and clean and resource-efficient technologies.
- B2: emphasis on local solutions to economic, social, and environmental sustainability, with continuously increasing population intermediate economic development.

Summary of Regions

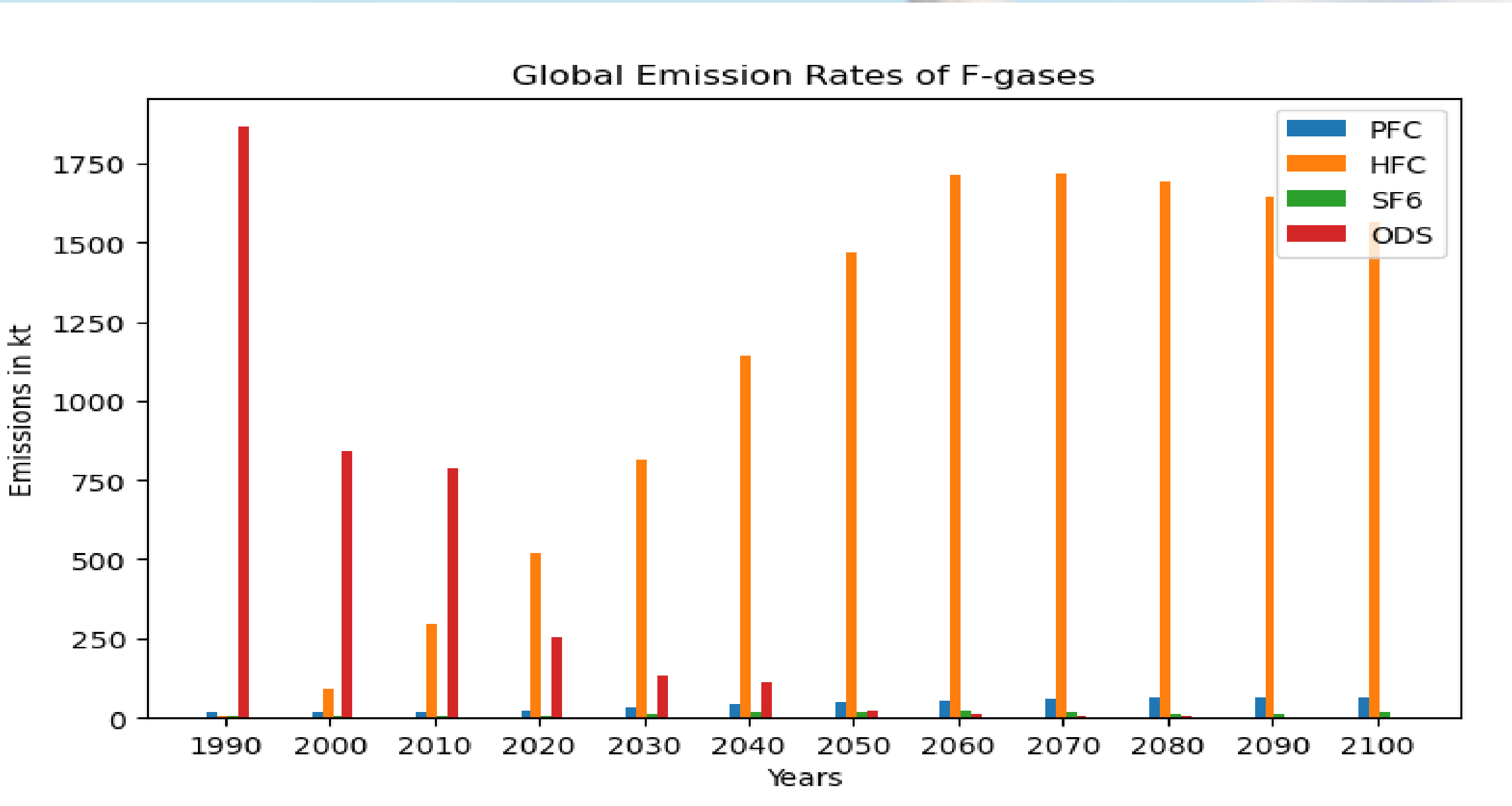
- The regional emissions are projected based on four regions falling under two categories
  - Industrialized Regions
    - OECD90 (Organisation for Economic Cooperation and Development)
    - REF (United States of America)
  - Developing Regions
    - ASIA
    - ALM (Africa, Latin America, Middle East)

Objectives

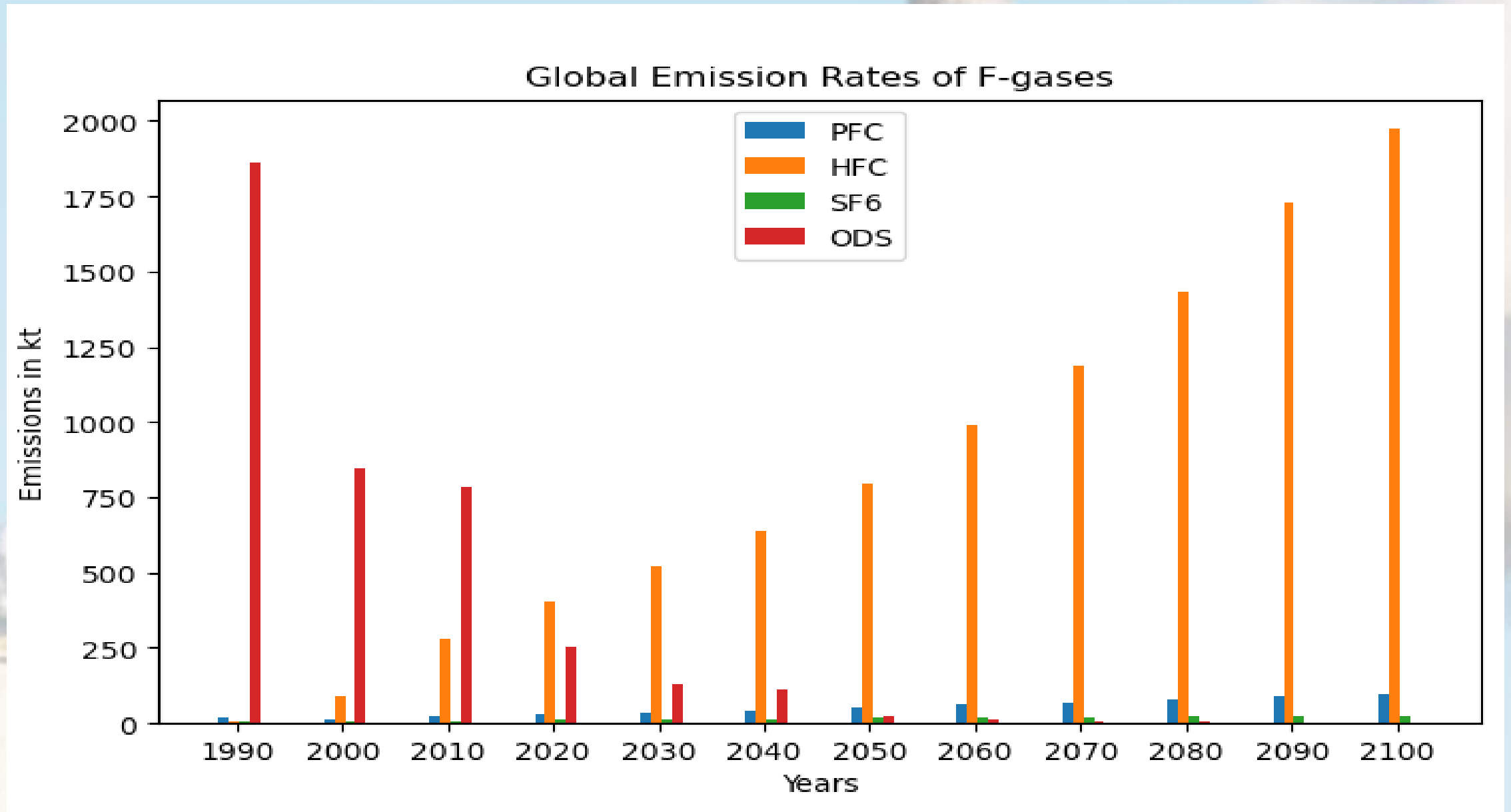
- Global emissions of F-gases calculated for the period 1990-2100 across the four scenarios
- Region wise emissions of F-gases calculated for the period 1990-2100 across the four scenarios
- Comparative analysis of the 4 categories of F-gases emissions with respect to the four scenarios

Data Visualisation and Analysis

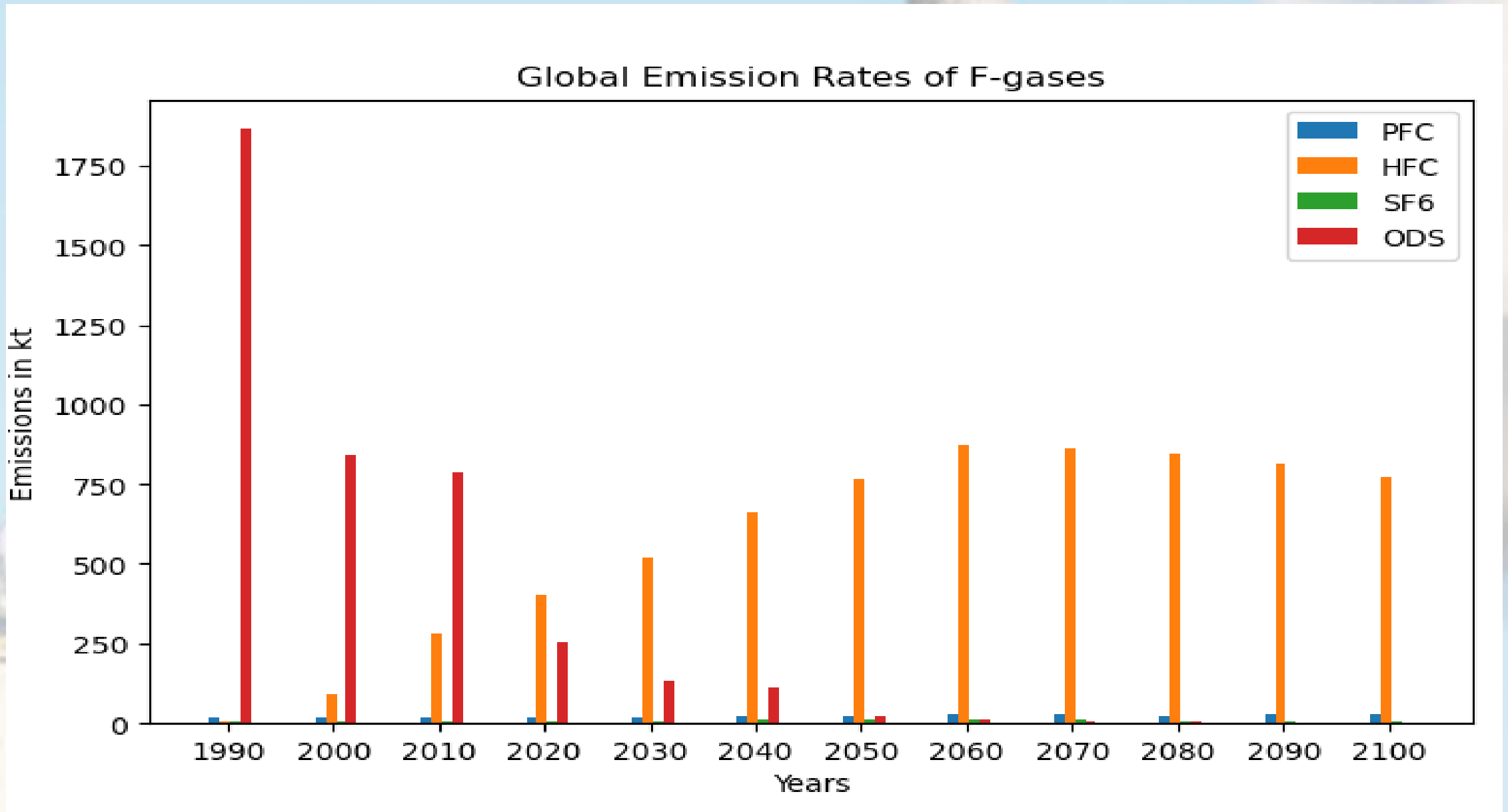
Global Emission Rates in Scenario A1



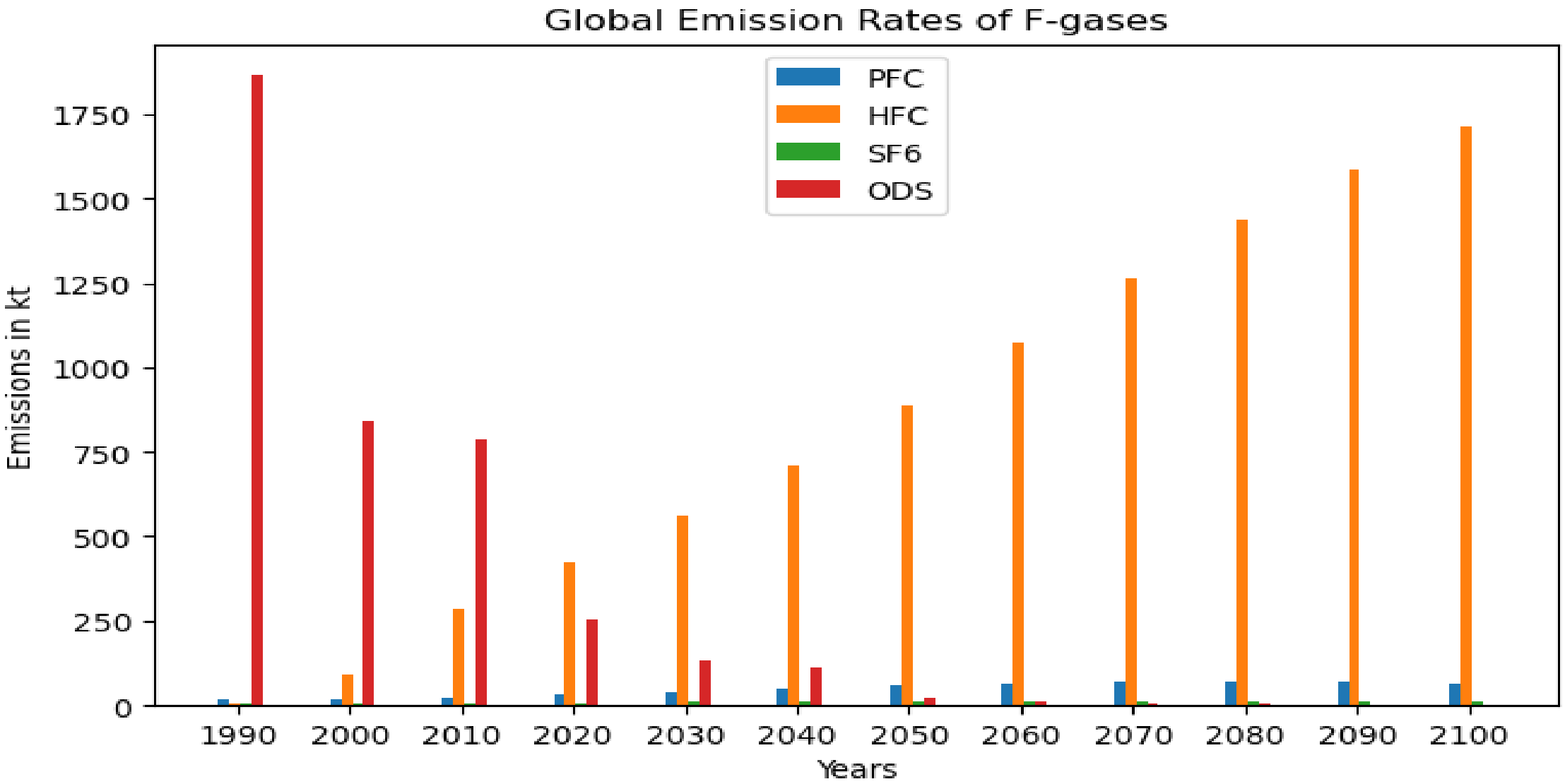
Global Emission Rates in Scenario A2



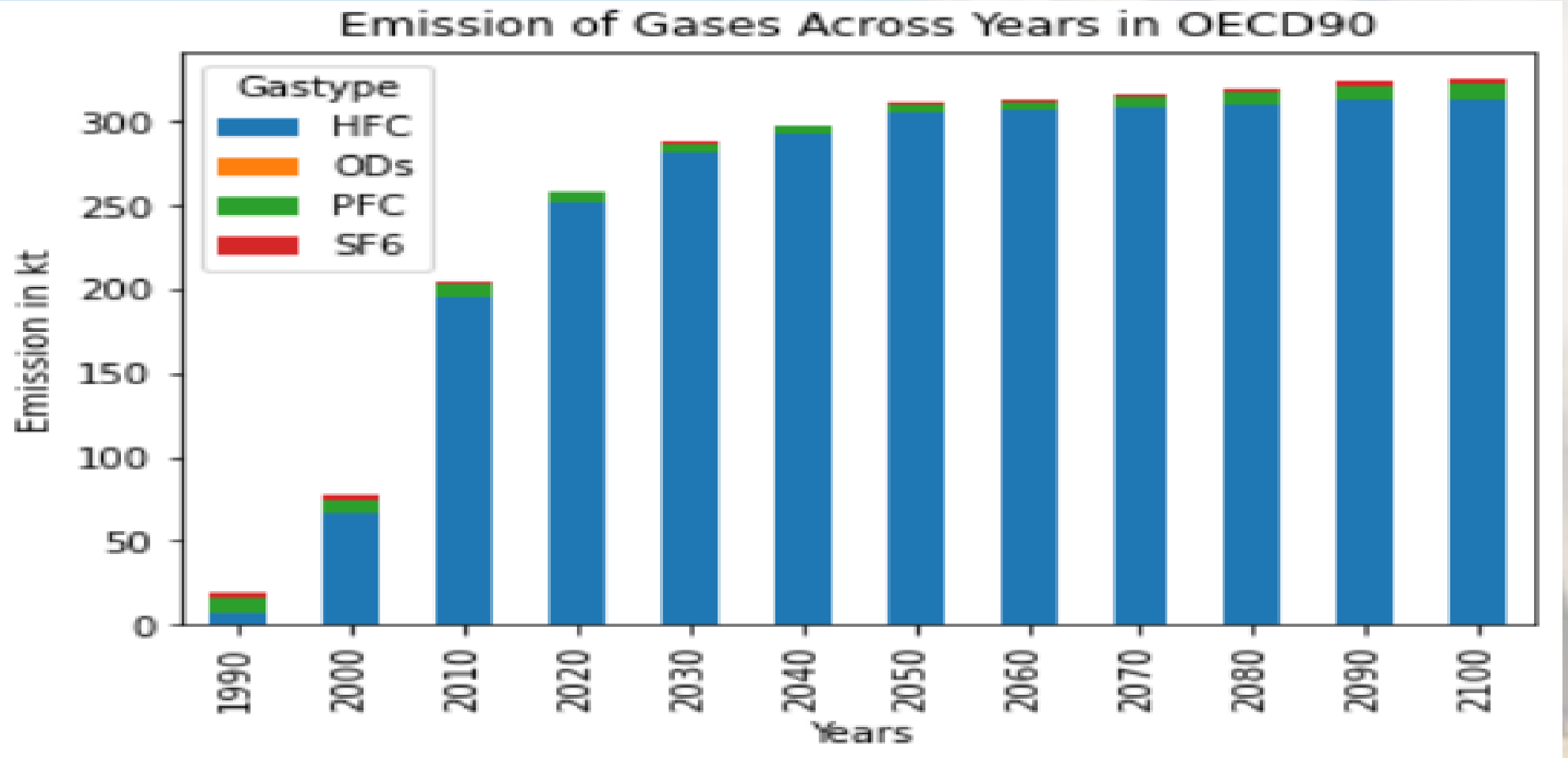
Global Emission Rates in Scenario B1



Global Emission Rates in Scenario B2

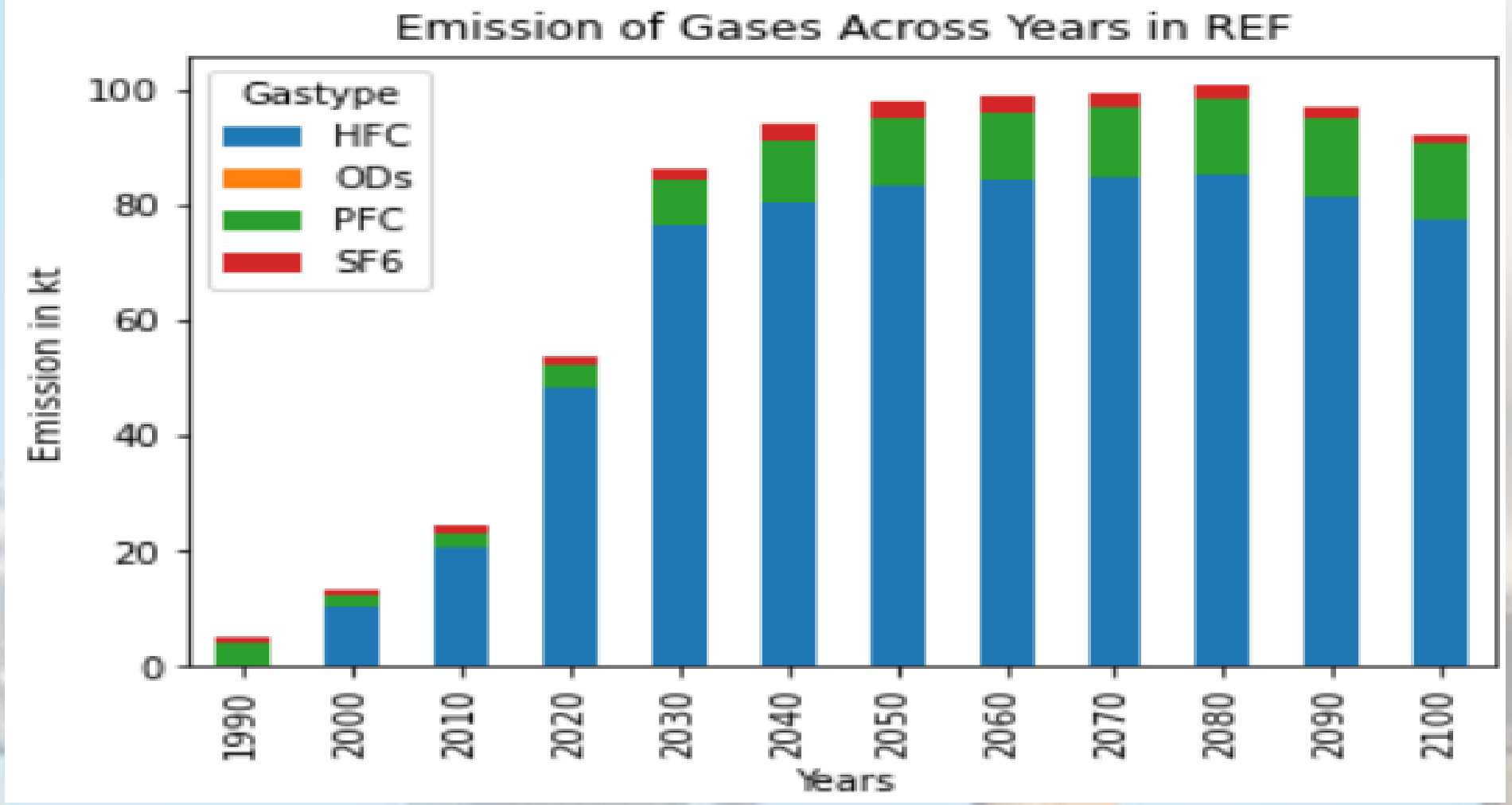


Emission rates in OECD90 in Scenario A1



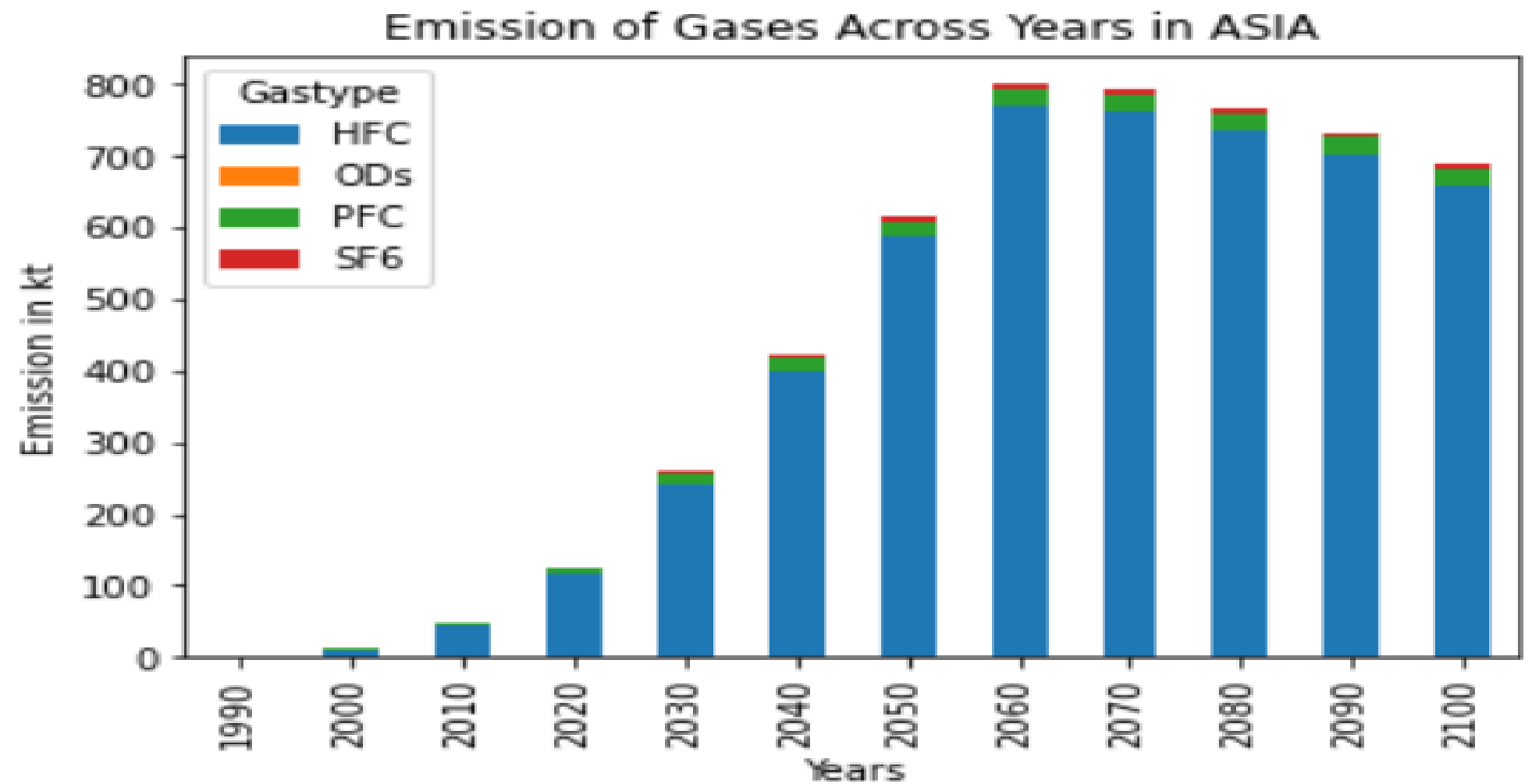
As per the dataset Montreal gases (ODS) are not distributed over regions

Emission rates in REF in Scenario A1



As per the dataset Montreal gases (ODS) are not distributed over regions

Emission rates in Asia in Scenario A1



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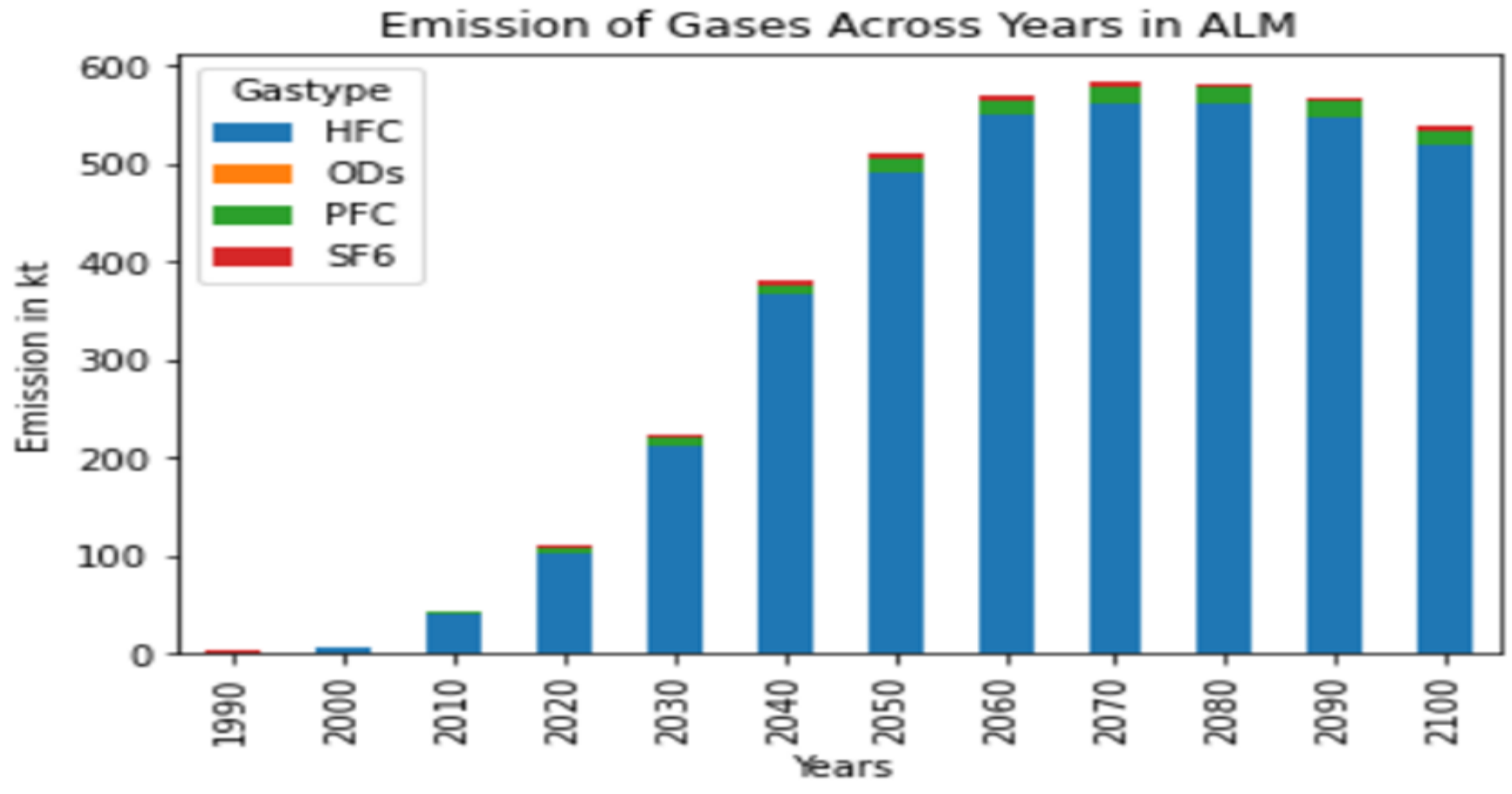
Emission rates in ALM in Scenario A1



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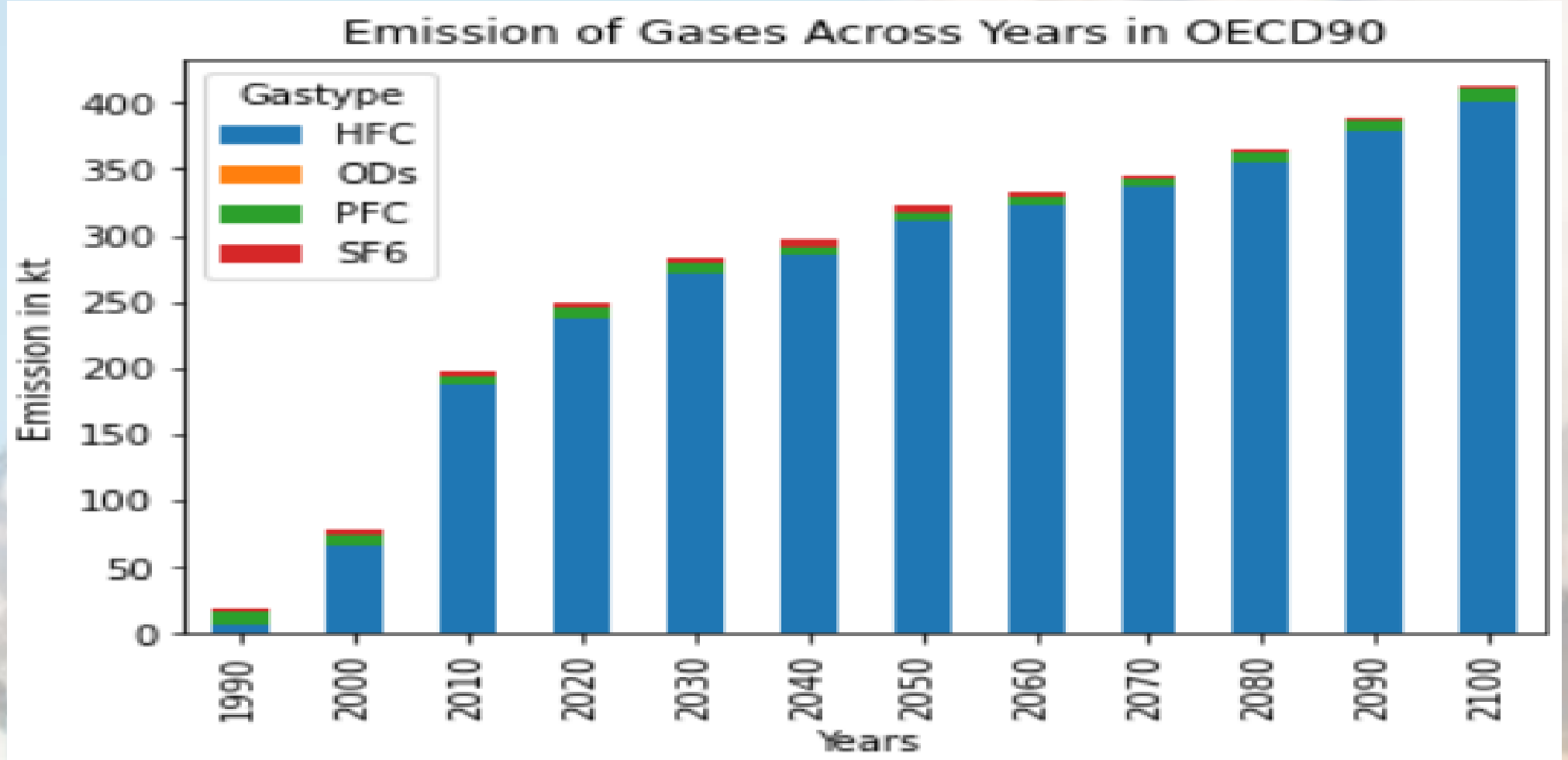
Emission rates in OECD90 in Scenario A2



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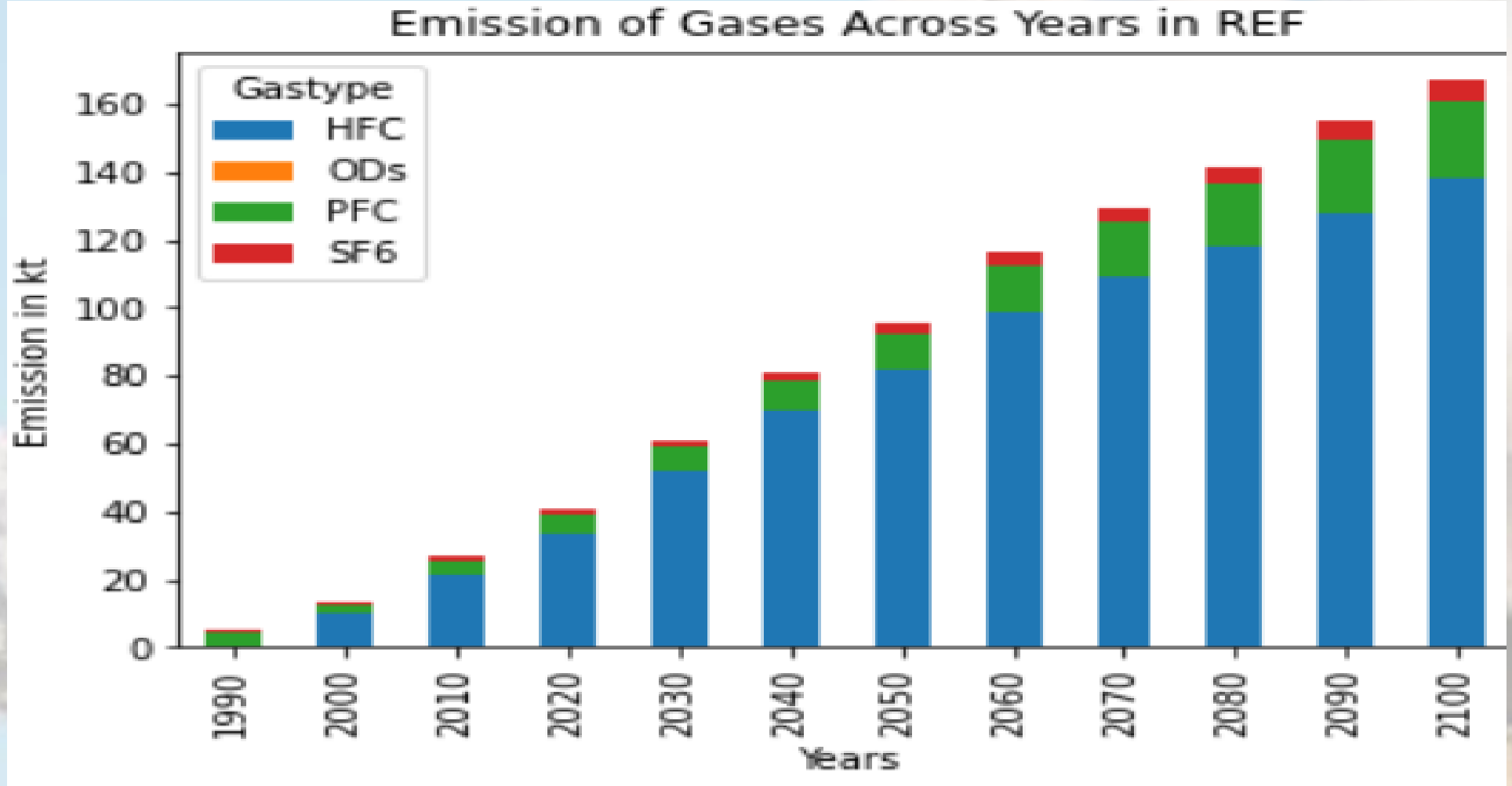

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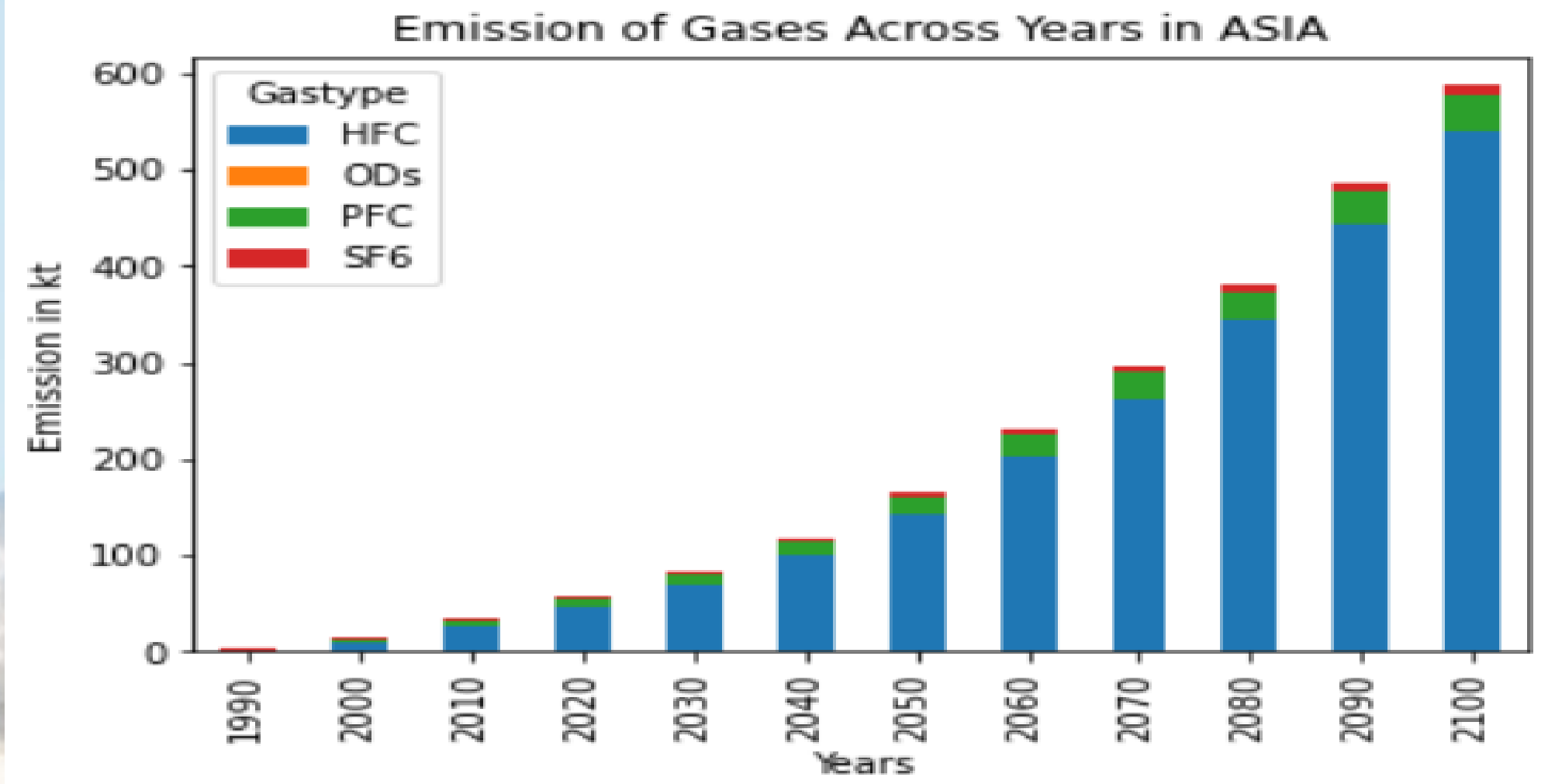
Emission rates in Asia in Scenario A2



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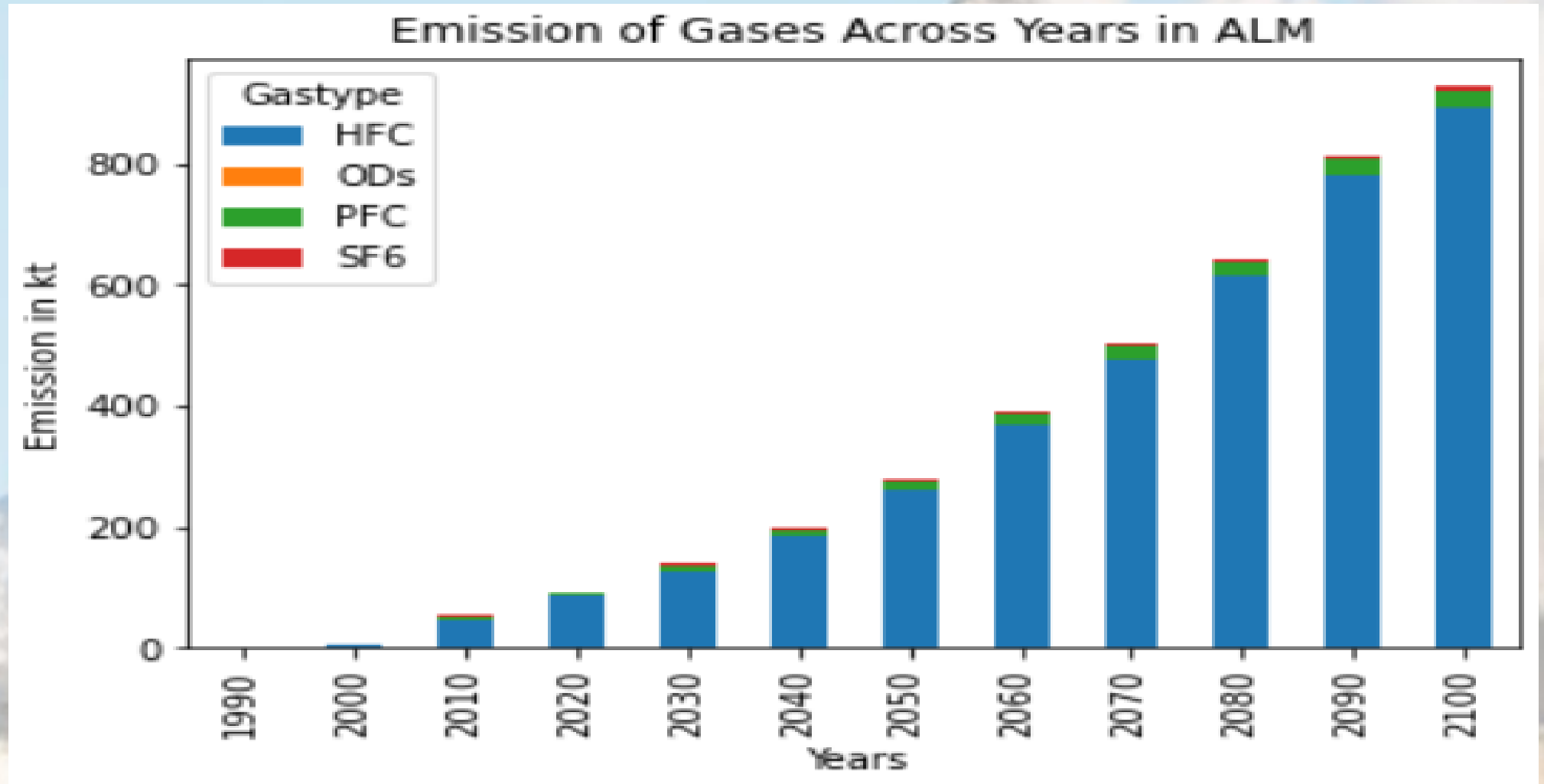
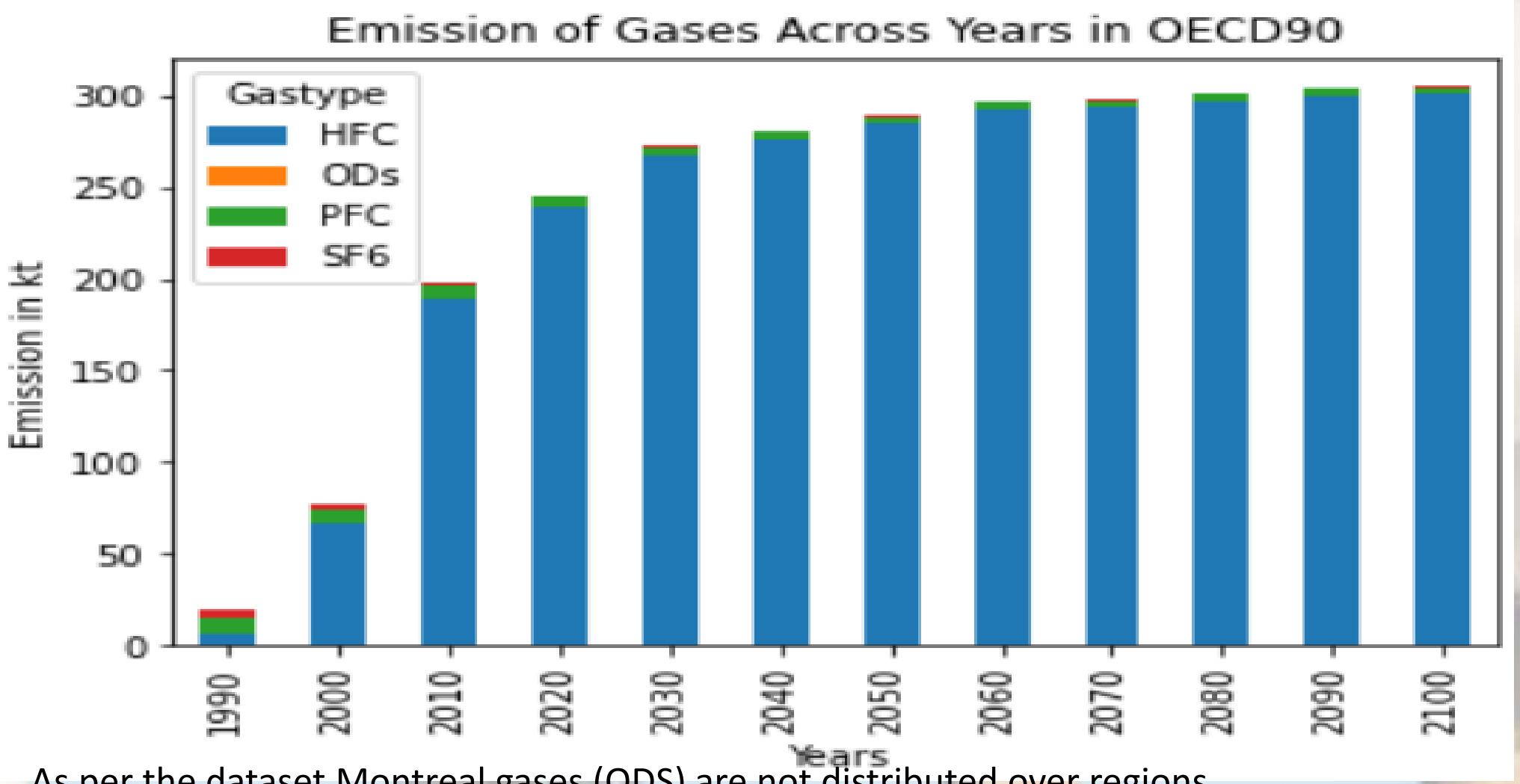
Emission rates in ALM in Scenario A2



As per the dataset Montreal gases (ODS) are not distributed over regions

Emission rates in OECD90 in Scenario B1



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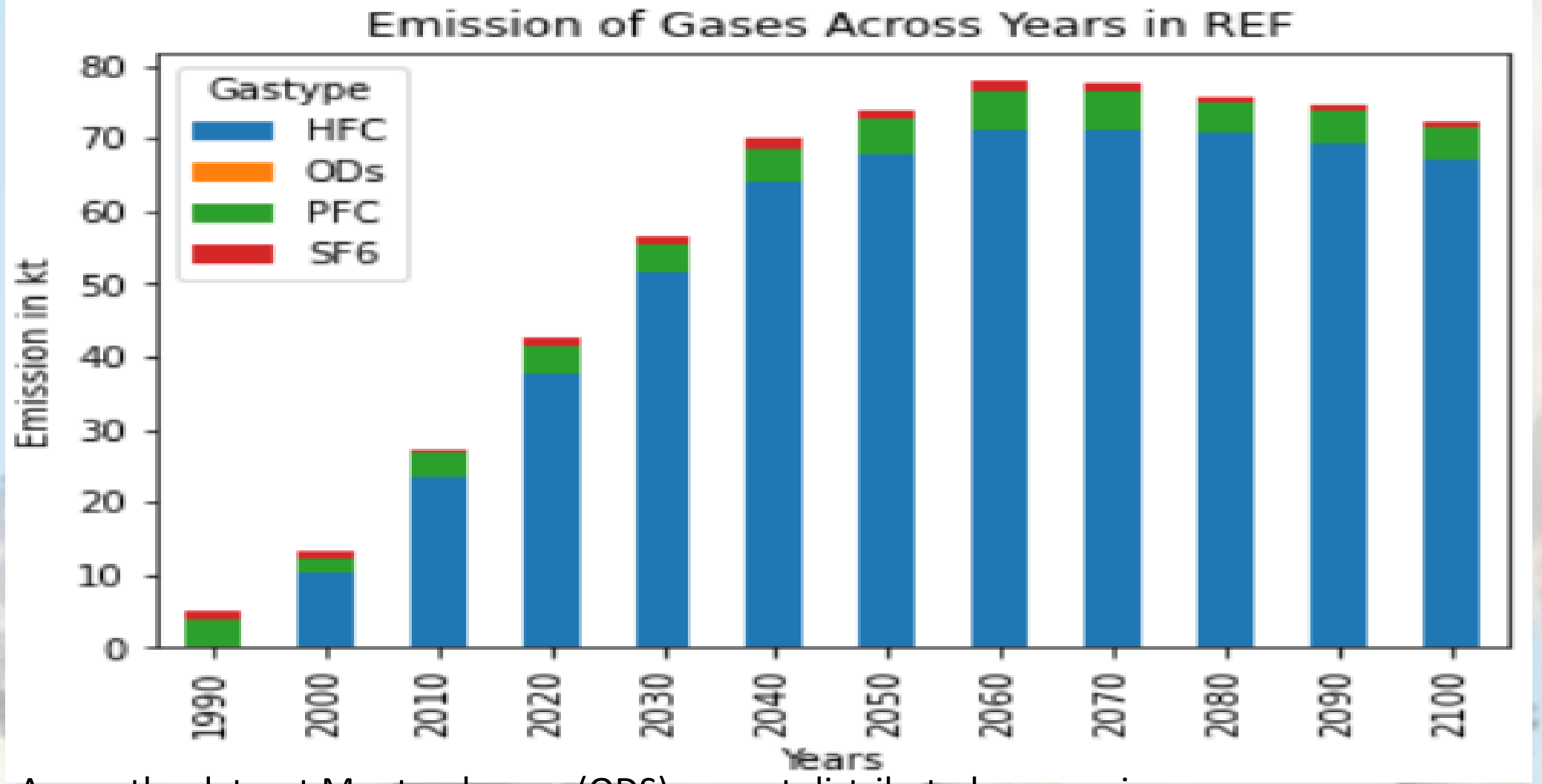
Emission rates in REF in Scenario B1



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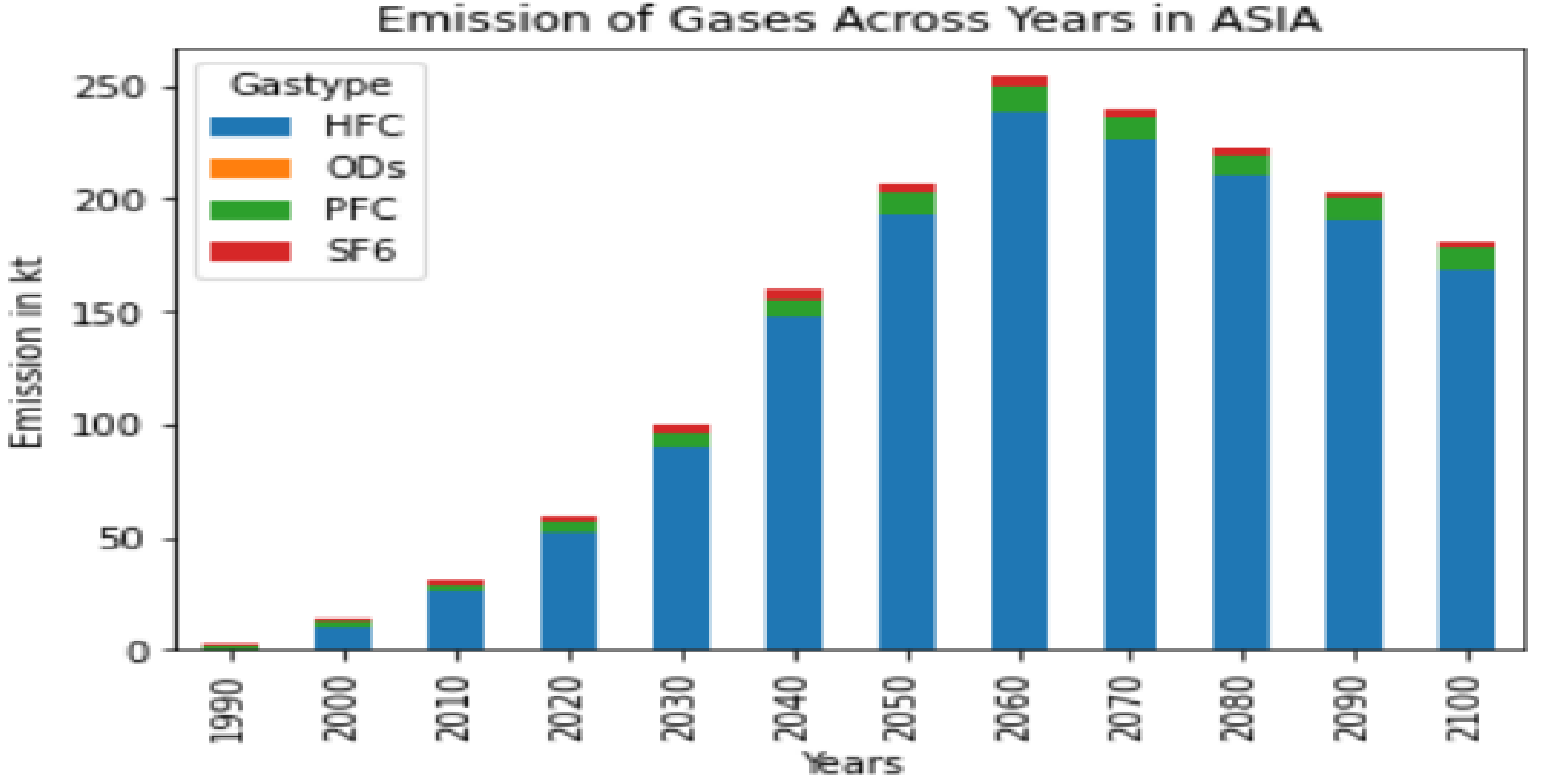
Emission rates in Asia in Scenario B1



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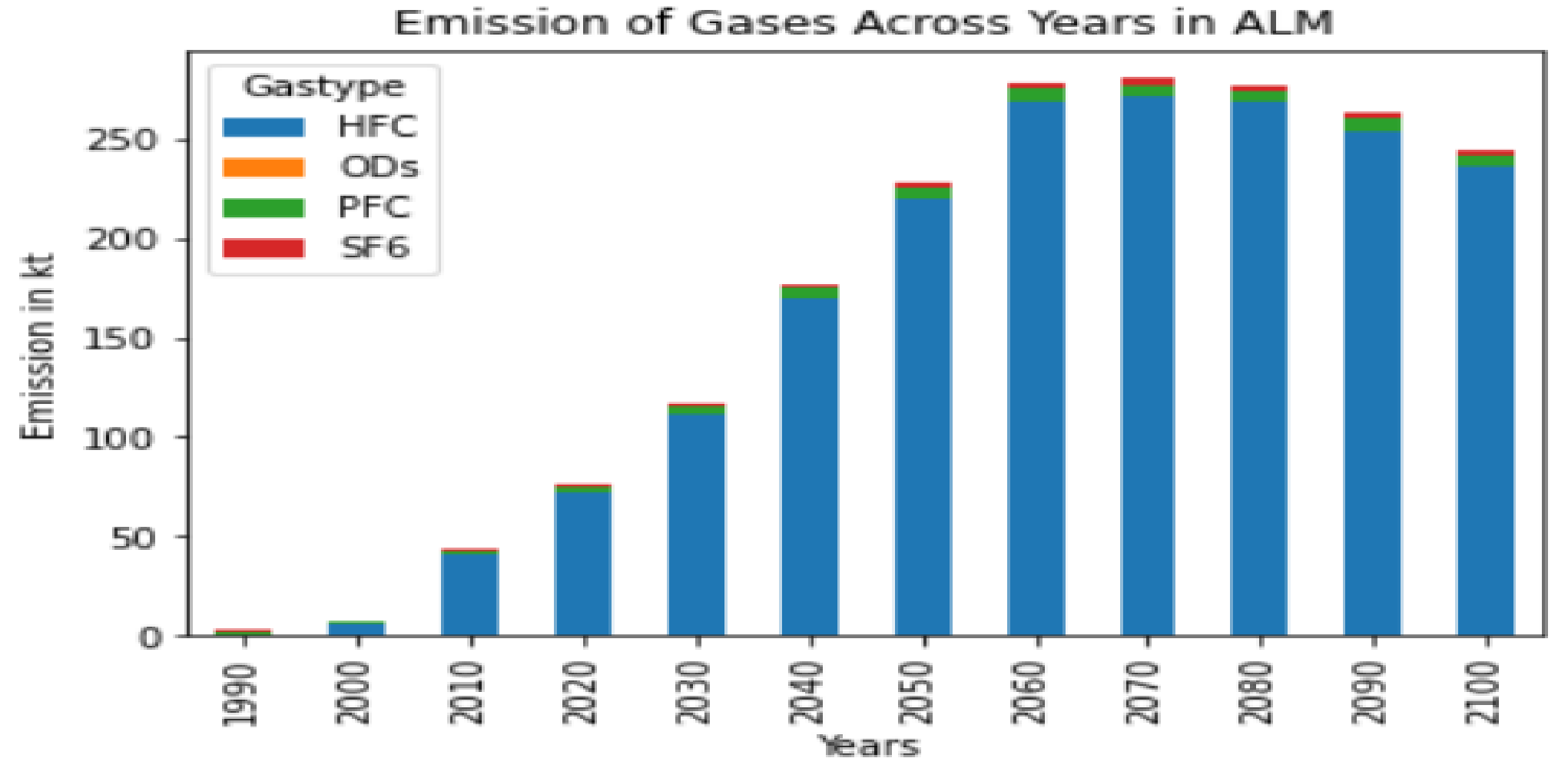
Emission rates in ALM in Scenario B1



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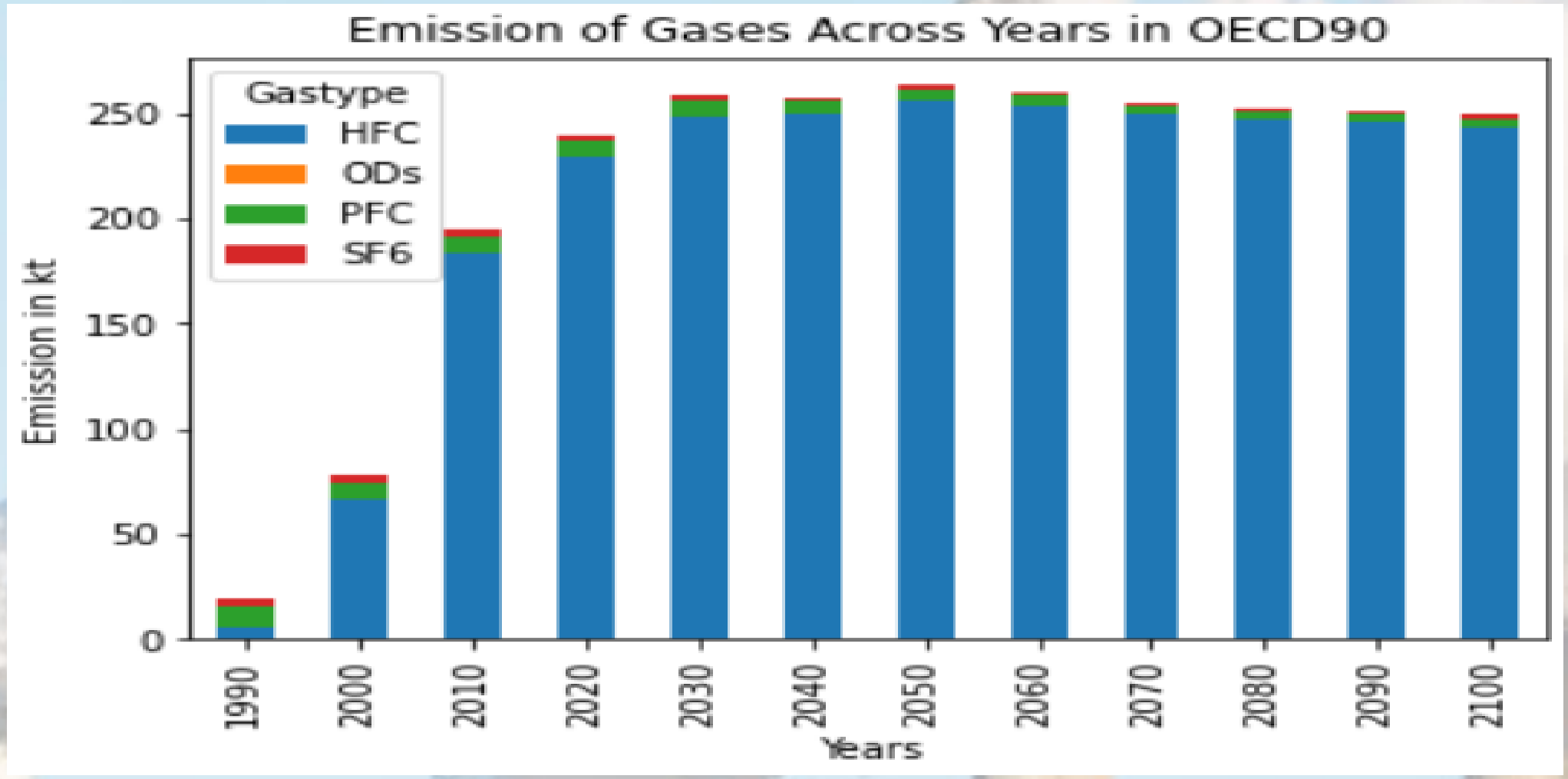

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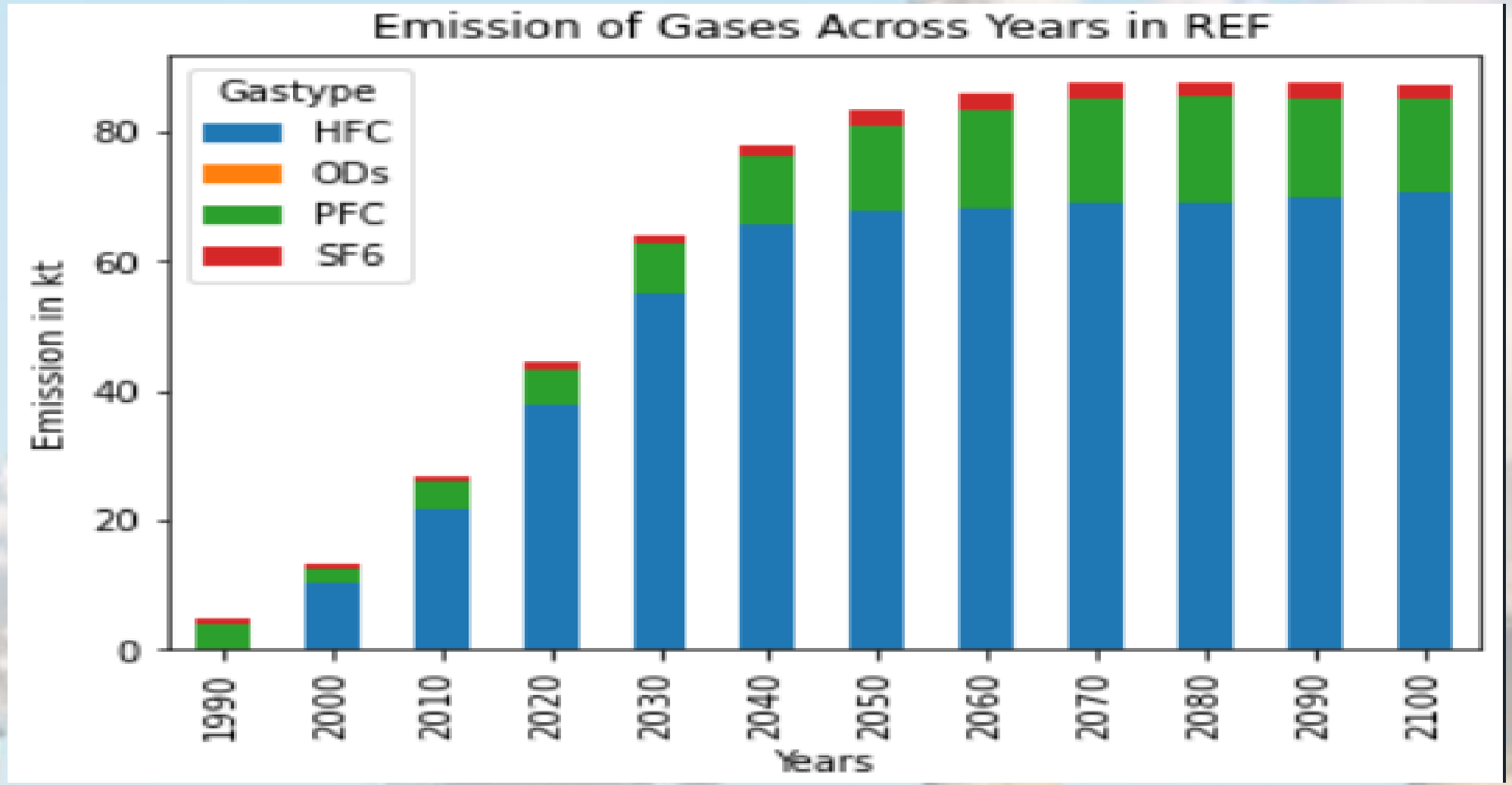

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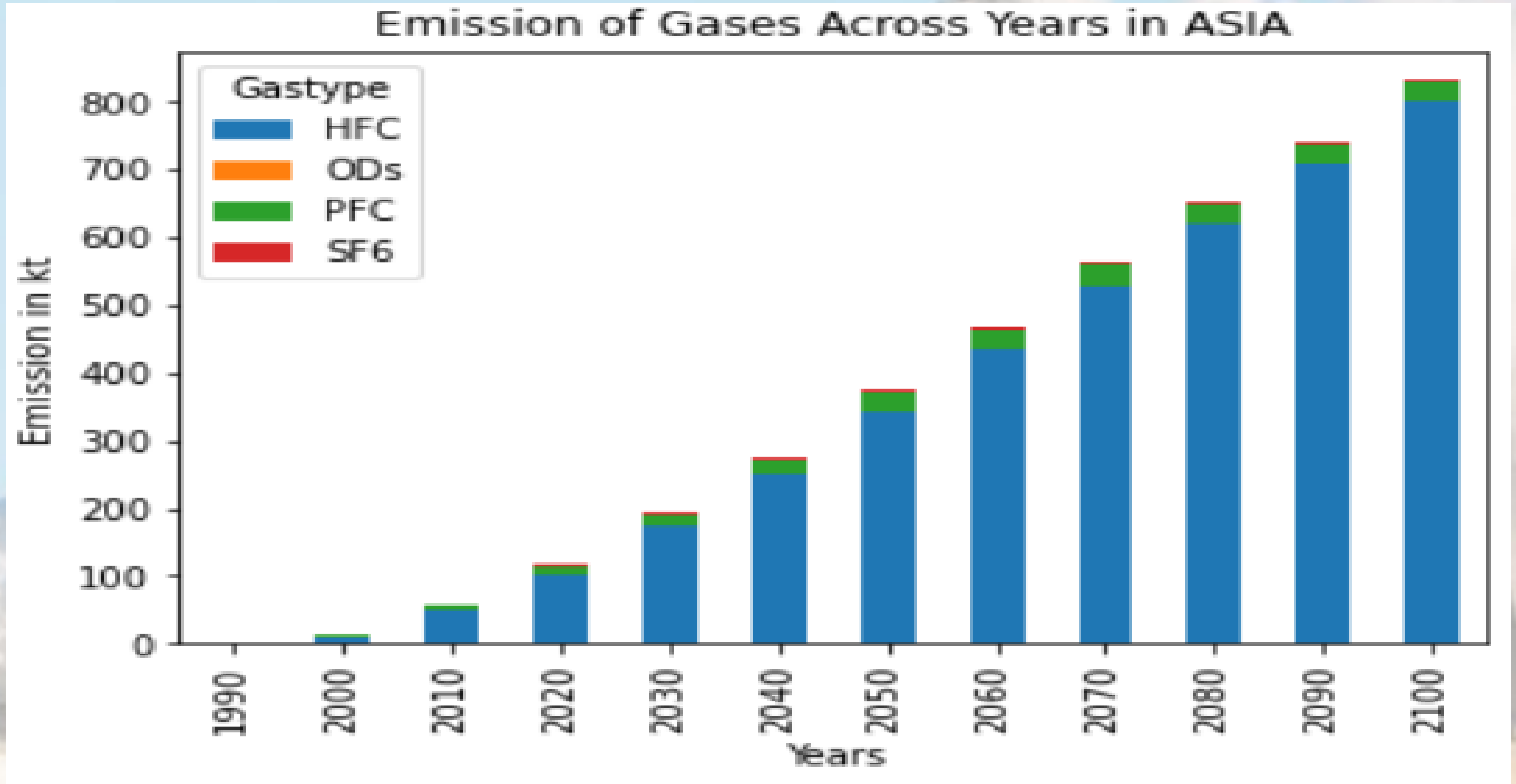
Emission rates in Asia in Scenario B2



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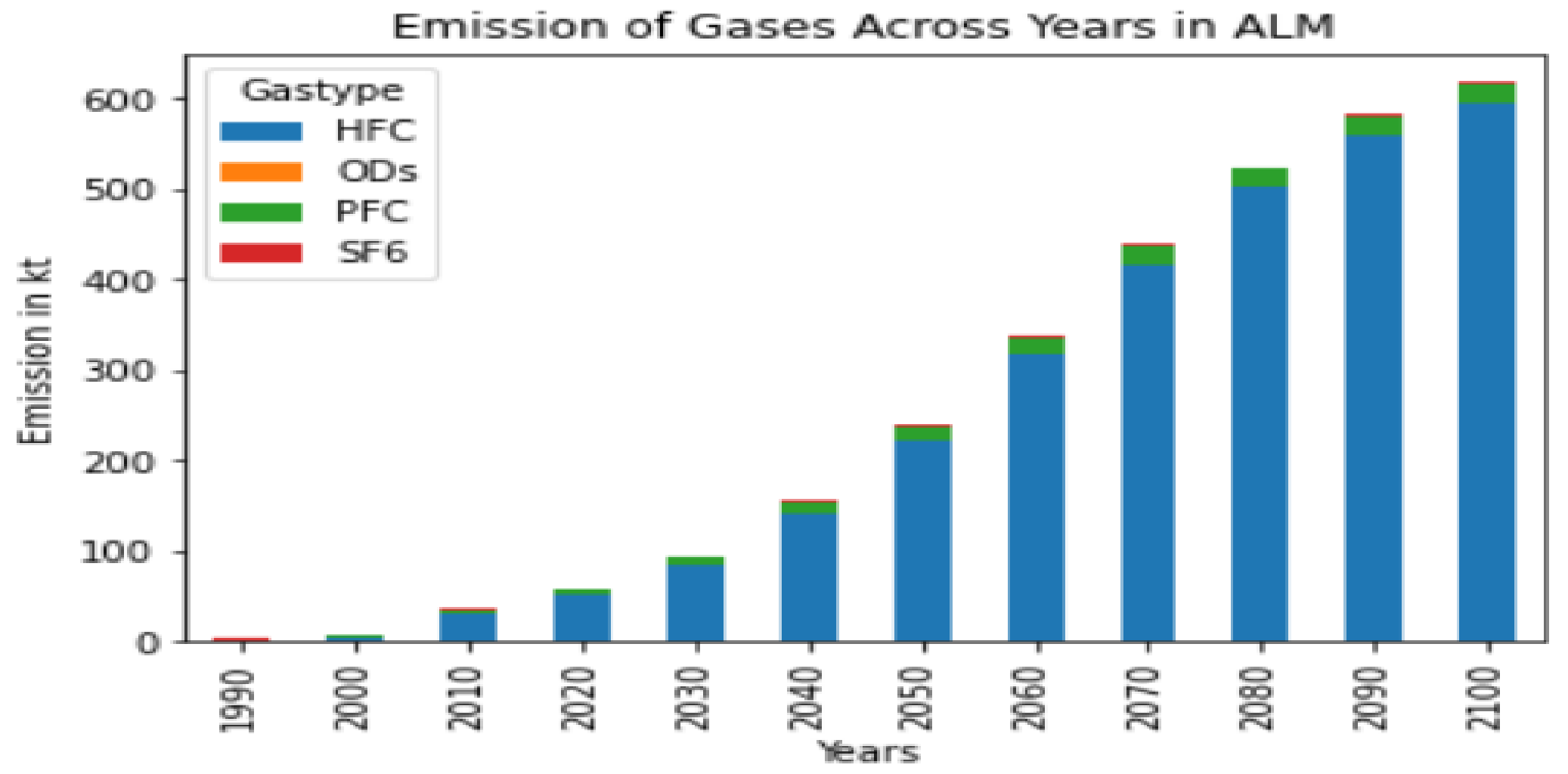
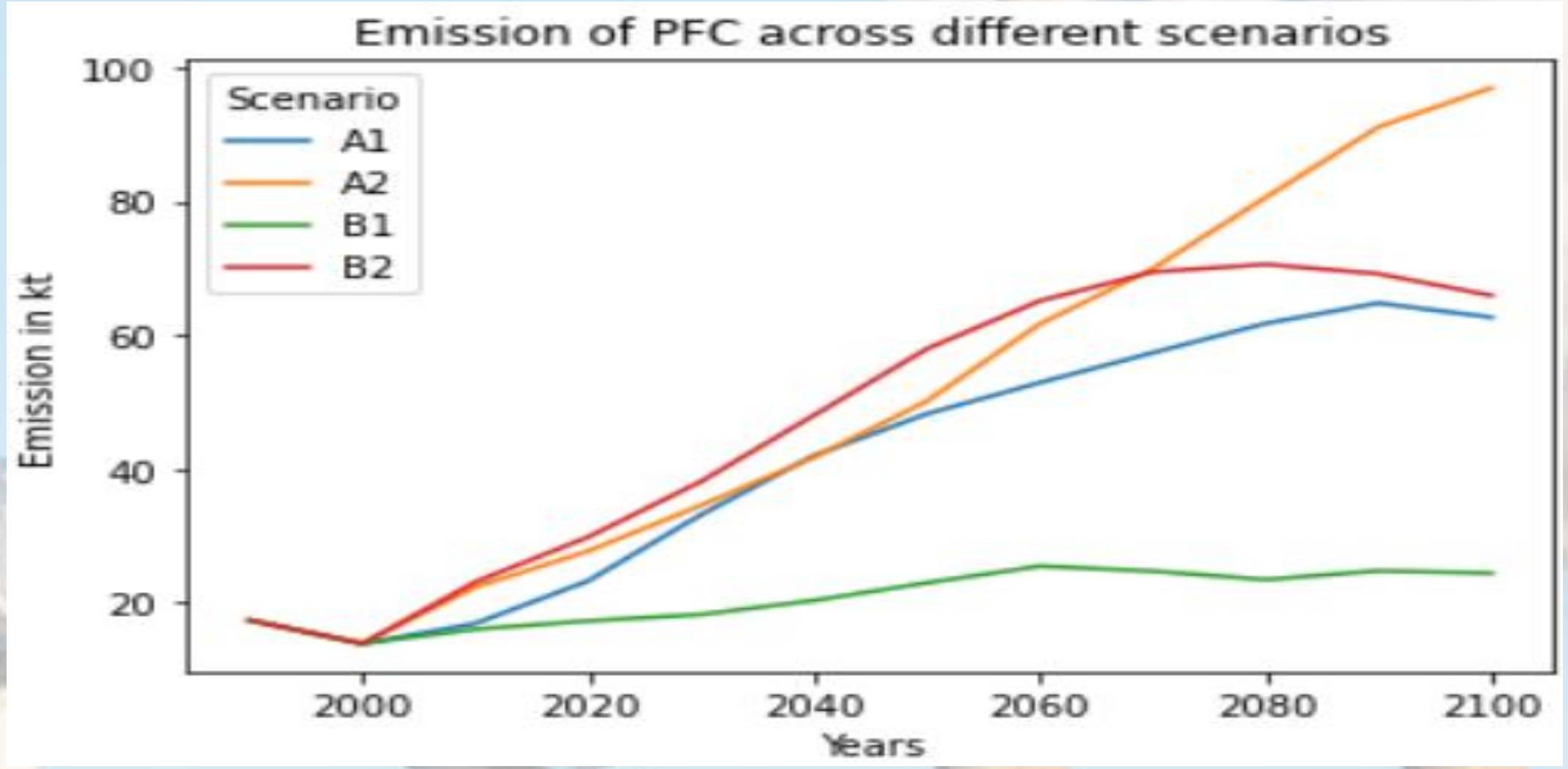
Emission rates in ALM in Scenario B2

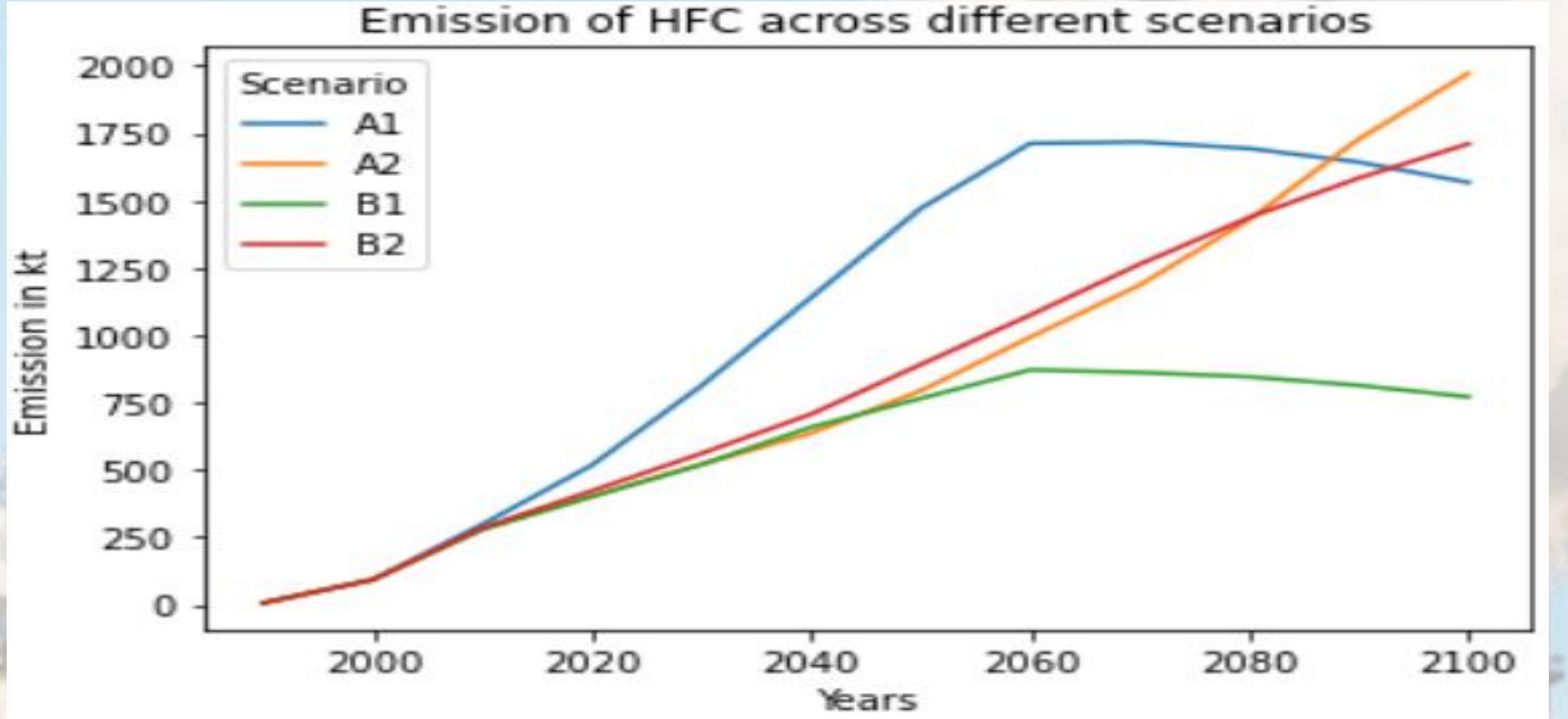


As per the dataset Montreal gases (ODS) are not distributed over regions

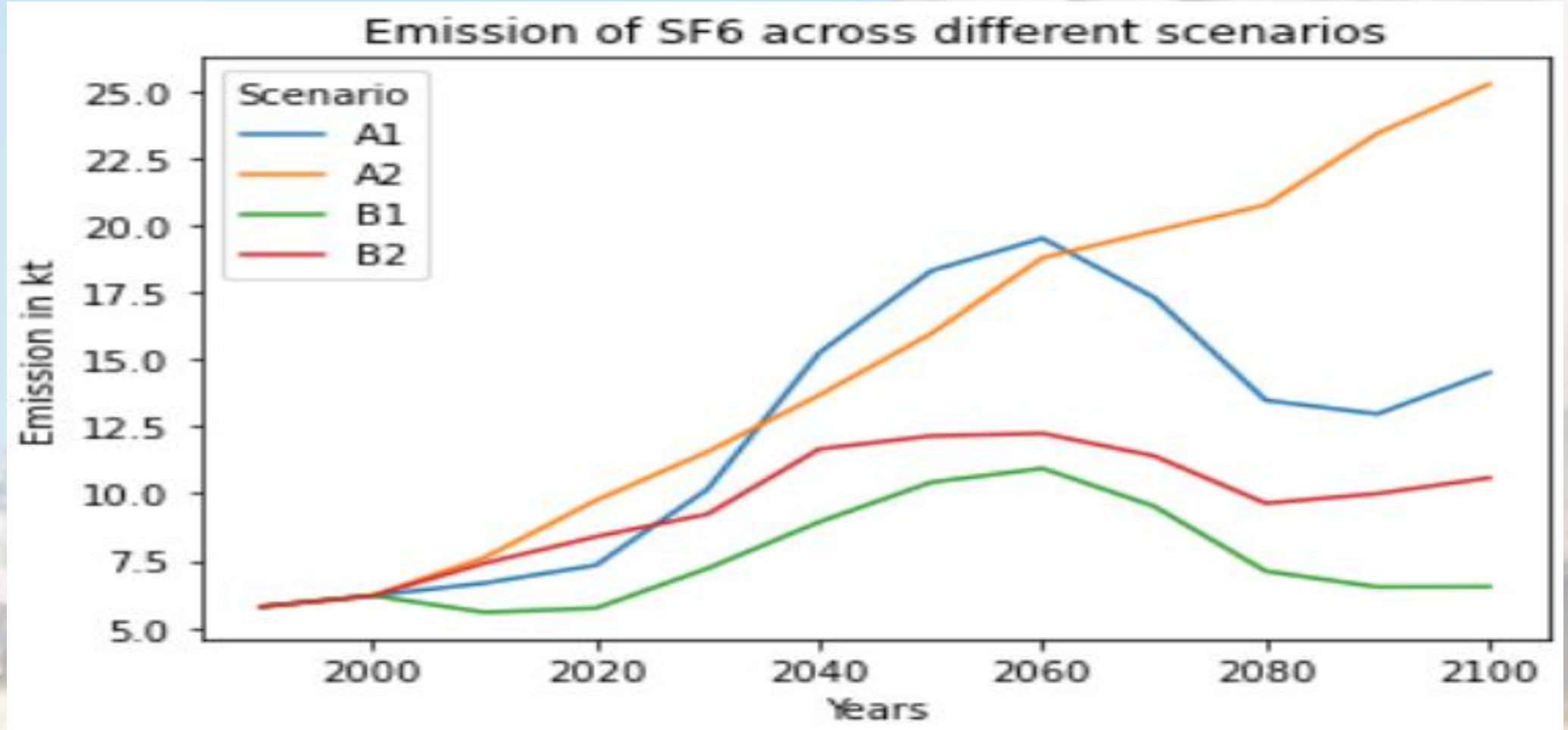
Emission rates of PFC across different scenarios



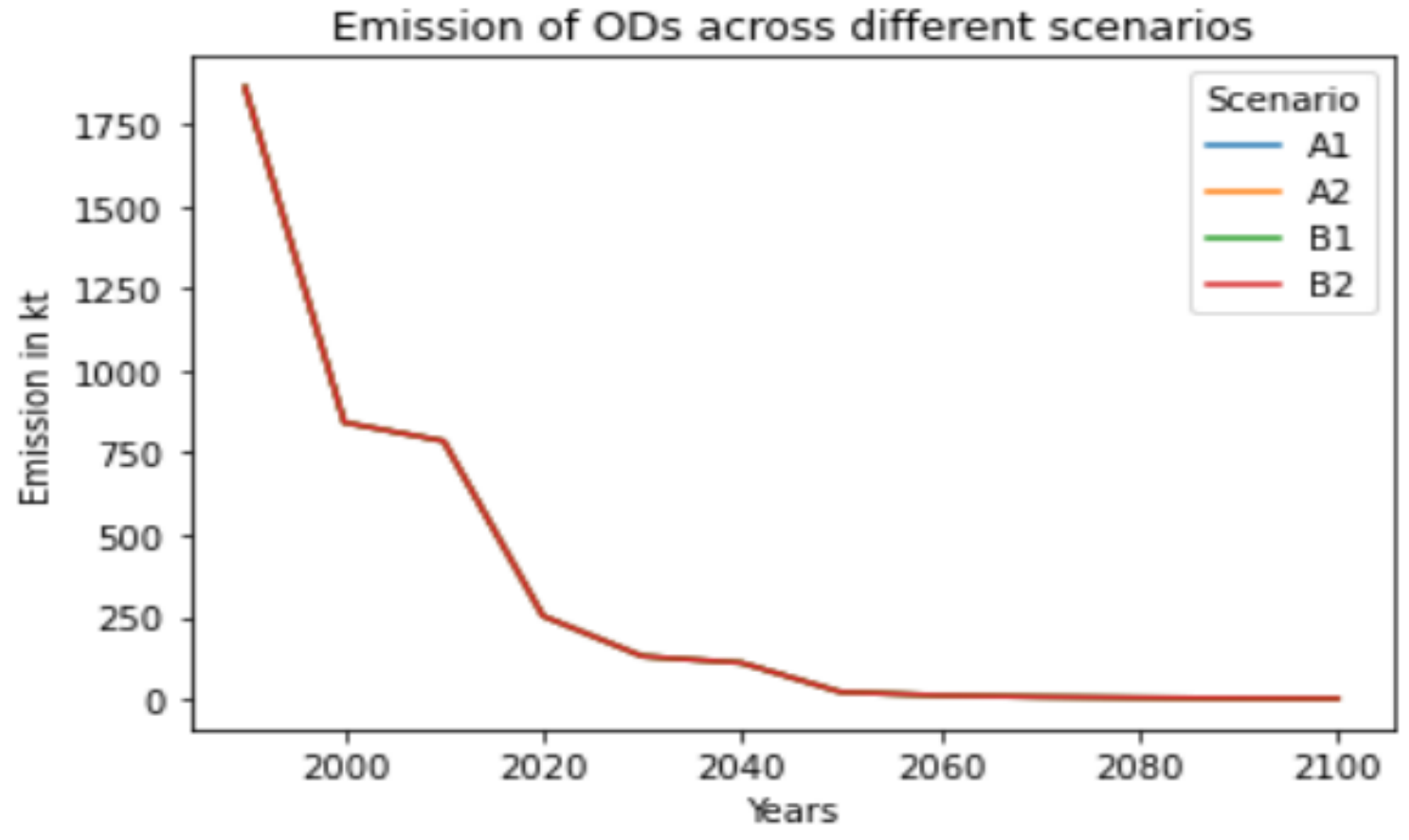
Emission rates of HFC across different scenarios



Emission rates of SF6 across different scenarios



Emission rates of ODS across different scenarios



As per the data the emission rates of Ozone Depleting Substances(ODS) are the same across all scenarios.

Conclusions

- HFC emissions is the highest across all scenarios.
- The rate of emission of Ozone depleting substances (ODS) is reduced to very less amount across the years.
- In scenario B1 where more emphasis is given to clean and resource efficient technologies, the emission rates of F-gases are comparatively lesser compared to other scenarios
- Considering the period 2030-2100, industrialised regions(OECD90 & REF) have constant F-gases emission rates compared to developing regions (Asia and ALM) which show steep increase in emission.

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