

## Module 1 lesson 3

Wednesday, September 7, 2022

10:59 PM

### 1.3.3 Global Warming Potentials

#### ▶ Greenhouse Gases (GHG)

- any gas in the atmosphere which absorbs & re-emits heat
- keeps atmosphere warmer than it otherwise would be

#### ▶ Global Warming Potential (GWP)

- an index expressing amount of atmospheric warming a gas causes over a given period of time (compared to  $\text{CO}_2$ )

GHG	GWP
$\text{CO}_2$	1
Methane ( $\text{CH}_4$ )	21
Nitrous oxide ( $\text{N}_2\text{O}$ )	310
HFC	124-14,800
PFC	930-12,200
$\text{SF}_6$	22,800
$\text{NF}_3$	17,200

#### ■ Measuring emissions

- useful to measure this in a common unit —  $\text{CO}_2\text{e}$
- $\text{CO}_2\text{e}$ 
  - signifies the equivalent amount of  $\text{CO}_2$  which would have the equivalent global warming impact
- Any GHG can be expressed as  $\text{CO}_2\text{e}$  by:

$$\text{mass amount GHG} \times \text{GWP}$$

### 1.3.4 Carbon Footprint Calculations

### 1.3.4 Carbon Footprint Calculations

#### ▮ Carbon Footprint

- Contribution of human activity to global warming
- measured as area of productive land & sea required to absorb equivalent  $\text{CO}_2$  emitted by the activity
- Common unit of measurement: Tonnes  $\text{CO}_2\text{e}$