



# Earthwise

Project to encourage carbon neutrality to mitigate climate change impacts

Reporting on our Progress and Milestones



# Contents of the Report

## Part 1:

Our Team

## Part 2:

Problem & Solutions

## Part 3:

User Research

## Part 4:

Market Research

## Part 5:

Next Steps



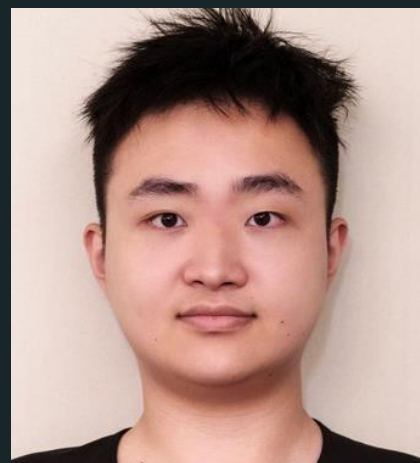
# Our Team: HexalBytes



Jenny Peng



Kelvin Yuan



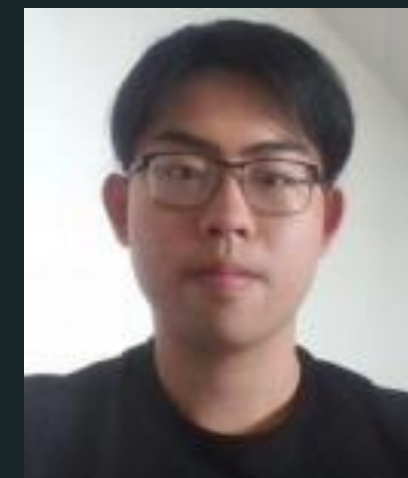
Purui Shi



Aaron Zhao



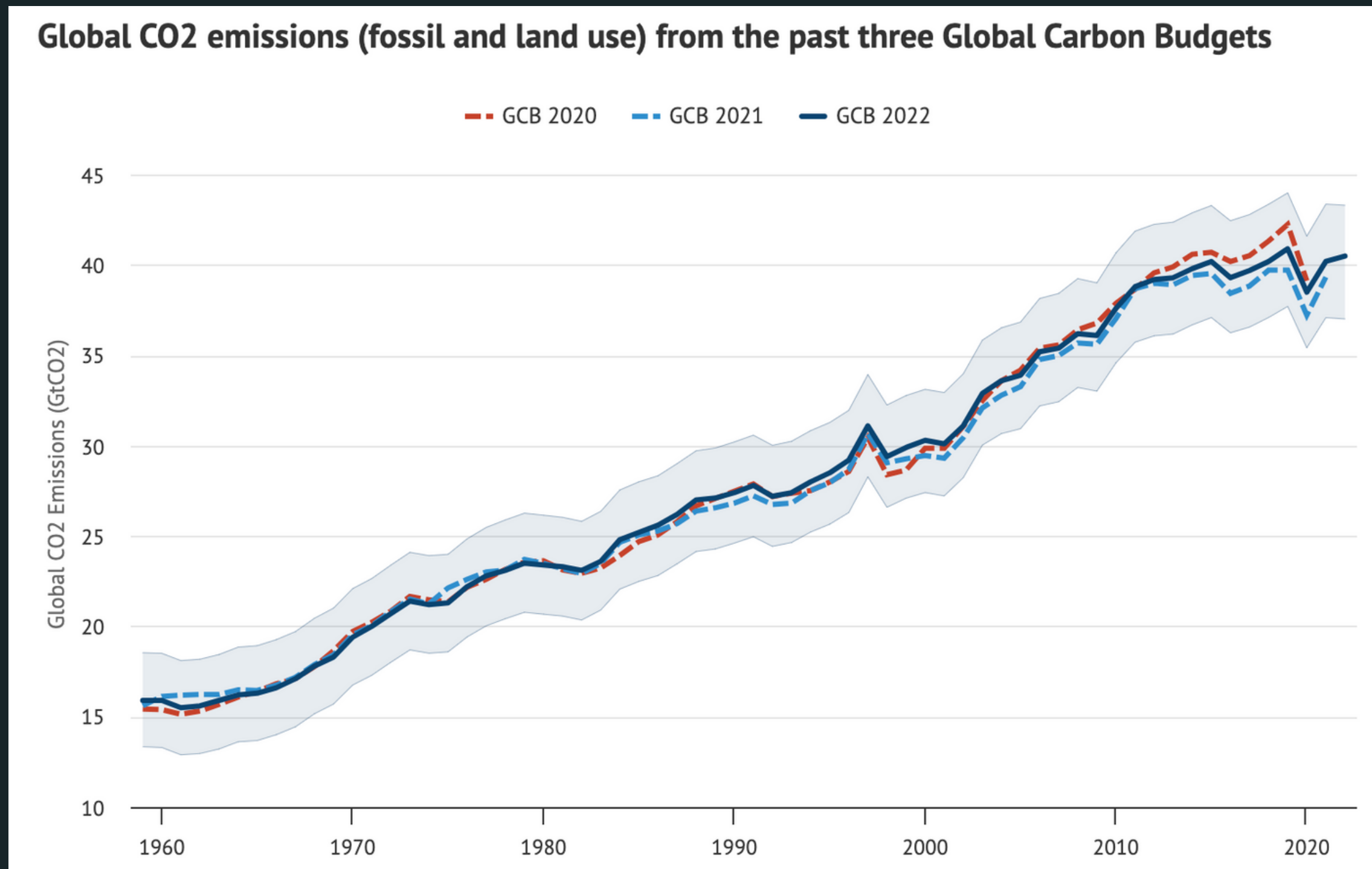
Martin Yang



Daniel Niu



# Current Problem

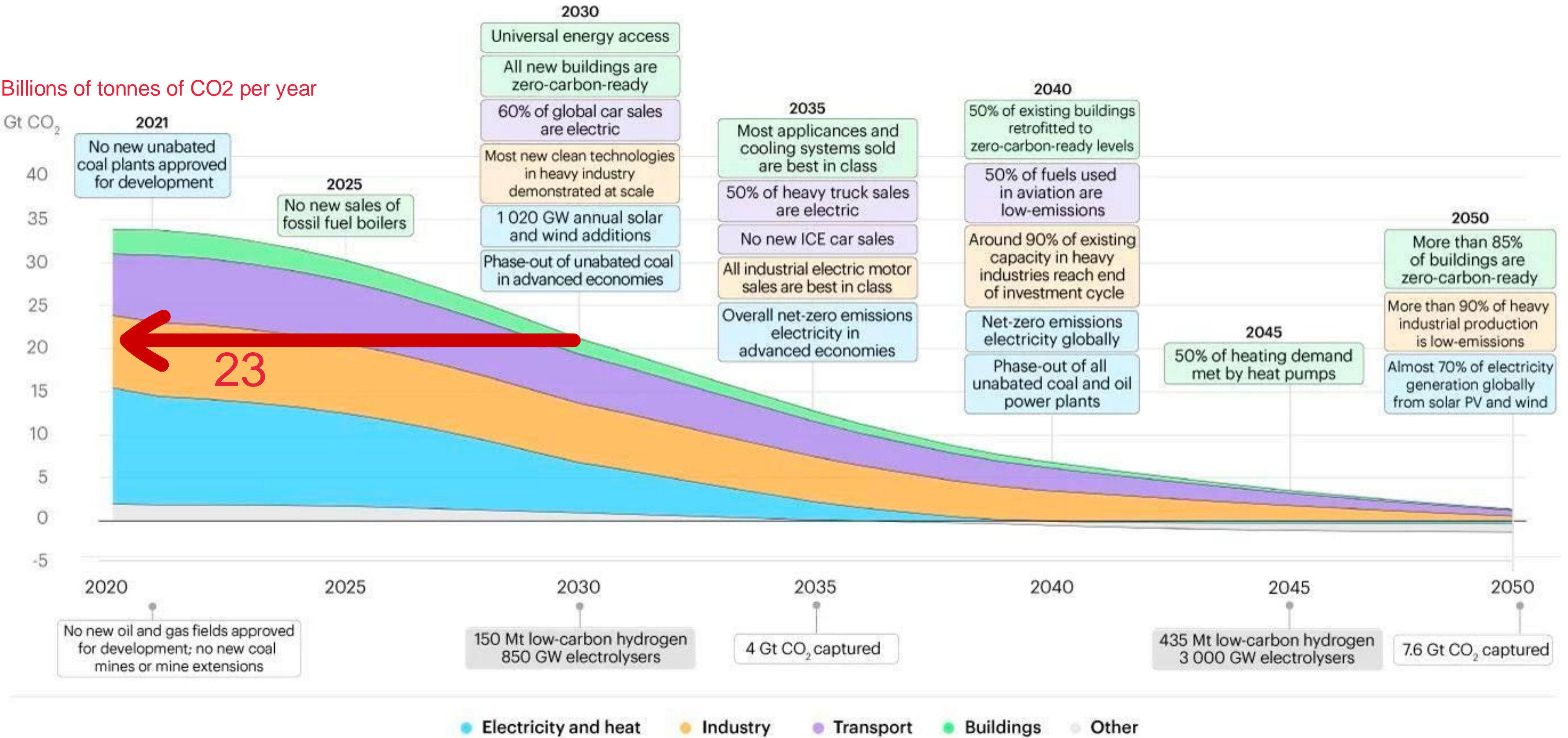


Wildfires  
Droughts  
Climate change  
.....



# Master Plan 2021 --- NET-ZERO 2050

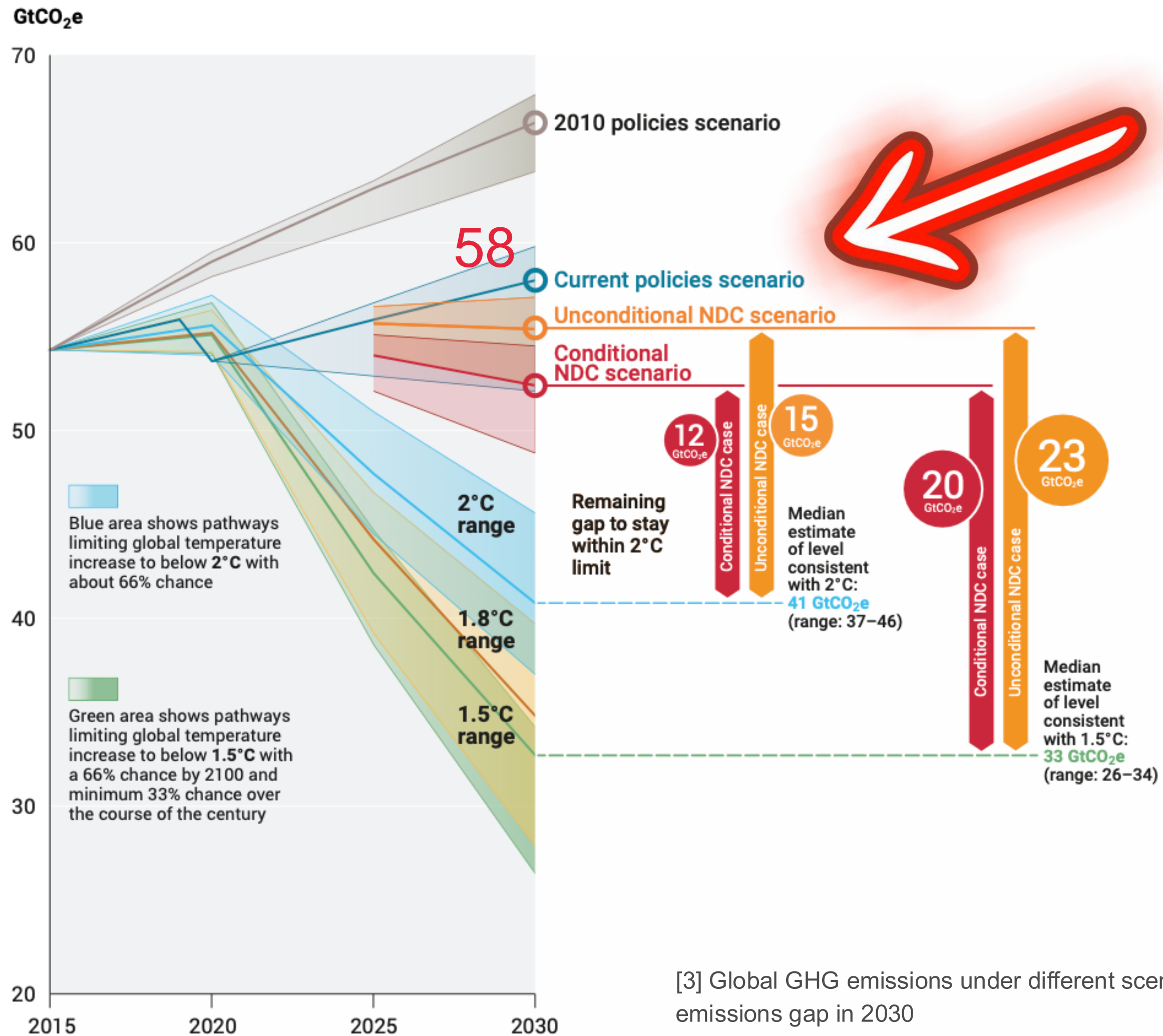
Billions of tonnes of CO<sub>2</sub> per year



[2] International Energy Agency 's key milestones to reach the goal of reducing greenhouse gas emissions.



The  
Fact... 🤔🤔🤔



[3] Global GHG emissions under different scenarios and the emissions gap in 2030



# EarthWise

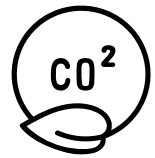
An interactive App aiming to  
encourage carbon neutral behaviors



# Our Solution - Earthwise

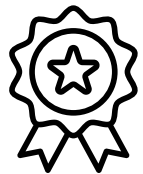
Team HexalBytes

## Carbon Neutrality Reward System (CNRS)



### What is Carbon Neutrality?

- Achieving a balance between emitting carbon dioxide and absorbing it.



### What is CNRS?

- Encourage users to do environmental friendly behaviours.
- Track users' carbon footprint.
- **Environmental friendly behaviours = Rewards**



### What is the goal of CNRS?

- Resulting in a net zero carbon footprint.
- Accelerate sustainability for the world.<sup>[4]</sup>

[4] In 2015, the United Nations decided in New York on new global Sustainable Development Goals, to be achieved by 2030.

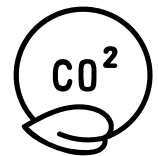
Our carbon neutrality rewards system incentivizes eco-friendly actions by giving credits that can be redeemed, reducing carbon emissions.



# Our Solution - Earthwise

Team HexalBytes

## How to collect rewards?



Environmental friendly behaviours = Rewards



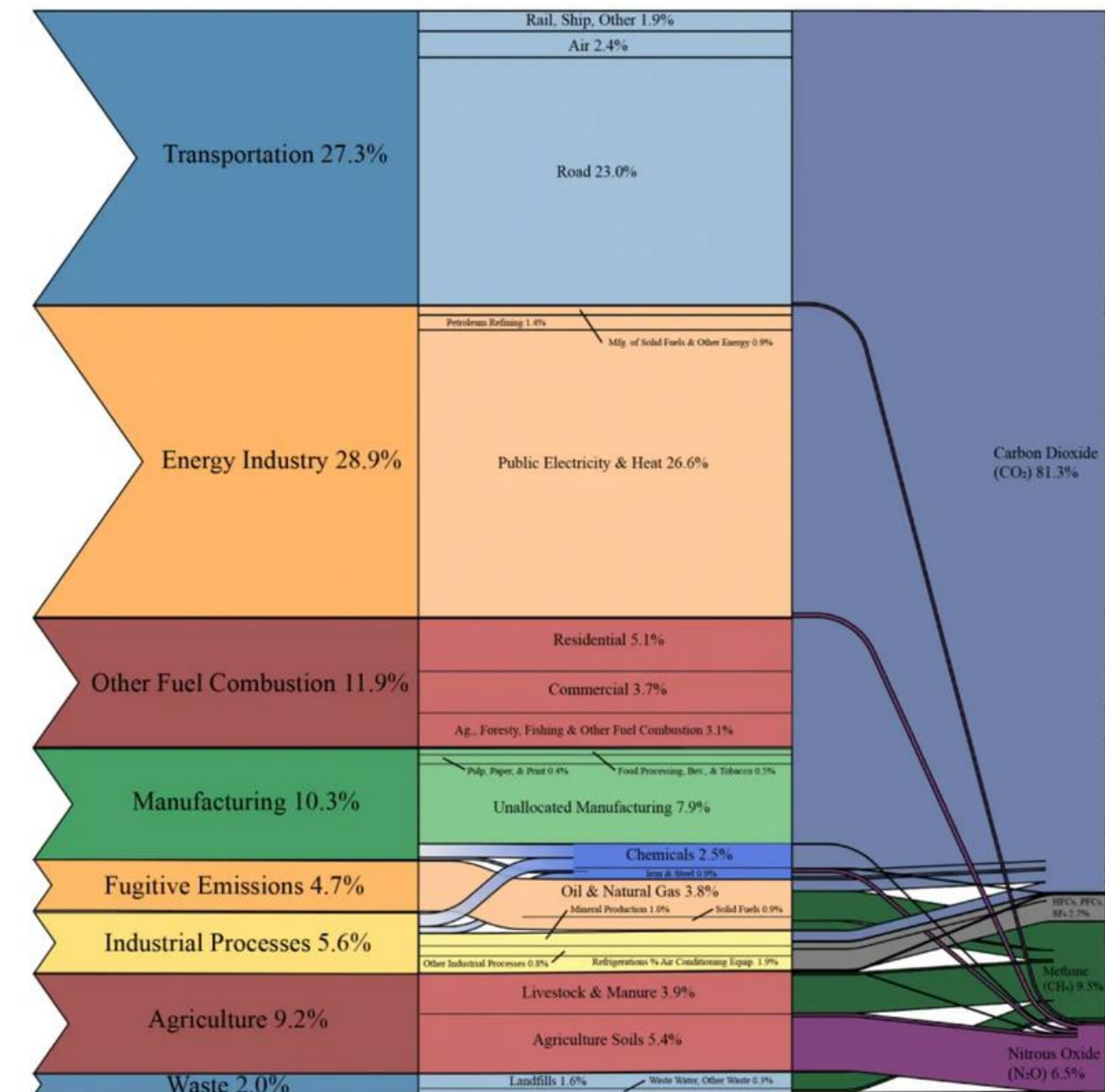
### • Individual User

- |                 |                           |                           |
|-----------------|---------------------------|---------------------------|
| ◦ Transpotation | ✓ Metro, Bus, Bike, ...   | ✗ Car, ...                |
| ◦ Shopping      | ✓ Reuseable bag, ...      | ✗ Disposable bag, ...     |
| ◦ Food          | ✓ No food waste, ...      | ✗ Food waste, ...         |
| ◦ Home          | ✓ Donate old clothes, ... | ✗ Light is always on, ... |
| ◦ others        |                           |                           |



### • Industry User

- |                 |                          |                        |
|-----------------|--------------------------|------------------------|
| ◦ Transpotation | ✓ Electricity Truck, ... | ✗ Gas, ...             |
| ◦ Material      | ✓ EF materials, ...      | ✗ Plastic, ...         |
| ◦ Overpackaging | ✓ Plain, Eco, ...        | ✗ Surplus, Wasted, ... |
| ◦ Power         | ✓ Solar, Nuclear ...,    | ✗ Fossil fuels         |
| ◦ others        |                          |                        |



Our carbon neutrality rewards system incentivizes eco-friendly actions by giving credits that can be redeemed, reducing carbon emissions.



# Our Solution - **Earthwise**

Team HexalBytes

## What **rewards** can do?



### **Redeem for merchandise**

Rewards can be exchanged in the out app's store for the equivalent value of goods, such as clothes, tickets, food, etc



### **Medals and Rank**

Each month, medals will be issued to users based on the current month's rewards, users can see their global ranking transparently.



### **Plant a tree in your name**

Certain rewards can be redeemed for a tree, our staff will go to the desert to plant a sapling, you can name this tree.

Our carbon neutrality rewards system incentivizes eco-friendly actions by giving credits that can be redeemed, reducing carbon emissions.



# Target Users (Primary Stakeholders)



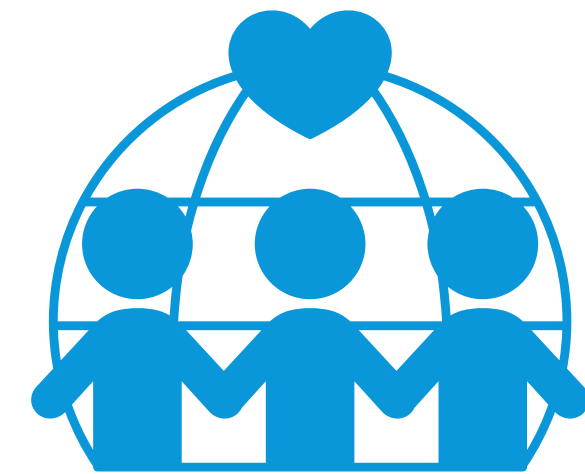
## **Eco-conscious individuals**

People with strong environmental awareness, willing to take action to reduce emissions



## **Sustainable organizations**

Enterprises committed to carbon neutrality and sustainability



## **Schools, communities, governments**

Public institutions that want to contribute through participation

These groups are motivated and ready to adopt carbon neutral behaviors through incentives.

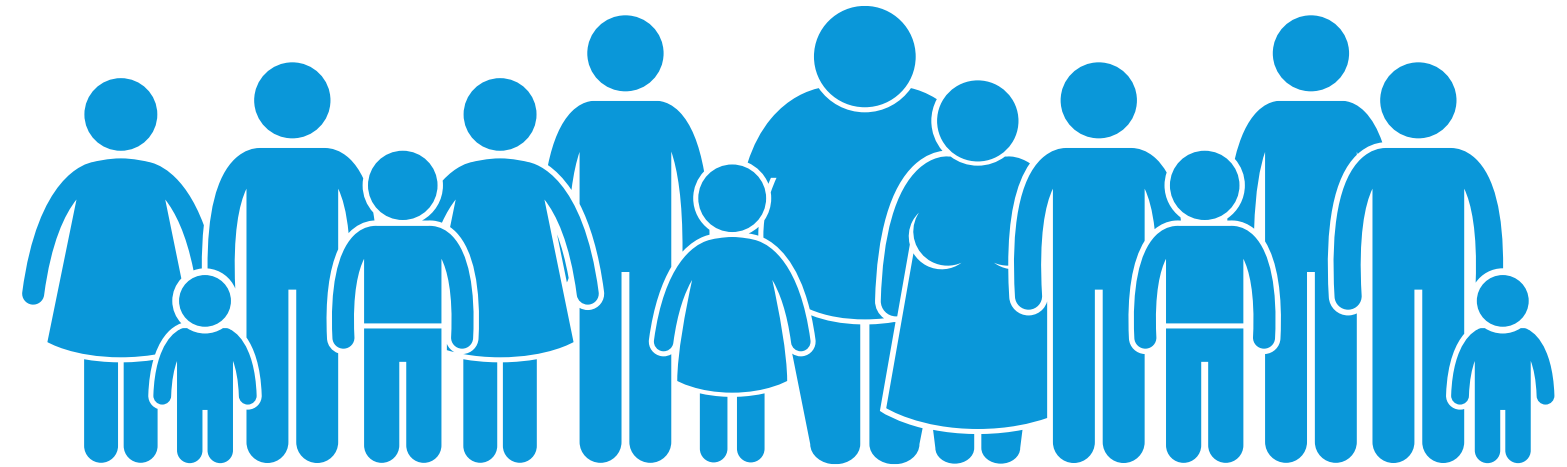


# Secondary & Tertiary Stakeholders



**companies collaborate with us**

Bike sharing companies, eco-friendly product manufacturers etc.



**Everyone can benefit our app indirectly or directly**

Carbon emission matters for everyone

These groups are motivated and ready to adopt carbon neutral behaviors through incentives.





# Market Size



## Current market size

The current carbon offset/carbon credit market is estimated at \$331.8 billion in 2022



## Potential Growth

The trend suggests the carbon offset/carbon credit market will reach \$1602.7 billion by 2028

The carbon offset market has huge growth potential as focus on emissions reductions increases.



# Market Segments by Type



## **Voluntary market**

The voluntary carbon offset market, where individuals, companies, and organizations purchase offsets on a voluntary basis.

Currently worth around \$2 billion, estimated growth to \$250 billion by 2050.



## **Compliance market**

The compliance carbon market, involving offsets purchased to meet regulatory requirements, is larger in value than the voluntary market.

Though the voluntary market is substantial at \$2 billion, the compliance market driven by regulations is even larger in scale.

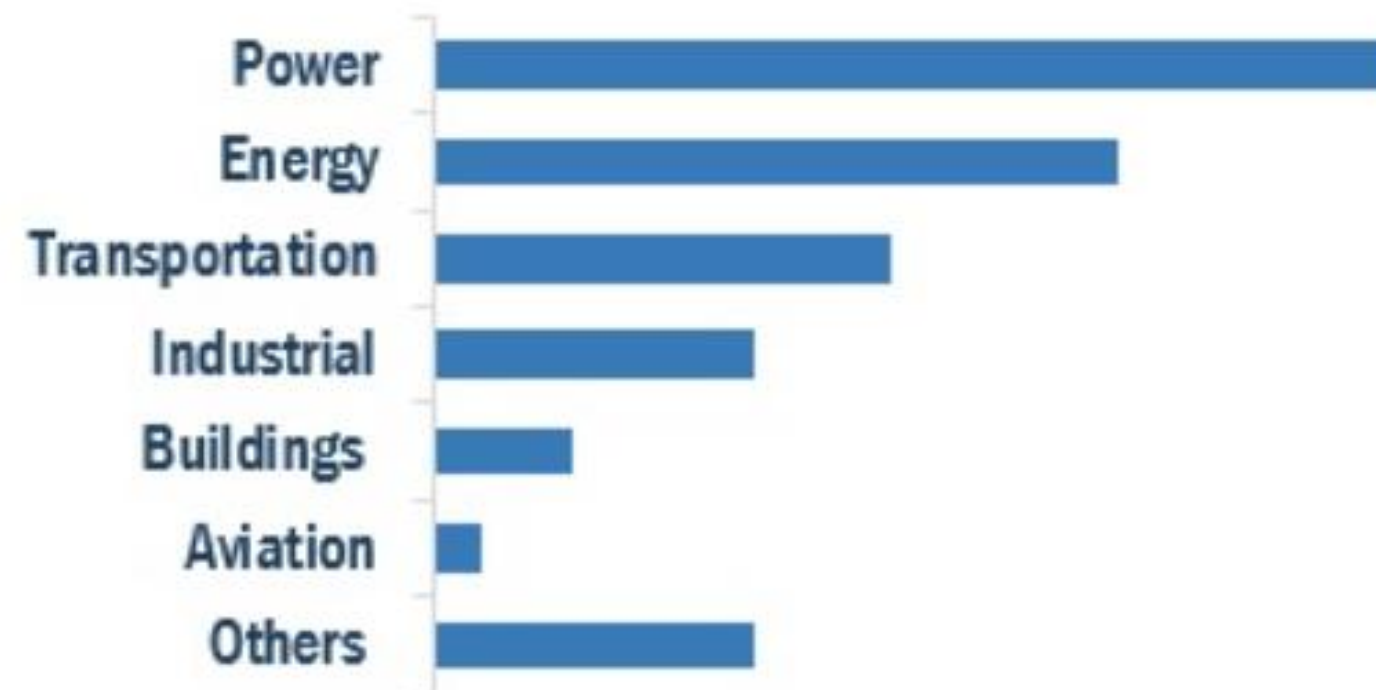


# Market Segments by End-user



BY END-USER

2022 (USD MILLION/BILLION)



Others sector include:

- forestry
- agriculture
- waste

The largest sector, power sector uses low Greenhouse Gas technologies



# Market Segments by Region

- Asia Pacific
- Europe
- North America
- Rest of the world



## Key Market Players by Region

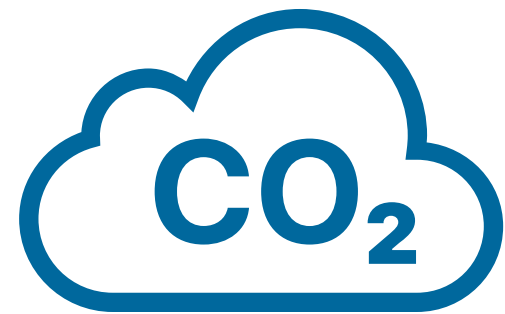
- South Pole Group(Switzerland)
- 3Degrees(US)
- Finite Carbon(US)
- EKI Energy Services Ltd(India)
- Native Energy(US)







# Growth Factor



## Emission Reductions

Governments and corporations are setting carbon neutrality goals to reduce emissions by a target year.



## Corporate Interest

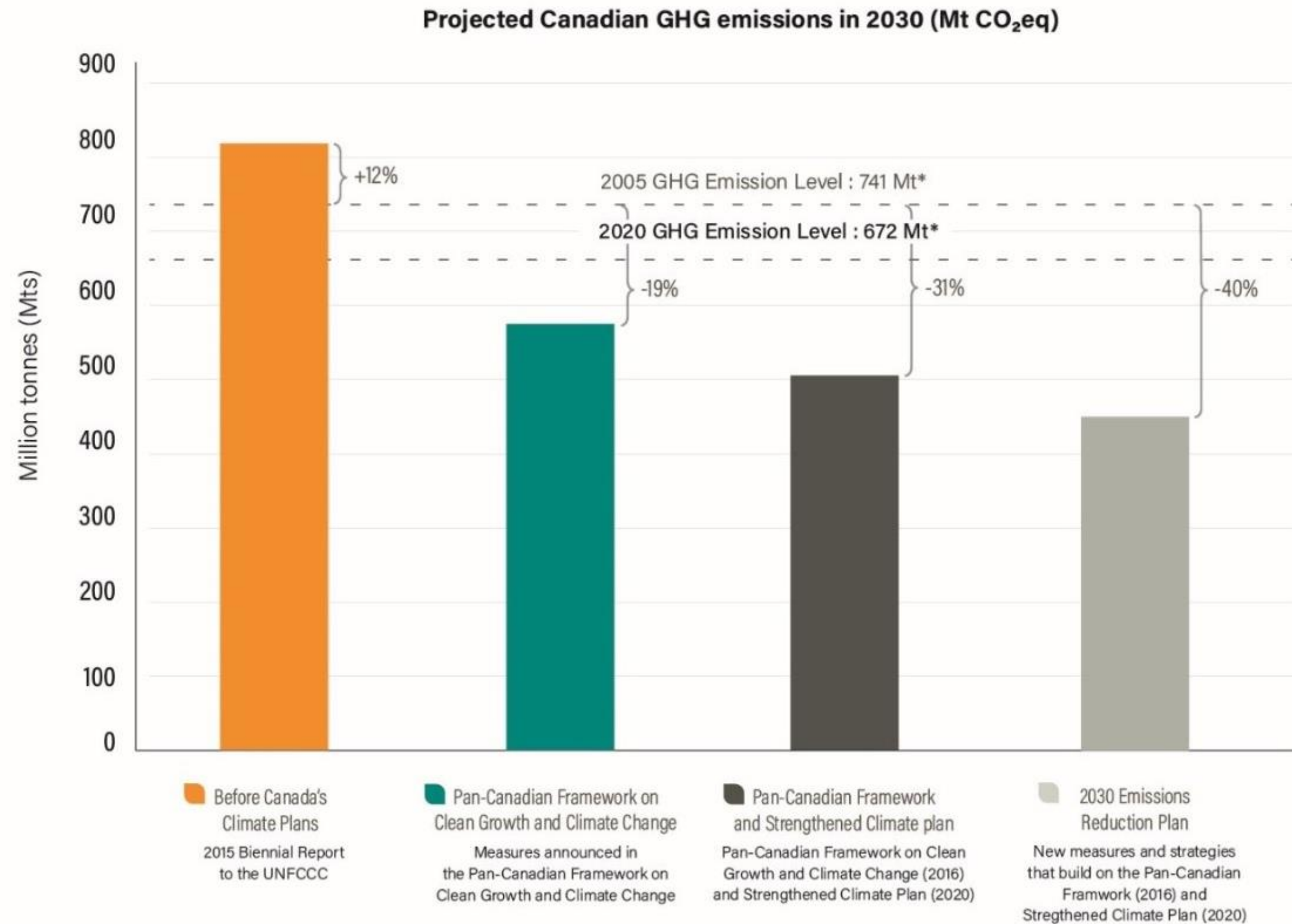
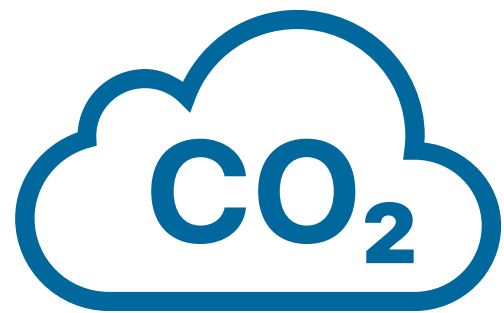
More companies are committing to carbon neutrality to meet sustainability goals and respond to stakeholder demands.



## Individual Interest

Consumers increasingly support brands with strong environmental commitments and want to reduce their personal carbon footprints.

The growing focus on fighting climate change is driving governments, corporations, and individuals to prioritize carbon neutrality.



The growing focus on fighting climate change is driving governments, corporations, and individuals to prioritize carbon neutrality.



# Potential Obstacles



## **Need more policies and rules**

Government policies and regulations to encourage carbon neutrality practices



## **Need more awareness and participation**

Educate public about carbon footprint and engage them in sustainable actions

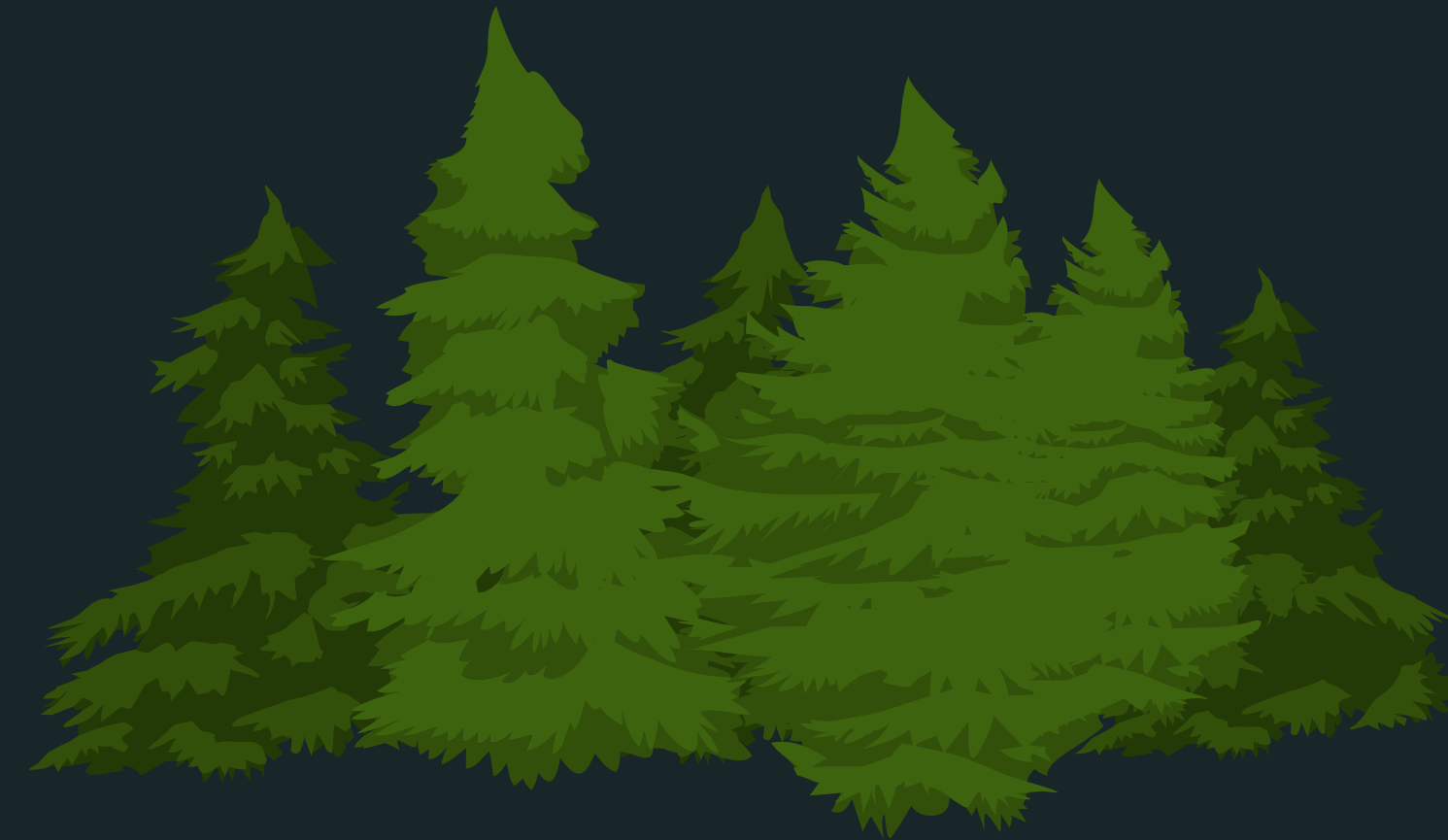
Overcoming these obstacles is crucial for achieving carbon neutrality goals.



# Potential Obstacles

## Concerns

- Emission reductions rely on vague predictions
- Carbon credits cause community conflicts
- Artificially inflating baseline emissions
- Potential significant harm and risk to forests
- Project does not contribute to achieving climate benefits







# Research Method

## 1. Questionnaire (in progress)

### Questionnaire draft (for primary)

1. If applicable, please describe a moment in a natural environment that made you feel awe (joy, relaxation, or any positive emotion).



## 2. Interview (interview plan in progress)

Our interview is distinctive in...



# Our Next Step... Till Next Studio

Step 1: Define Purposes and Scope (refine if needed)

Step 2 : Conduct User Research (in progress)

Step 3: Conduct Observation

Step 4: Interview & Questionnaire

Step 5: Create Job Stories

# Questions for the Audience...

## Question 1:

Due to the broadness of our target user groups and potentially they will have different views and opinion, are there any advices on how we can make our interview questions or questionnaire more comprehensive?

## Question 2:

Besides our reward system, is there any other way to get users to actively use this app?

## Question 3:

Would you be intereted in our app? Do you have anying cornerns about the app?

We are open for any questions or  
feedbacks from the audience :)



# Citations

- [1] Z. Hausfather and P. Friedlingstein, “Analysis: Global CO2 emissions from fossil fuels hit record high in 2022,” Carbon Brief, Nov. 11, 2022.  
<https://www.carbonbrief.org/analysis-global-co2-emissions-from-fossil-fuels-hit-record-high-in-2022/>
- [2] B. Chappell, “To Be Carbon-Neutral By 2050, No New Oil And Coal Projects, Report Says,” NPR, May 18, 2021. Available: <https://www.npr.org/2021/05/18/997834721/no-new-oil-and-coal-projects-now-to-be-carbon-neutral-by-2050-report-says>
- [3] UNEP, “Emissions Gap Report 2022,” UNEP - UN Environment Programme, Oct. 21, 2022. <https://www.unep.org/resources/emissions-gap-report-2022>
- [4] <https://sdgs.un.org/2030agenda>
- [5] <https://css.umich.edu/publications/factsheets/sustainability-indicators/carbon-footprint-factsheet>
- [6] <https://www.euronews.com/green/2023/01/10/the-five-biggest-reasons-carbon-offsetting-schemes-can-fail>
- [7] <https://www.marketsandmarkets.com/Market-Reports/carbon-offset-credit-market-85350774.html>
- [8] <https://www.euronews.com/green/2023/01/10/the-five-biggest-reasons-carbon-offsetting-schemes-can-fail>
- [9] <https://www.canada.ca/en/services/environment/weather/climatechange/climate-plan/net-zero-emissions-2050.html>