

**CHEM 243/244 Class Project:**  
**Can Carbon Capture Contribute Solutions to the UN Sustainable Development Goals Connected to Global Warming and Climate Change?**

**Objective II: Global Warming and Climate Change**

Here are two resources that will help you answer the questions for this week:

- 1) [Global Climate Change - ACS Position Statement](#)
- 2) [Climate Change Science – EPA Basics of Climate Change](#)

**Group Project work for Monday and Wednesday, October 17 and 19:**

- I suggest that you assign the following roles in your group:
  - Reader: Someone who will read the introduction and each question.
  - Recorder: Someone responsible for typing your responses to each question into the Climate Change slides in your group's project power point in MS Teams.

**Getting started:**

- 1) Go to the CHEM 243/244 Project Folder in MS Teams. **The MS Teams link is on the class Blackboard site.**
- 2) Click on "file" near the top of the page
- 3) Find your class section folder.
- 4) Find your group's power point. When you open the power point, you should see the names of all group members on the first slide.
- 4) DO NOT duplicate or re-name your power point!!!**
- 5) To best work with MS documents in Teams, I recommend that you click the "Open in Desktop App" found near the top of your computer screen.
- 6) Each day that we have project worksheet questions, you can type your group answers directly into your group's power point on the designated slides. We are building the power point for your presentation as we go along!
- 7) You can bring your own laptop to class, or I can loan you one from the chemistry department.

**Introduction.** The combustion of non-renewable fossil fuels produces carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), and other toxic gasses referred to as greenhouse gasses. These gasses are harmful because they lead to the rising of the Earth's atmospheric temperature, known as global warming.

Carbon dioxide traps heat from the sun, which results in the constant warming of our world. About half of the CO<sub>2</sub> released from burning fossil fuels remains in the Earth's atmosphere while the other half is absorbed by plants and the oceans. Human activities have increased atmospheric CO<sub>2</sub> by more than a third since the Industrial Revolution began in the 18th century. Due to the rapid increase in greenhouse gases, research on how to mitigate these emissions has increased to help reduce global exposure to climate change. One technique is known as Carbon Capture technologies to capture CO<sub>2</sub> waste from the burning of fossil fuels. Carbon capture and storage is an innovative new technology growing from green and sustainable chemistry used to mitigate the consequences of the greenhouse effect.

**Questions:**

- 1) How is climate change defined.
- 2) Why is the Earth's climate changing?
- 3) Is climate change real? What type of evidence is there that climate change is occurring?
- 4) How is our global society affected by climate change?
- 5) Look at the three UN SDGs that your group selected. Write 1-2 sentences on how each of your UN SDGs is connected to climate change.
- 6) What can or should be done to help head off the impacts of climate change?