

# Sustain SoCal & ENGIE Climate Change Design Challenge

## Climate change introduction

(from [NEED.org](https://www.need.org/))

“Scientists all over the world are studying the effects of increased levels of greenhouse gases in the Earth’s atmosphere. The overwhelming majority of scientists agree the greenhouse gases are trapping more heat in the atmosphere as levels increase. They have collected data to show that the average temperature of the Earth is beginning to rise. This phenomenon is called global warming.

Scientists at NASA, the National Aeronautics and Space Administration, have found that the average temperature of the Earth has risen by more than 1°C (1.8°F) since 1880. They assert this increase in global temperature is the major cause of a 21-24 centimeter rise in the sea level over the same period of time.

Climate change experts predict that if the temperature of the Earth rises just a few degrees Fahrenheit, it will cause major changes in the world’s climate. They predict there will be more floods in some places and more droughts in others. They believe the level of the oceans will rise as the ice at the North and South Poles melts. They think there might be stronger storms and hurricanes. Some of these effects are already visible today.

Climate experts are urging countries all over the world to act now to lower the amount of carbon dioxide that is emitted into the atmosphere. Scientists and politicians agree that we should reduce the amount of fossil fuels that we burn. The solutions being implemented include reducing CO2 emissions from transportation and electricity by switching to less carbon intensive fuels. Experts around the world are trying to find ways to lower greenhouse gas emissions without causing major impacts on the economy.”

Watch This video for a quick overview:

<https://ed.ted.com/lessons/climate-change-earth-s-giant-game-of-tetris-joss-fong>

## Background Reading

For more detailed and scientific information about climate changes, its causes, and its impacts, please read this [document from NEED.org](#).

## Design Challenge Brief

In this challenge, your team will research climate change, its causes, and its impacts. You will decide whether you want to work on a project that **mitigates** the climate change, or **adapts** to it.

**Climate Mitigation** involve reducing the severity or seriousness of the problem of climate change. Potential climate change mitigation could include creating more fuel-efficient vehicles or using renewable energy to reduce greenhouse gas emissions and reduce or slow the increase in global temperatures. **Climate Adaptation** is taking action to allow us to continue our way of life as the impacts

of climate change reach us. Adapting to climate change in an urban area might be upgrading sewer systems to manage increased loads due to severe rainfall or seawater intrusion. [Watch this video](#) to better understand the differences between mitigation and adaptation.

Whichever path your team chooses- mitigation or adaptation- your design will need to be relevant and useful to your community- Orange County, your city, neighborhood, or even your high school campus. You will write a Recommendation Report that will explain your innovation, whether that be a product, a project, a combination of the two, or something else, and how it will impact your community and present your findings and prototype, (if applicable) to your peers and members of Sustain SoCal who represent Orange County’s clean, green, and sustainability business leaders.

## Resources

Your team will need to conduct research specific to your project, but we have gathered some general climate change resources about causes and impacts of climate change to help you begin and possibly decide what your project might be.

## Who is eligible to participate

- Orange County High School students enrolled between August 2023 and June 2024.

## Benefits and resources for participating students

### All participants:

- All teams and students who complete the Preliminary Presentation will receive a digital certificate of participation and proposal completion
- Opportunity to interact with participating students across the County
- Opportunity to meet and speak with OC Clean and Green Tech leaders
- Project mentor(s) from a Sustain SoCal member organization
- \$100 to produce a prototype or model of your solution

### Winning Team:

- \$1,000 cash scholarship
- Summer internship with one of the Sustain SoCal member organizations

## Timeline & Process

Stage of Challenge	Deliverables	Due Date
<b>Proposals</b>		
	Submit Intent to Participate	Now - December 15, 2023
<b>Process</b>		
	Submit Initial Report	February 2, 2024
	Mentor Matching	End of February, 2024
	Final Report Due	April 26, 2024
<b>Final Presentation</b>		
	In person presentations at UCI Beall Applied Innovation	May 8, 2024

<b>Winning Team Announced</b>	<b>At ocMaker Challenge Awards Ceremony</b>	<b>May 18, 2024</b>
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## About Us

### Why are we doing this?

Sustain SoCal and ENGIE are both looking to create a strong pipeline of innovators, engineers, and entrepreneurs to lend their skills and strengths to the multitude of Clean and Green employers in the region. We are hoping to inspire youth to address the various causes and impacts of climate change here in Southern California that will have impacts world-wide.

Sustain Southern California (Sustain SoCal), comprised of thousands of stakeholders in the region, accelerates cleantech economic growth and sustainability initiatives through innovation, collaboration, and education. Our organization has a long history of exploring and implementing pragmatic, real-world solutions to the challenges created by growth, change and inefficiency that face Southern California and beyond. [www.sustainsocal.org](http://www.sustainsocal.org)

ENGIE North America We're on a mission to shape a sustainable future built on clean, affordable, resilient energy and the infrastructure that supports it. Our team of 6,500 employees are leaders in advancing the transition to a carbon-neutral North America. Along the way, we are creating jobs, economic opportunities and trusted community and customer partnerships. [www.engie-na.com](http://www.engie-na.com)  
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