Plain Script: The Climate-Ocean Connection

{*Cue "Blue Marble" slide*}

The Earth is made up of several systems that work together as one – like the human body.

The ocean is a key part of the system that makes Earth habitable, meaning a good place for living things, including you and me.

We at ___ {*fill in with the name of your institution*} hope to help you see yourselves as part of the larger story of our planet and ocean.

Over the next 5-10 minutes, we'll consider some ways the ocean is changing, relate that to human systems and give examples of ways we can be involved. We'll be talking about our shared responsibility to protect both people and places from harm, by solving issues that cause disruptions.

Now I am going to change one thing about this map.

{*Cue "Ocean Circulation" still slide*}

What are the bands of color representing in this image? The colors (reds indicating warm, blues indicating cold) show us that the ocean absorbs the energy of the sun, particularly near the equator.

{*Cue "Ocean Circulation" animated slide*}

Now that the image is moving, think about how the ocean is like the climate's heart and circulatory system.

Like our heart pumps blood, heat, and nutrients around our bodies, the ocean pumps water, heat, and nutrients, even living things, all around the world.

What are you noticing from the movement of the ocean currents?

Currents like the Gulf Stream in the Atlantic (or the Kuroshiro in the Pacific) carry warmth from the tropics to higher latitudes, giving places like England and Washington State more moderate climates than you might expect.

This is one example of how ocean circulation helps to regulate the climate and stabilize Earth's temperatures.

{*Cue "Anthropocene Transportation" slide*}

Now I'm going to show you a different map of our planet. Do you think the colors now represent a natural or human-made system?

This is another way to see our world – systems that we humans have built. We design systems for food, clean water, transportation, buildings to live, work, learn, and play.

Where do we get the energy for these systems?

We power these systems mostly by burning fossil fuels, which is disrupting Earth's climate system.

Each year, we burn huge amounts of fossil fuel (coal, oil, gasoline, and natural gas).

Currently, we burn fossil fuels to provide energy for vehicles, buildings, manufacturing, and almost everything that requires electricity or power.

Burning releases carbon dioxide into air. The carbon dioxide builds up in the atmosphere where it acts like a heat-trapping blanket.

The ocean is holding most of the trapped heat, so it is getting warmer. As the ocean warms, Earth's climate-heart and circulatory system is being affected. Changes in the ocean circulation lead to disruptions for many species of ocean animals and ecosystems.

By moving away from fossil fuels to power our lives, we can help to protect the ocean as our climate's heart and protect the health of Earth's systems.

Most people from all walks of life – from business leaders, to faith groups, to school students – are leading or participating in efforts to protect the ocean by moving away from fossil fuels. The potential is great. Let's consider the global potential for wind and solar energy to help build new systems for people to use.

{*Cue "Global Wind Resources" slide*}

In this image you see the wind energy potential around the world. Wind is a bountiful resource all over, especially in coastal areas, where a lot of people lives.

{*Cue "Global Solar Resources" slide*}

In this image you see the solar power potential around the world. Each day, enough solar energy hits the earth to power all of our electricity needs for a year. Think about that for a moment! One day of sunlight equals a full year's worth of energy.

{*Cue "Solarize Massachusetts" slide*}

In many places in the country, people are working to take advantage of that tremendous solar potential. In Massachusetts, citizens and leaders developed an initiative that makes solar power installations less expensive because communities are buying rooftop systems in bulk. Since the program started in 2011, all of the participating communities have greatly increased the number of households with solar power.

{*Cue "Solar Installation in Seattle" movie slide*}

Seattle, Washington in the northwestern US is famously grey and rainy all the time. However, our partners at Seattle Aquarium have a solar array on their roof that is part of another type of Community Solar

program. Their program allows people to buy into large solar arrays on someone else's roof, much like a community garden system. Across the US are many similar stories. In sunnier climates, there is even more solar power than in MA or WA.

{*Cue "Blue Marble" slide*}

As you continue to explore the Aquarium, I encourage you to talk with your family or friends about opportunities you can find to join with groups of people or programs working to reduce fossil fuel use and to help protect the climate's heart and circulatory system – the ocean.

Shortened Script: The Climate-Ocean Connection

Shortening techniques: Removed Wind Potential slide and shortened some explanations.

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