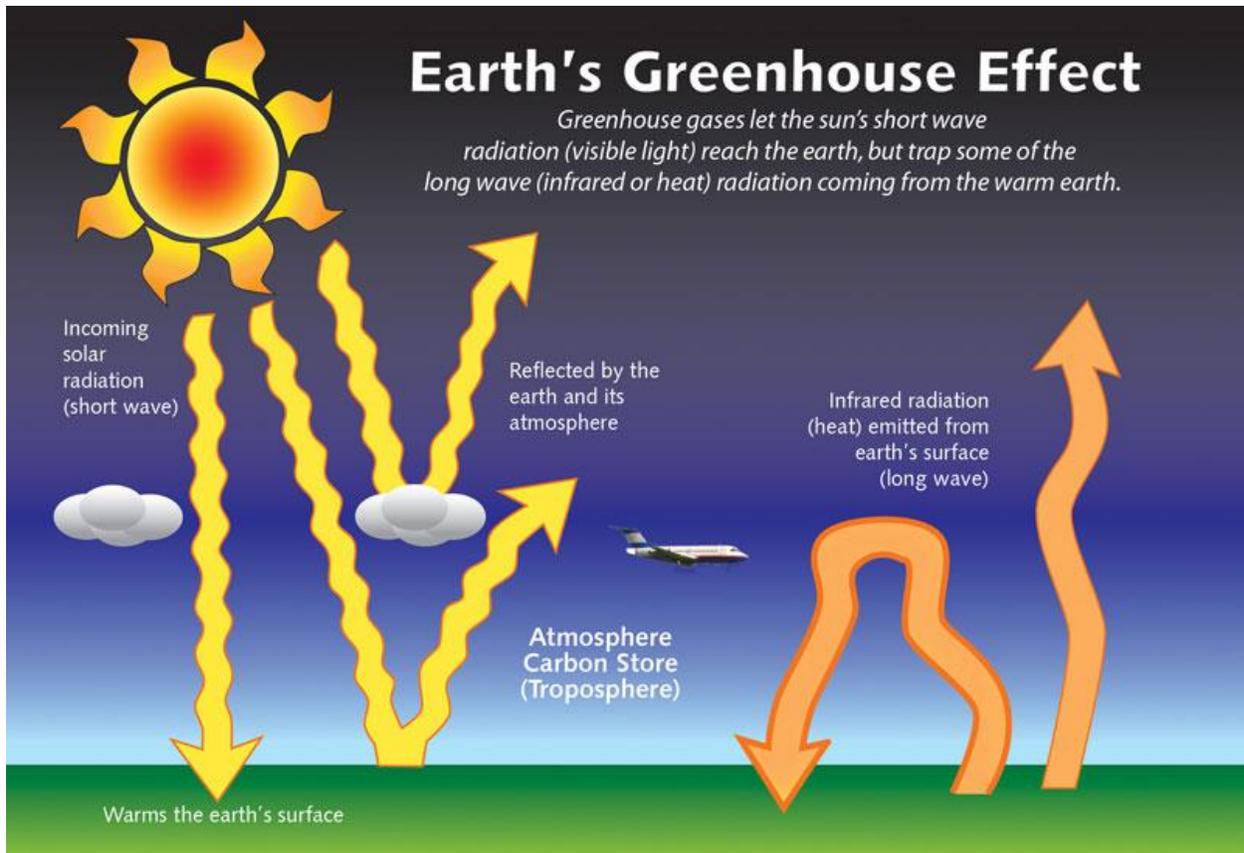


What is Climate Change?

Gases that trap heat in the atmosphere are called “greenhouse gases” (GHGs). Primary GHGs include water vapor (H₂O), carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O). The greenhouse effect traps heat in the earth’s atmosphere through the following process: 1) shortwave radiation emitted from the sun is absorbed by the earth; 2) the earth emits a portion of this energy in the form of long-wave radiation; and 3) GHGs in the upper atmosphere absorb this long-wave radiation, emitting some of it into space and the rest back toward earth (refer to the figure below). This “greenhouse effect” is a natural process that contributes to regulating the earth’s temperature.



(Source: NYS Department of Environmental Conservation, <http://www.dec.ny.gov/energy/76533.html>)

Climate change, also referred to as global warming, refers to the rise in average surface temperatures on the earth, resulting in significant changes in climate patterns. Worldwide meteorological measurements between 1990 and 2005 have found that the average global tropospheric temperature has been rising by 0.2 degrees Celsius (°C) per decade. This may not seem like much, but small changes in the earth’s temperature can have large impacts. The climate is rapidly changing and there is overwhelming scientific consensus that it is due to increased GHG concentrations in the atmosphere, which are trapping more heat and hindering the earth’s surface from cooling.

According to the Intergovernmental Panel on Climate Change (IPCC), evidence of global warming is “unequivocal” and it is “extremely likely” that human influence has been the dominant cause of that warming. Human-generated GHG emissions from transportation, energy

production, and industry have directly and indirectly increased concentrations of carbon dioxide (CO₂) and other GHGs in the atmosphere, causing the earth to get warmer.

Anticipated Impacts

In California, average temperatures could increase by 4.1–8.6°F by 2100, depending on emissions levels (California Energy Commission [CEC] 2012). Numerous observations indicate that rising temperatures are causing wide ranging effects, such as more extreme heat waves, more high ozone days, sea level rise, threats to natural habitats, loss of snow pack, increased magnitude and frequency of wildfires, and more drought years. Scientists predict that the earth's temperature will continue to accelerate, posing significant risks to human health, the environment, and our quality of life.

California's GHG Reduction Efforts

California has taken an aggressive stance to reduce GHG emissions in an effort to curb the impacts of climate change. The following describes these efforts:

Governor's Executive Order (EO) S-3-05

EO-S-3-05 recognizes California's vulnerability to the effects of climate change, including reduced snowpack in the Sierra Nevada Mountains, human health impacts, and sea level rise. This Executive Order established statewide targets to reduce GHG emissions to 2000 levels by 2010, to 1990 levels by 2020, and to 80% below 1990 levels by 2050.

Global Warming Solutions Act of 2006 and CARB Scoping Plan

In response to EO-S-3-05, the California Legislature adopted Assembly Bill (AB) 32, the Global Warming Solutions Act of 2006, which directed the California Air Resources Board (CARB) to develop and implement a scoping plan and regulations to reduce statewide GHG emissions to 1990 levels by 2020.

In 2008, CARB adopted the *Climate Change Scoping Plan: A Framework for Change*, which outlined the State's plan to achieve AB 32 and EO-S-3-05 targets. The majority of the reductions are directed at the sectors with the largest GHG emissions, including transportation and electricity generation.

In 2014, CARB adopted the *First Update to the Climate Change Scoping Plan: Building on the Framework*. CARB concluded that California is on track to meet the 2020 emissions reduction mandate established by AB 32. The Update noted that California could reduce emissions further by 2030 to levels squarely in line with those needed to stay on track to reduce emissions to 80% below 1990 levels by 2050 if the State realizes the expected benefits of existing policy goals (CARB 2014a). The Update identifies six major sectors that will play a significant role in supporting the statewide effort to achieve the 2050 reduction target. These six sectors include:

- Energy (electricity generation and combustion of fossil fuels);
- Transportation (vehicles/equipment, sustainable communities, housing, fuels, and infrastructure);

- Agriculture (soil, fertilizer, and livestock management, water and fuel use, and land use conservation);
- Water (treatment, distribution, and supply of water and treatment of wastewater);
- Waste management (solid waste collection, recycling, and disposal practices); and
- Natural and working lands (forestry and rangeland management, carbon sequestration through sustainable management and conservation).

Sustainable Communities Strategy (Senate Bill SB 375)

In September of 2008, Senate Bill (SB) 375, the Sustainable Communities and Climate Protection Act, was signed into law and required CARB to set regional targets for reducing passenger vehicle GHG emissions in accordance with the Scoping Plan. SB 375 requires Metropolitan Planning Organizations (MPOs) to adopt a Regional Transportation Plan (RTP) aimed at achieving a coordinated and balanced regional transportation system. Each MPO is required to prepare a Sustainable Communities Strategy (SCS) or Alternative Planning Strategy which forecasts development patterns and describes the transportation system needed to achieve CARB's regional GHG reduction targets. CARB's targets for the San Diego County region include a 7% per capita reduction from 2005 levels by 2020 and a 13% per capita reduction from 2005 levels by 2035.

Renewable Portfolio Standards

In 2002, the California's Renewable Portfolio Standard (RPS) was established in response to the California State Senate in Senate Bill 1078. The RPS requires each energy provider to supply 33% percent of their total supply from renewable energy resources by 2020.

What is Oceanside Doing?

To support the State's efforts in reducing GHG emissions, the City of Oceanside is in the process of preparing a Climate Action Plan (CAP) that will assess community and municipal GHG emissions, develop strategies to reduce emissions, establish citywide GHG reduction targets, and forecast future emissions. The CAP will also provide the framework for future projects to tier from the CAP analysis consistent with the California Environmental Quality Act Guidelines Section 15183.5(b).