

A close-up, high-angle photograph of solar panels. The panels are arranged in a grid pattern, with a prominent diagonal line of a metal rail. The lighting is bright, creating a warm, golden glow in the upper left corner and a cooler, blueish tint in the lower right. The texture of the solar cells and the grid lines is clearly visible.

CLIMATE ACTION PLAN

2019 Update

California State Polytechnic University, Pomona

Purpose

The Cal Poly Pomona Climate Action Plan (CAP) guides the University's efforts to reach carbon neutrality. It provides targets for achieving carbon neutrality by 2030 through a combination of local actions and benchmarks for making progress toward that goal.

The CAP is the key policy element of the University's pledge to Second Nature's Carbon Commitment. It builds on longstanding efforts among faculty, staff, students, and donors to enhance environmental sustainability strategies since May 2007.

Carbon neutrality is an imperative goal because the analysis of the Intergovernmental Panel on Climate Change is stark: climate change is unequivocal, global warming magnitudes are increasing, and impacts on human beings and natural systems are likely to be severe with irreversible impacts.

Cal Poly Pomona is a 1,400-acre public university located 25 miles east of downtown Los Angeles, California, at the confluence of three major freeways. The land use context is suburban housing, light industrial uses, and undeveloped hillsides. The campus contains extensive agricultural land, but is situated within the suburban milieu. As of fall 2017, CPP has over 20,000 full-time and part-time students, and over 2,000 faculty and staff. Cal Poly Pomona's mission is to cultivate success through a diverse culture of experiential learning, discovery, and innovation. One of the campus' values include social and environmental responsibility.

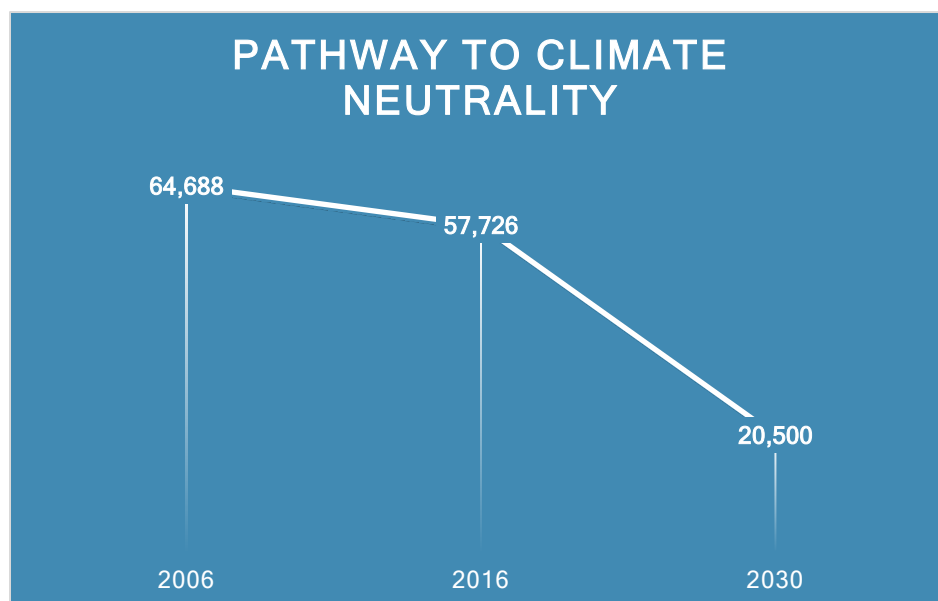
The CAP responds to the requirements of Second Nature's Carbon Commitment, but it also supports policy requirements of the State of California and the California State University system. Cal Poly Pomona is part of the California State University (CSU) system, which operates 23 campuses throughout the state. As part of its Commitment to Sustainability, the CSU "seeks to be a wise steward of scarce resources through the strong support of greenhouse gas reduction efforts" through implementation of the CSU Sustainability Policy.

The 2009 CAP was developed largely by Dr. Kyle Brown, Director of the Center for Regenerative Studies and Dr. Richard Willson, a professor in the Department of Urban and Regional Planning. They were assisted by three graduate students from the Center for Regenerative Studies: Anne Pandey, Cristina Halstead and Michelle McFadden. The 2009 CAP's preparation was funded by the Division of Administrative Affairs and guided by the CPP Climate Commitment Task Force and subcommittees, and the President's Cabinet. The 2019 CAP Update is a hybrid of the 2009 plan and adaptive modifications completed by Monika Kamboures, University Sustainability Coordinator.

2030 Goals

Cal Poly Pomona has developed an approach for achieving carbon neutrality through local campus actions. In reviewing emission trends, modeling projections, and assessing the impact of various reduction strategies, it was concluded that 2030 was an ambitious, but realistic timeline for achieving climate neutrality of campus operations. However, it is recognized that neutrality cannot be achieved through local action alone. Some activities, such as commuting and air travel, are indispensable to campus operations and while they may be able to be greatly reduced, they cannot be completely eliminated. Therefore, a portion of the metric tons of emissions projected for 2030 will be offset by campus resources and activities that reduce greenhouse gas emissions elsewhere.

The 2030 Climate Action Plan will reduce campus emissions across all sectors (transportation, facilities, energy, agriculture and landscape, solid waste, etc.) to a target emissions level of 20,500 metric tons. A number of benchmarks in each sector will be used to guide short-term actions aimed at meeting interim targets between 2020 and 2030. Furthermore, it commits the university to reduce emissions to zero through partnerships and offsets that reduce emissions elsewhere.



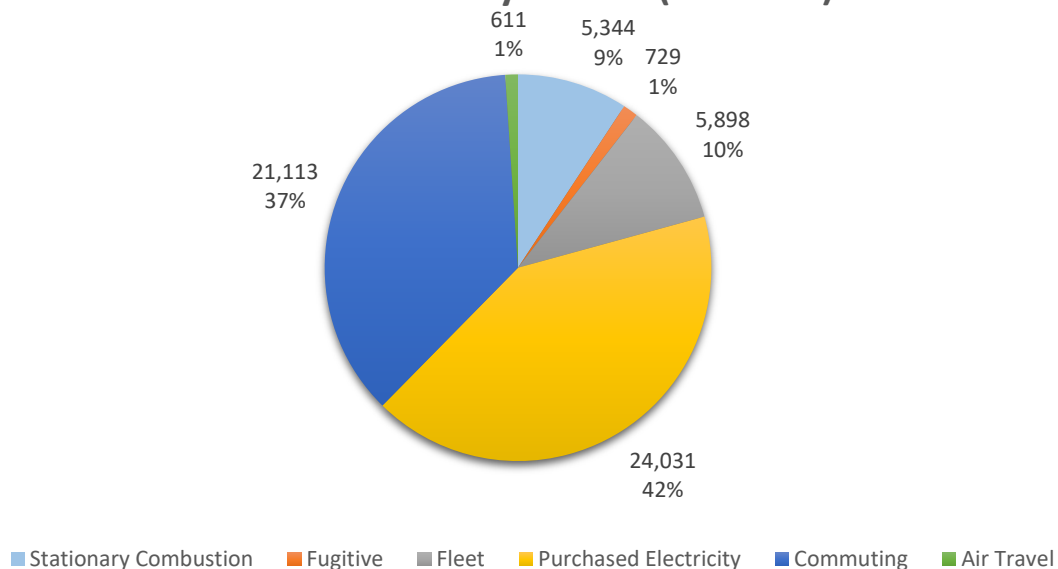
Emission Inventory

In 2007, Cal Poly Pomona published its first greenhouse gas emissions inventory report, which documented emissions associated with campus operations from the 1995-96 academic year through 2005-06. In 2005-06, the University was responsible for nearly 65,000 metric tons of carbon dioxide-equivalent greenhouse gases. Commuting activities accounted for 55% of emissions, while campus facility operations (emissions from electrical and natural gas use) constituted 43%.

Exhibit 1 characterizes the 2016-2017 fiscal year emission sources for the University. Currently, purchased electricity and campus commuting account for more than 75% of our current emissions.

Exhibit 1

GHG Emissions by Source (MTCO₂e)



Path to Neutrality

The World Resources Institute and the World Business Council for Sustainable Development have developed a standard protocol for categorizing greenhouse-gas emissions, into three Scopes:

Scope 1- includes all direct emissions or those from sources owned or controlled by the University.

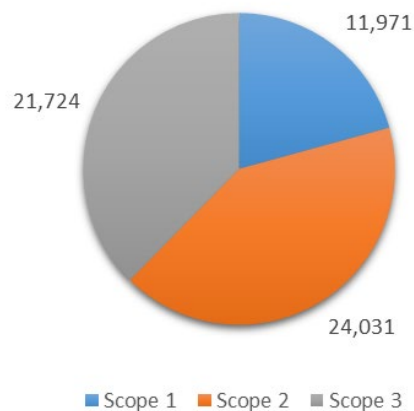
Scope 2 - includes indirect emissions from the consumption of purchased electricity, heat, or steam.

Scope 3 - includes indirect emissions resulting from building-related activities, such as the emissions of people coming to and from campus, business travel, and waste disposal.

The benchmarks below are listed within the proper scope and guided on 1) data analysis of historic GHG inventories 2) future trends and technological advances 3) University culture and California climate initiatives. The benchmarks will include reportable metrics and is intended to ensure the campus meets and/or exceeds the 2030 goal. Exhibit 2 characterizes the 2016-2017 fiscal year emission sources for the University by scope.

Exhibit 2

Emissions by Scope (MTCO₂e)



SCOPE 1

Benchmark #1 - 30% reduction in energy demand of 2005 building stock. The existing building stock is a significant resource whose efficiency must be improved if the campus is to achieve climate neutrality. The Climate Action Plan calls for the development of a renovation plan focused on energy conservation, including HVAC upgrades, efficient building management, and lighting systems with the target of reducing energy demand.

This can be achieved with focused renovation of older buildings by 2030. Overall building sustainability performance is based on Leadership in Energy and Environmental Design (LEED) certification. The University should pursue LEED certification for existing buildings (EBOM) when renovating any campus building.

Benchmark #2 - On-site generated energy capacity increase. Reduction in procurement of fossil fuels and promoting of energy independence using available economically feasible technology for on-site fossil fuels. The campus will endeavor to exceed the State of California and California Commission Renewable Portfolio Standard (RPS) sooner than the established goal of procuring 33 percent of its electricity needs from renewable sources by 2020.

Benchmark #3 - Net Zero emissions associated with new building construction. Additional buildings are necessary to accommodate anticipated growth and further the mission of the University. The policy of net zero emissions for new buildings will ensure that campus growth does not increase Cal Poly Pomona's greenhouse gas emissions. The University should continue to pursue LEED Gold or Platinum for all new construction.

Benchmark #4 - Reduction in building plug load by 5%. Purchased products available offering Energy Star to be used on campus ensures that new equipment is as efficient as possible. Education programs aimed at behavior to reduce energy consumption, plug load management programs, and other purchasing/use policies will aim to reduce plug load emissions by 5%. Sustainable purchasing guidelines under Federal Government policy (Executive Order 13423) should be followed to the greatest extent possible.

Benchmark #5 - Minimize fossil fuel consumption by 60% through increasing vehicle and equipment efficiency. The University should continue to acquire alternative-fuel vehicles (including carts, shuttles, trailers, etc.) and equipment (including farm tractors, lawn mowers, forklifts, etc.) which use less or no gasoline and in favor of alternative fuels such as renewable diesel. In addition, effective fleet management can be implemented by ensuring vehicle fleet purchases correspond with the campus mission, increased fuel economy, optimizing vehicle use, and prioritized replacement of aging vehicles with more efficient models.

Benchmark #6 - 50% reduction in natural gas consumed on campus. Natural gas has lower greenhouse gas emissions than other fossil fuels. However, emissions associated with gas consumption still represent a portion of greenhouse gases contributed by Cal Poly Pomona operations, primarily for the purpose of heating buildings and water. Zero-emission alternatives to natural gas need to be explored and implemented by 2030, with the aim of reducing demand by 50%.

Benchmark #7 - 25% reduction associated with agriculture and landscape practices. The use of fertilizers for agricultural and landscape activities, as well as the disturbance of soil carbon through tilling and other practices, contribute to Cal Poly Pomona's greenhouse gas emissions. They represent an opportunity for the campus to emerge as a leader in addressing these types of emissions which are prevalent in many communities throughout the world. Reductions in the use of synthetic fertilizers, and practices such as conservation tillage, should be implemented, with the aim of reducing emissions associated with these activities by 25%.

Benchmark #8 - Zero emissions associated with refrigerant usage on campus. Refrigerants constitute a small percentage of emissions associated with campus activity and are being phased out or substituted with chemicals that have lower global warming potential. The climate action plan calls for the elimination of all emissions associated with refrigerant usage on campus by 2030.

Benchmark #9 - 50% increase in carbon sequestration through campus landscape plantings. Current carbon sequestration rates in the campus landscape offset a small percentage of annual greenhouse-gas emissions. There is limited opportunity to cost effectively expand this effort while maintaining other campus activities. However, a 50% increase in annual carbon sequestration rates will further offset campus emissions while demonstrating the potential for carbon sequestration in the Southern California landscape.

SCOPE 2

Benchmark #10 - Zero emissions associated with electricity generated for consumption by campus. Emissions associated with electricity consumption constitutes over 40% of greenhouse gases contributed by Cal Poly Pomona operations. Conservation strategies discussed in Benchmarks #1, #2, #3, and #4 will reduce electrical demand, but it cannot be completely eliminated. The Climate Action Plan calls for 100% of the electricity used by campus to come from renewable and/or greenhouse gas-free sources by 2030. This will be achieved by a combination of on-site renewable energy projects, renewable purchase agreements with utility companies, and/or the purchase of renewable energy credits.

Benchmark #11 - Reduce total water use by 25%. The University promoted the use of reclaimed water where possible. However, water use is a contributing factor to energy use in both generation and transport. Additional steps need to be taken to reduce water usage and pursue conservation in all areas of consumption, including irrigation, potable

water, and landscaping. This benchmark exemplifies an opportunity to the campus to act as a global citizen.

SCOPE 3

Benchmark #12 - Reduce commuting population to 60% of student body. Currently, 84% of the Cal Poly Pomona student body commutes to campus. Additional on-campus housing is being constructed to respond to demand and campus priorities to increase the residential population. The University is pursuing additional housing projects with the aim of further reducing the commuting population to 60% of the student body.

Benchmark #13 - Reduce commuting trips to campus by 30%. Alternative instruction technologies, such as online and hybrid curricula, offer the potential to reduce total number of weekly commutes by students. Programs should be initiated to expand such offerings and target specific campus populations to ensure trip reductions. In addition, alternative scheduling, such as 4/10 or 9/80 workweeks during certain periods for campus staff, has demonstrated potential to reduce trips by staff and will be supplemented with programs that allow occasional work at home for those on traditional work schedules. Depending on the position function, telecommuting options should be available in conjunction to CSU and Union policies.

Benchmark #14 - 50% of campus population uses alternatives to single-occupancy vehicles to commute on a daily basis. Currently, less than 35% of the campus population resides on campus or uses carpooling, mass transit or other alternatives to single-occupancy vehicles on a daily basis. Aggressive carpooling programs focused on incentives and disincentives, as well as strategies for increasing mass transit ridership, walking, and bicycling, should be pursued to substantially increase the percentage of campus community using alternative transportation. Effective implementation of bike sharing and car sharing programs will have an impact on sustainable commuting behaviors and should be prioritized.

Benchmark #15 - 100% offset of University air travel emissions. Lower environmental impact travel should be utilized whenever possible for business purposes. With technological innovation such as virtual meetings and webinars more readily available, air travel should be avoided if possible. While air travel cannot be completely eliminated without significantly impacting the mission of the University, the purchase of offsets will be necessary for 100% of these air travel emissions on an annual basis by the year 2030.

Benchmark #16 - 80% waste diversion rate. Reductions in solid waste provides numerous environmental and cost benefits as well as decreasing greenhouse-gas emissions.

Expansion of campus recycling programs to improve effective waste management practices, such as composting (food, green waste, and manure, etc.), reuse programs, and related educational programs to raise awareness by students, faculty, and staff, will aim to increase the campus diversion rate to meet the 80% target.

Implementation & Evaluation

CAP implementation will require University leadership to execute these measures and actively support the progress of these programs. Evaluation results should be summarized by responsible department within a summarized matrix. Successful implementation will require regular annual reporting. The University Sustainability Coordinator will monitor the CAP's implementation progress on an annual basis and report to Second Nature on the progress made each year. Lastly, there are additional imbedded co-benefits to the benchmarks listed within the Climate Action Plan. Supporting the University's values, educational opportunities, improved mobility, health equity, and fiscal responsibility are all significant co-benefits to the benchmarks laid out in the plan.

Benchmarks will be evaluated annually as is required by Second Nature's Carbon Commitment members. Additionally a matrix will be developed in 2020 to assist decision-makers more readily understand the correlations of the benchmarks to overall emission totals. The hope is that through analysis of data, developed strategy, and high-level support the University will be able to reach climate neutrality prior to 2030.