

A woman with long blonde hair, wearing a light-colored jacket over a blue shirt and a brown backpack, is looking upwards and to the right. She is holding a large white map or document in front of her. The background is a field of tall grasses and some trees, with mountains visible in the distance under a clear sky.

UNIVERSITY
OF
CALIFORNIA

Annual Report on Sustainable Practices

2016

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A Message From the President

In the final months of 2015, the Paris Agreement reached by nearly 200 nations represented a turning point in the global fight against climate change. For many, that agreement meant the start of a major commitment to address this looming challenge, but we in California have been living that commitment for decades.

California has long been ahead of the curve on climate policy and clean energy, and the University of California has played a key role in the state's success. At UC we combine education, research, operational sustainability, cutting-edge entrepreneurship, and public service in a way that uniquely positions us to help take on both the local and global challenges of climate change. As a public research university, we're attacking this challenge on multiple fronts — undertaking basic and applied research, teaching, changing the way we operate, investing in climate change solutions, and being a model of positive change.

Preparing our students to be leaders in the areas of climate change and environmental sustainability is no longer an option; it is an imperative. In 2016, 228 professors in fields ranging from music to medicine took part in the first systemwide climate change and sustainability curriculum workshops, where faculty developed new course modules to introduce climate change and sustainability concepts as they relate to every discipline. Each year, these courses could reach as many as 11,000 students, including many who otherwise might not have been introduced to this material in their courses of study.

In 2016, UC made real progress toward our commitment to reach operational carbon neutrality by 2025. The largest purchase of solar energy ever made by a U.S. university — 80 megawatts from two solar farms in Fresno County — recently came online. We hit our 2014 goal of 10 megawatts of on-site solar two years early, and with projects over the past year, we have now nearly quadrupled our original goal.

Efficiency across the system has not only decreased our greenhouse gas emissions, it has made a real impact on UC finances. In 2016, the University saved \$28 million in energy costs, and since 2004 has avoided nearly \$200 million as a result of energy efficiency projects.

Many challenges remain, and reaching operational carbon neutrality by 2025 will not be easy. This report gives just a sampling of what can be achieved when we work together toward a common goal. I look forward to even greater progress in 2017.



Janet Napolitano



Executive Summary

This 13th Annual Report on Sustainable Practices highlights the ongoing progress of the University of California's comprehensive sustainability program, including advancement in all areas of the Sustainable Practices Policy as well as in research and education, Presidential Initiatives, and student, faculty and staff engagement.

2016 was a year of great progress in renewable energy for the university. A total of 36.3 MW of on-site solar power systems have been installed systemwide; another 12.9 MW are in planning. The first of two large-scale solar photovoltaic projects came online for UC's Wholesale Power Program, part of the largest solar energy purchase by any U.S. university to date. When fully operational, the solar farms will generate roughly 14 percent of UC's total annual electricity use.

Energy efficiency projects continue to cut overall energy consumption and costs significantly. Across the university, more than 1,000 projects have registered with the Energy Efficiency Partnership program, receiving \$82 million in incentive payments and avoiding \$28 million in annual energy costs.

Under the Carbon Neutrality Initiative, UC pledged to reach operational carbon neutrality by 2025. UC Santa Barbara, UC Berkeley and UCLA have already exceeded the goal of reaching

1990 greenhouse gas emission levels by 2020. Reaching carbon neutrality by 2025 will require a systemwide scaling up of current efforts. In response to this challenge, the UC Office of the President developed a Strategic Planning Framework for Carbon Neutrality with strategies and costs for reaching the 2025 goal, which will serve as a roadmap to help UC reach its goal systemwide.

UC adopted new water policies in 2015, including a 36 percent per capita reduction by 2025. UC Davis, Irvine, Merced and San Francisco have already met or exceeded the 2025 goal; UC Berkeley, Riverside, San Diego and Santa Cruz are on track to meet the 2025 goal.

Twenty projects earned a LEED certification in 2016. In 2015-2016, UC added over 2 million square feet of LEED-certified buildings; almost 20 percent of UC's total building space is LEED-certified. In 2016, 17 projects received a total of \$1.1 million in building energy efficiency incentives; the projects are projected to avoid \$300,000 annually in energy costs.

UC campuses diverted 76 percent of waste from landfills in 2015-16. While the goal is to reach zero waste by 2020, it remains challenging to capture the compostable waste stream and to convince suppliers to provide reusable or recyclable packaging.

Food procurement at UC continues to shift toward local/community-based, fair, ecologically sound and humane food sources. Residential dining programs shifted 22 percent of total food spend, medical centers 20 percent and retail food operations 18 percent in 2015-16.

This annual report features additional details on sustainability policy areas, Presidential initiatives and related work, including features on students and faculty using the campuses as living laboratories to test sustainable solutions for the campuses, California and the world.

Overview of UC Sustainability

UC's sustainability program and policy includes all 10 campuses and five medical centers. UC's sustainability commitment began in 2003 with a Regents' action that led to the adoption of a Presidential Policy on Green Building Design and Clean Energy Standards in 2004. Since adopting that policy, the university has expanded the scope to include climate protection, transportation, recycling and waste management, purchasing, food and water. The Policy can be accessed at: <http://ucal.us/suspolicy>

1970

UCSB creates Environmental Studies Program

1971

UCSC establishes Student Farm

2002

UC's first LEED certification, UCSB's Bren School, is also the first LEED Platinum laboratory building in the world.

2004

California Student Sustainability Coalition launches Education for Sustainable Living Program

President Dynes issues policy on Green Building Design and Clean Energy

2012

Goal of installing 10 MW of on-campus renewable energy met 2 years early

100th LEED certification

2013

President Napolitano announces the Carbon Neutrality Initiative, committing UC to carbon neutrality by 2025

2014

\$25 million in food purchases systemwide meet UC sustainable food criteria

President Napolitano announces the Global Food Initiative

UC commits \$1 billion for early-stage investments in clean energy innovation

2020

UC zero waste goal

UC to reduce greenhouse gas emissions to 1990 levels (scopes 1, 2 and 3)



1970-99

1977

UCD Student Farm opens

1999

UCSB students approve student fee to create Coastal Fund

2000-09

2006

The Green Initiative Fund referendum passes at UCSB

UC amends Sustainability Policy to include Transportation, Building Renovation, Operations, Waste Management and Procurement

2007

All 10 UC Chancellors sign the American College and University Presidents Climate Commitment

2009

Sustainable Foodservice section added to Sustainability Policy

2010-19

2015

>35 MW on-campus renewables installed

Bending the Curve Carbon Neutrality Research Summit

UC joins Breakthrough Energy Coalition

2016

Largest solar purchase by any U.S. university (80 MW) comes online

200th LEED certification

2020-50

2025

UC climate neutrality goal (scopes 1 and 2)

UC 36% per capita reduction in potable water use goal

2050

UC climate neutrality goal (scopes 1, 2 and 3)

Progress Toward Policy Goals

Climate and Energy



GOAL	PROGRESS
Climate neutral by 2025	UC emits 3% less greenhouse gas emissions than it did in 2000, despite expanding campus built space by 14.2 million assignable square feet, representing an increase of 23%. UC's emissions reductions are equal to removing 35,800 cars from the road.
10 MW of on-campus renewable energy by 2014	Campuses exceeded this goal in 2013. More than 36 MW of on-site solar energy, is currently installed, enough to power more than 10,000 homes for a year. Another 80 MW of off-site solar will provide roughly 14% of UC's total electricity use.

Green Building



GOAL	PROGRESS
LEED Silver minimum for all new construction	252 Total LEED-certified Buildings 51: Platinum 132: Gold 56: Silver 13: Certified
Certify at least one LEED EBOM certification on each campus	37 certifications across 8 campuses

Waste



GOAL	PROGRESS
Zero Waste by 2020	76% of campus waste was diverted from landfills in 2015-16. UC sends 198 lbs per person to landfill per year, 26% less than other comparable universities.

AWARDS

STARS GOLD-CERTIFIED UC CAMPUSES

Riverside
Merced
Santa Cruz
Santa Barbara



Food



GOAL	PROGRESS
By 2020, 20% of UC foodservice spending will be from sustainable product	20% of UC food purchases in 2015-16 were sourced from sustainable products. 6 of the 10 campus' residential dining services and four of the campus' retail services have met the goal four years early. 3 of the 5 medical centers have also met the goal early.
Certify at least one foodservice facility on each campus as a green business	7 of the 10 campuses and 5 medical centers have certified at least one foodservice facility as a green business.

Transportation



GOAL	PROGRESS
50% of all new light-duty fleet vehicles by 2025 to be zero emission or hybrid	29% of all new fleet vehicles in 2015 were purchased as all-electric or hybrids.
By 2050, more than 60% of UC employees will commute by means other than single-occupancy vehicles (SOV)	In 2015, 53% of UC employees biked, walked, carpoled or took public transit to campus, nearly double the statewide average of 27%.

Water



GOAL	PROGRESS
Reduce per capita potable water use 20% by 2020 and 36% by 2025	UC Davis, Irvine, Merced and San Francisco have already met or exceeded the 2025 goal. In total, campuses saved enough potable water this year over last to fill 647 Olympic sized swimming pools.

SIERRA COOL SCHOOLS (2016)

3rd Irvine
8th Davis
18th Santa Cruz



PRINCETON REVIEW GREEN COLLEGES (2016)

7th UC Santa Cruz
13th UC Santa Barbara



A woman with long dark hair, wearing a white long-sleeved shirt, stands in a field of green bushes and flowers. A large, blue solar panel is mounted on her back, extending from her shoulders down to her waist. The background is a bright, sunny outdoor setting with green foliage and a clear sky.

UC Sustainable Practices Policies

Climate and Energy

Policy Goals



Reduce greenhouse gas emissions to year 2000 levels by 2014 and 1990 levels by 2020.

Achieve climate neutrality for scope 1 and 2 sources by 2025.

Achieve climate neutrality from specific scope 3 sources (as defined by the American College and University Presidents' Climate Commitment) by 2050 or sooner.

PROGRESS TOWARDS GOALS

UC emissions remained relatively constant in 2015 compared to 2014 with a slight decrease in scope 1 emissions and a moderate increase in scope 2.

Systemwide, UC needs to reduce emissions from scopes 1, 2 and 3 by 23 percent in order to meet 1990 levels by 2020. UCLA, UC Berkeley and UC Santa Barbara have already exceeded this goal and UC Riverside is within 5 percent of its targets.

In order to meet climate neutrality by 2025, UC will need to reduce scope 1 and 2 emissions by 1,094,574 MTCO_{2e}, which is the equivalent of taking roughly 850,000 passenger vehicles off the road for one year.

The campus profiles at the end of this report show each campus' progress toward climate policy goals. The programs highlighted below will contribute to the emissions cuts needed to achieve the 2020 and 2025 goals, but campuses will need to scale them up.

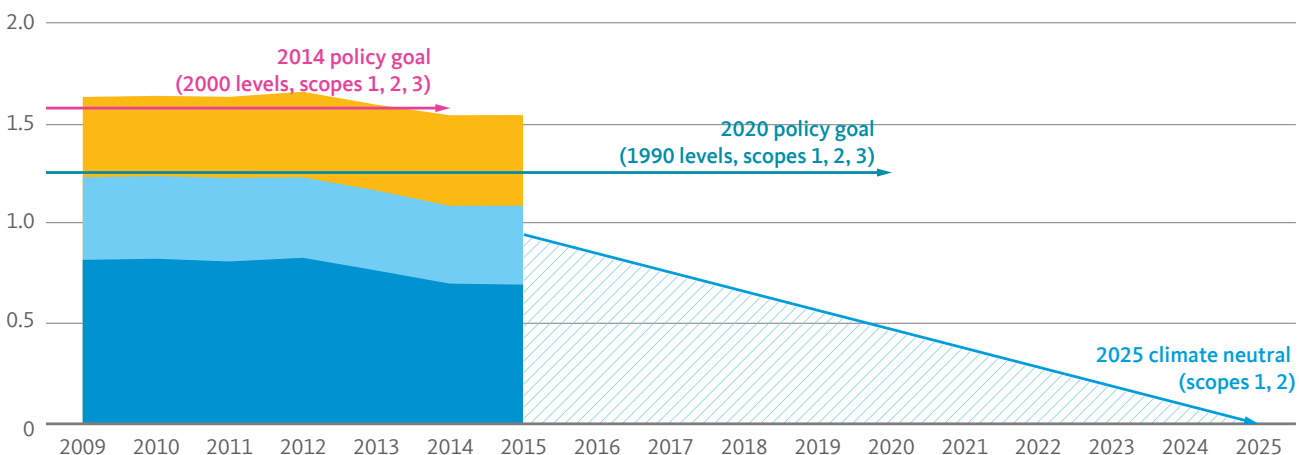
This past year, significant systemwide progress was made in terms of climate action planning, renewable energy development and energy efficiency projects. Highlights include the following:

- On-site solar photovoltaic systems have been installed at 12 locations, with 36 MW of 100 percent carbon-free electricity in operation. Another 13 MW of on-site solar projects are in the planning and construction phases.
- UC secured two sources of renewable biogas, which together will offset approximately 10 percent of UC's current natural gas consumption.

UC GREENHOUSE GAS EMISSIONS COMPARED TO CLIMATE GOALS

(Millions metric tons CO_{2e})

- Scope 3 (campus commute, business air travel)
- Scope 2 (purchased electricity)
- Scope 1 (natural gas, campus fleet, fugitive)



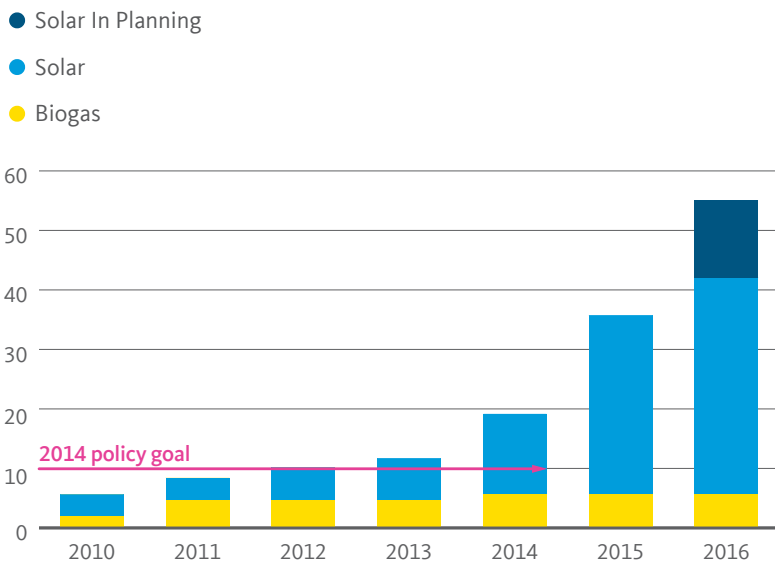


UC's Five Points solar project in Fresno County.

- The first of two large-scale solar photovoltaic projects began generating electricity in Fresno County in the fall of 2016 for UC's Wholesale Power Program. The second system is expected to be online by the summer of 2017. Together they bring UC to a total of 80 MW of off-campus solar. Once up and running the projects will generate electricity in an amount roughly equal to 14 percent of UC's total electricity use.

- To date, 1,023 university projects have registered with the Energy Efficiency Partnership program, receiving \$82 million in incentive payments and avoiding \$28 million in annual energy costs, net of project debt service payments. In 2016 alone, 28 energy efficiency and 17 new construction projects participated in these programs, earning \$4.4 million in incentives. Those projects are projected to avoid over \$550,000 annually in utility bill costs due to their energy efficient design strategies.
- In 2016, the UC Office of the President developed a Strategic Planning Framework for Carbon Neutrality. This framework outlines potential strategies and costs for reaching the 2025 goal and will be a living roadmap to help identify systemwide actions that can be taken to help UC reach its goal. Campuses are updating their Climate Action Plans by the end of 2016 and this information will further inform systemwide planning and action.

ON-CAMPUS RENEWABLE ENERGY CAPACITY (MW)



Living Lab UC Santa Cruz Renewable Microgrid

Reduction of greenhouse gas emissions will require a shift from carbon-rich fossil fuels to more decentralized and diffuse renewable resources, which could mean replacing a centralized electric power system with individual- and community-scale solar and wind.

UCSC students and faculty are currently engaged in a study of energy user behaviors with an interactive, neighborhood-scale microgrid in a Santa Cruz community.

The "Microgrid Development & Energy User Behavior" project is a multiyear study of electricity use in a cohousing development, with the goal of assessing the feasibility and performance of a local renewable microgrid covering 20 homes and a neighborhood community building.

This project will provide one of the first closely researched and monitored field deployments of an advanced, distributed residential microgrid in California. It will also provide us with a detailed understanding of the interaction among individual and community energy norms.

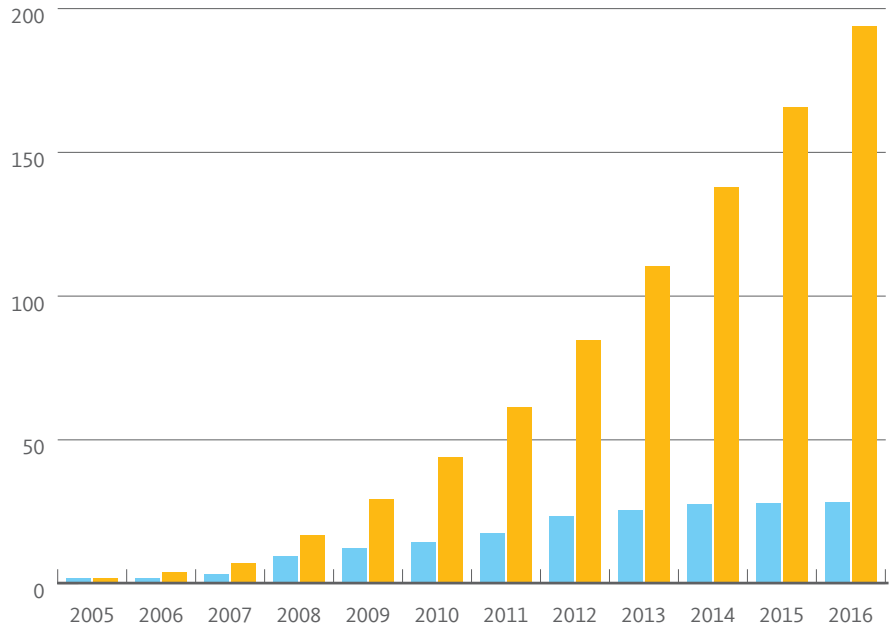
Read more:

<http://ucal.us/UCSCmicrogrid>

COST AVOIDANCE FROM ENERGY EFFICIENCY PROJECTS

(Millions of dollars, net of debt services)

- Net Avoided Cost (cumulative annual)
- Net Avoided Cost (cumulative total)



Systemwide Energy Programs

WHOLESALE POWER PROGRAM

In 2014, the Regents of the University of California obtained status from the California Public Utilities Commission as a registered Electric Service Provider (ESP), which allowed the university to provide electricity to campuses eligible for “direct access” service. In 2015, the university began providing electricity directly to all (or portions of) the seven campuses and three medical centers that are eligible to procure electricity from entities other than investor-owned or publicly-owned utilities. Approximately 25 percent of the university’s electricity use is eligible for direct access and is now served by the university’s own ESP. As part of the university’s Carbon Neutrality

Initiative, the university plans to provide 100 percent renewable electricity to its direct-access campuses by 2025. The 80 MW solar project in Fresno County is a big first step toward that goal.

ENERGY EFFICIENCY PARTNERSHIP PROGRAM

In 2004, the university formed a unique statewide energy efficiency partnership program with the California State University system and the state’s four investor-owned utilities to improve the energy performance of higher education facilities. The partnership provides funding for equipment retrofits, monitoring-based commissioning, and

training and education. In 2016, the Los Angeles Department of Water and Power (a publicly owned utility) joined the partnership, thus providing UCLA full access to the program. Since its inception in 2004, this program has allowed UC campuses to avoid nearly \$200 million in utility costs while reducing greenhouse gas emissions. Despite these historical successes, the completion of new energy efficiency projects has slowed in recent years. In recognition of this slowdown, UC is working to identify and eliminate barriers to energy efficiency project implementation as a core strategy to achieve carbon neutrality and reduce operating costs.

Transportation

Policy Goals



FLEET

- By 2025, zero-emission vehicles or hybrid vehicles shall account for at least 50 percent of all new light-duty vehicle acquisitions.

COMMUTE

- By 2025, each location shall strive to reduce its percentage of employees and students commuting by single-occupancy vehicles (SOV) by 10 percent relative to its 2015 SOV commute rates.
- By 2050, each location shall strive to have no more than 40 percent of its employees and no more than 30 percent of all employees and students commuting to the location by SOV.
- By 2025, each location shall strive to have at least 4.5 percent of commuter vehicles be zero-emission vehicles (ZEV).
- By 2050, each location shall strive to have at least 30 percent of commuter vehicles be ZEV.

PROGRESS TOWARDS GOALS

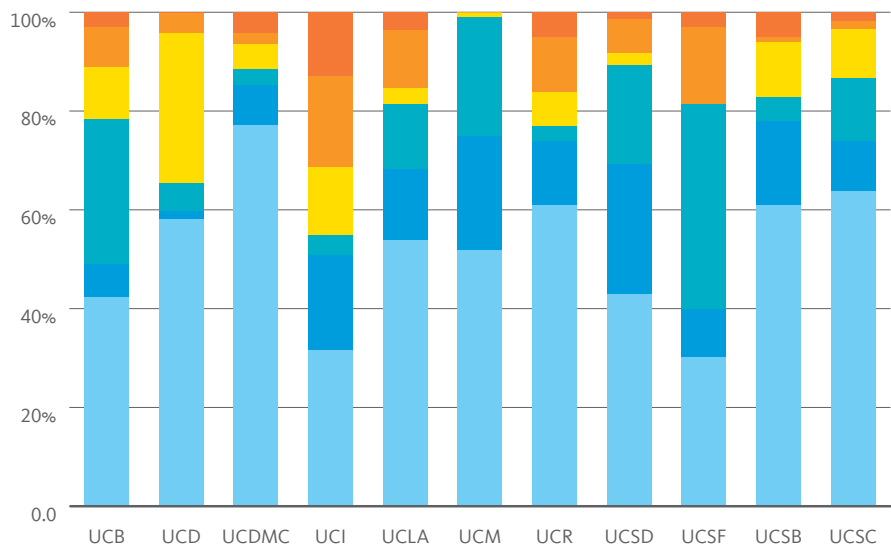
Fleet: In 2015, electric and hybrid vehicles accounted for 29 percent of all new fleet vehicle acquisitions. Emissions from campus fleet vehicles are included in UC's climate goals. Campus fleet emissions decreased by 13 percent in 2015.

Highlights from this past year include:

- UC Davis campus fleet received [Tier 3 Fleet Sustainability](#) accreditation from the National Association of Fleet Administrators (NAFA). UCLA received the 2015 NAFA Pacific Southwest Chapter Sustainable Fleet Award, operating more alternative-fueled vehicles than any other UC campus.
- Through The Green Initiative Fund (TGIF), UC Santa Barbara developed and implemented a Vehicle Incentive Program, which will assist campus staff with selecting "green" fleet vehicles as well as provide grants to offset the additional cost of alternatively fueled vehicles.
- A number of campuses are expanding their electric bus fleets. [UCLA purchased two battery-electric transit buses](#) to replace their remaining two diesel buses, becoming the first public university in California with electric buses. UC Irvine and UC San Francisco are also planning to purchase electric transit buses in the next year.

EMPLOYEE COMMUTE MODES

- Single-occupancy vehicle
- Transit
- Walk
- Multi-occupancy vehicle
- Bike
- Other



Commute: Since 2009, about half of all campuses have seen their single-occupancy vehicle mode share decrease and multi-occupancy vehicle mode share increase, which has resulted in fewer emissions from commuters. UC campuses typically have much higher rates of non-auto commuting compared to host jurisdictions and other employers in California. About 52 percent of UC employees use transit, walk, bike or commute in ways other than single-occupancy vehicles, which is nearly double the statewide average of 27 percent.

Highlights from this past year include:

- UC Santa Cruz experienced a 28 percent increase in the number of unique electric vehicle (EV) users using its charging stations on campus, serving over 200 unique EV drivers.
- Leveraging the continued success of UC Riverside's UPASS program, the campus completed a feasibility study for the construction of a mobility hub close to the center of campus. This multi-modal facility will enable Riverside Transit Authority to expand CommuterLink service to campus, provide a facility to anchor its two new RapidLink routes and connect bicycle and pedestrian pathways into the heart of campus.
- In response to a campus travel survey, UC Davis invested over \$2 million in road, path and bike parking improvements.
- Car sharing is expanding on campuses. UC Davis Medical Center added four Zipcars and UC Merced added three. See more in sidebar.
- UC Irvine was awarded the EPA "Clean Air Excellence Award" for its Sustainable Transportation program as well as the "Best Workplaces for Commuters" (part of the National Center for Transit Research) "Best Of" standing in the University category. UC San Francisco received the "Best Of" and "Gold" standing in this category for the sixth year in a row.
- Biking continues to be a growing area for most campuses. UC Irvine installed over 300 bike parking spaces, skate docks and several repair stands to create the [Bike Parking Center](#). The UC ANR Davis building includes a fleet of bicycles with helmets for staff; in the past year, staff have opted to take a bike instead of driving a car over 730 times. Six UC campuses have been recognized as [Bicycle Friendly Universities](#) by the League of American Bicyclists (Platinum: UC Davis; Gold: UC Irvine, UC Santa Barbara; Silver: UC Berkeley, UCLA, UC Santa Cruz).
- UC San Diego received a Diamond Award at the Platinum Level from the San Diego Association of Governments and the regional Commute program as recognition for its alternative transportation programs, which have helped reduce traffic congestion and greenhouse gas emissions in the region.

Living Lab Car Sharing on Campus

Parking at UC campuses is often in high demand among faculty, staff, researchers and students.

Researchers at UC Berkeley's Transportation Sustainability Research Center are studying whether car sharing could be part of the solution.

Working with Zipcar, the group surveyed more than 10,000 students, faculty and staff using the service on campuses in the U.S. and Canada, with students making up the 90 percent of the respondents.

The findings were promising. Car sharing allowed 30 percent of students who lived on campus to leave their personal cars at home. Forty-two percent of car share users on campuses said that they are less likely to buy a car in the next few years.

In addition, car sharing helps reduce greenhouse gas emissions. The study found that the total number of miles driven was reduced by up to 5 percent, reducing emissions by as much as 2.6 percent.

Read more: <http://ucal.us/zipcar>

Green Building

Policy Goals



NEW BUILDINGS AND RENOVATIONS

- Design and construct all new buildings and major renovations to a minimum LEED-NC Silver rating as well as meet the prerequisites of the Laboratories for the 21st Century Environmental Performance Criteria.
- Design and construct all renovation projects with a cost of \$5 million or greater (except acute care facilities) to a minimum LEED-CI Certified rating.
- Outperform the energy requirements of the California Building Code by at least 20 percent on all new construction and major renovation projects (except acute care facilities) or meet UC's Whole Building Energy Targets.

EXISTING BUILDING OPERATIONS AND MAINTENANCE (EBOM)

- Each campus will submit for certification one pilot building at a LEED-EBOM Certified level or higher.
- Each campus shall seek to certify as many buildings as possible through the LEED-EBOM rating system.

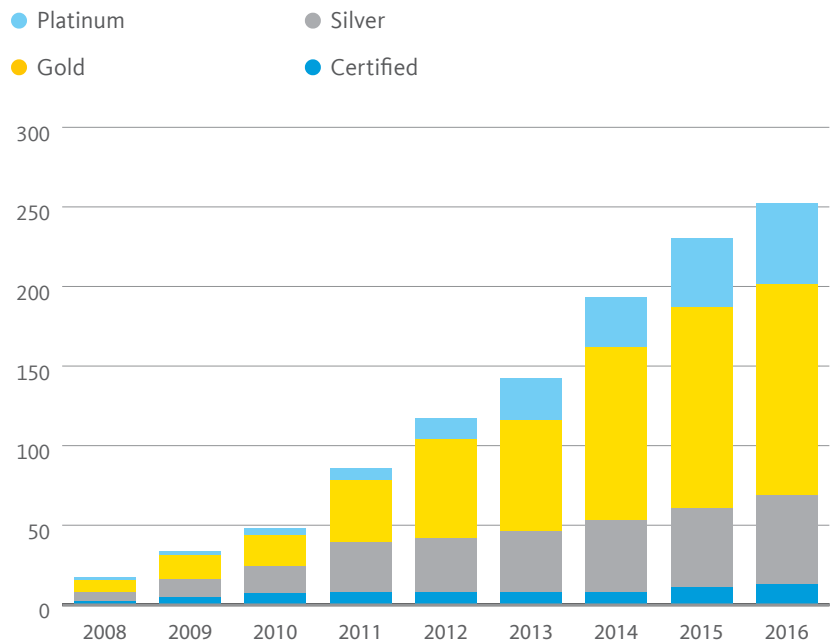
PROGRESS TOWARDS GOALS

The University of California added over 2 million square feet of LEED-certified buildings in 2015-16; almost 20 percent of UC's building space is now LEED-certified. Systemwide, UC has 252 LEED certifications, 37 of which are LEED for Existing Buildings, Operations and Maintenance.

In 2016, eight projects earned LEED-Platinum certification, six Gold, six Silver, and two Certified. Of these projects, six were LEED-EBOM certifications for UC Irvine and five were LEED for New Construction Platinum certifications for UCLA. The campus profiles at the end of this report track each campus' LEED certifications over time. A complete list of all UC LEED certifications is available at: <http://ucal.us/LEEDcerts>

The Sustainable Practices Policy requires all new construction and major renovation projects to register with the Residential or Non-Residential Savings By Design Program. These energy efficiency programs, offered by California's four investor-owned utilities and the Sacramento Municipal Utility District, provide design assistance, energy analysis, life-cycle costing and financial incentives to help projects exceed the energy provisions of California's Building Code. In 2016, 17 projects received a total of \$1.3 million in incentives. Those projects are projected to avoid nearly \$200,000 annually in energy costs due to their energy-efficient design strategies.

CUMULATIVE NUMBER OF UC LEED CERTIFICATIONS BY YEAR





UCLA's Center for Health Sciences south tower



UC Irvine's Merage School of Business II

2015-16 LEED Platinum certification highlights:

- UCLA completed seven LEED certifications in 2015-16, six of which were Platinum. The [Center for Health Sciences](#) south tower seismic renovation is UCLA's 30th LEED certification. A seismic upgrade and major renovation of the 443,000-square-foot former hospital transformed the 1950s building into research laboratory space, saving the university \$78 million by reusing the existing building. Innovative exterior stair towers employ high-performance glass curtainwall and 'solar chimney' natural ventilation to conserve lighting and conditioning energy. Stair windows and views offer an inviting alternative to elevators, in line with UCLA's Healthy Campus Initiative.
- The new, 78,000-square-foot Merage School of Business II at UC Irvine is home to a high-tech 300-seat auditorium, several of the Merage School's Centers of Excellence, a Charles Schwab Trading and Technology Lab, and a 70-seat Lyman W. Porter Colloquia Room & Executive Terrace. The project, which was delivered through a design-build process, received LEED Platinum certification through special attention paid to water and energy efficiency as well as materials and resource management.
- Completed in fall 2015, [UC Santa Barbara's Sierra Madre Villages](#) is the first residential complex in the UC system to attain LEED for Homes Platinum certification. Each of the five apartment buildings in the complex incorporates energy efficiency measures such as EnergyStar appliances, high-performance building envelopes, daylighting, LED fixtures and rooftop solar thermal systems. One of the more innovative features of the project is the onsite wetland restoration project. The project partnered with UC Santa Barbara's Cheadle Center for Biodiversity and Ecological Restoration (CCBER) to develop and manage the wetlands, which restore habitat, soil and water quality to the former golf course site.



UC Santa Barbara's Sierra Madre Villages. Credit: Tony Mastres

Living Lab LEED Lab

UC Merced and UC Santa Barbara take an innovative educational approach to improving building sustainability with LEED Lab, an interdisciplinary course that uses the campuses' built environment to educate and prepare students to become green building leaders and sustainability-focused citizens.

The course has a practical upside for the campuses. Students choose one building where they execute the LEED for Existing Building Operations and Maintenance (EB O+M) process with the goal of certifying the facility.

UC Merced, with its commitment to zero net waste, zero net energy and zero net greenhouse gas emissions, is making the students a key part of the process through the LEED Lab courses.

At UC Santa Barbara, the Student Resource Building achieved LEED Gold following work by a group of 22 students, who conducted an analysis and assessed all the features of the building related to sustainability. The students worked to submit the project for review and led the entire documentation process themselves.

Food

Policy Goals



Procure 20 percent sustainable food products by the year 2020 for campus and medical center foodservice operations.

Certify at least one foodservice facility on each campus as a green business.

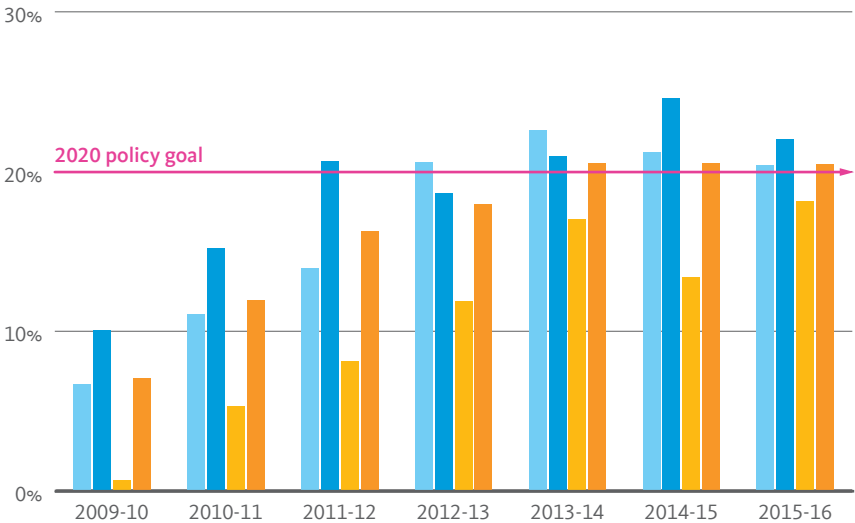
PROGRESS TOWARDS GOALS

During 2015-16, UC continued progress toward increasing food procurement toward local, community-based, fair, ecologically sound and humane food sources. In terms of sustainable food spend, residential dining programs spent \$16.9 million (22 percent of total food spend, a 2.5 percent decrease over last year); medical centers spent \$6.2 million (20 percent of total food spend, a 1 percent decrease over last year); and retail food operations spend \$7.2 million (18 percent of total food spend, a 5 percent increase over last year). UC San Francisco and UC Santa Barbara made significant progress in data collection for retail food operations, contributing in large part to the increase in this area. In terms of the decrease in residential dining sustainable spend, new procurement contracts, the avian flu, and California's ongoing drought all affected each campus' ability to increase sustainable food spend. UC Davis and UC Berkeley in particular made operational and vendor changes this last year that hindered procurement and tracking of residential sustainable food products. Both campuses anticipate improved metrics next year as these changes are addressed.

UC Medical Centers made significant progress in purchasing antibiotic-free proteins, such as beef and chicken used by UCLA Health System, and chicken breasts used by UC Davis Health System. The UC Medical Centers continue to demonstrate leadership in sustainability and positive health outcomes through their commitments to antibiotic-free as well as grass-fed proteins. UCLA, UC San Francisco and UC San Diego Medical Centers have all achieved the policy goal five years early.

SUSTAINABLE FOOD PURCHASES (PERCENT OF TOTAL FOOD SPEND)

- Medical Centers
- Residential Living
- Retail Dining
- Combined





UC Santa Cruz Global Food Initiative student fellow David Robles at the campus farm.

Seven of the 10 campuses and five medical centers have certified at least one foodservice facility as a green business. UC Santa Barbara and UC Santa Cruz have the most certifications, including all of their residential dining facilities.

Highlights from 2015-16 include:

- UC Berkeley debuted a new Food Systems minor in the Department of Environmental Science, Policy & Management as an interdisciplinary program that explores the role of food within the environment and society. Similarly, UCLA launched their [Food Studies Minor](#) and Graduate Certificate Program through the Global Food Initiative and Healthy Campus Initiative.
- UC Irvine's Hospitality & Dining capitalize services, in conjunction with Aramark, introduced new daily vegan stations at Pippin and Lot5 Dining Commons, achieving an A+ Dean's List rating for [Peta2's Vegan Report Card in 2015](#).
- UC Merced focused on building relationships with local vendors and farms, including providing 80 percent locally sourced pizza ingredients from Fresno, CA and local grass-fed beef from Newman, CA.
- UC Riverside's FarmShare (Community Supported Agriculture) has been continued indefinitely given the overwhelming success of the program during its pilot year.
- UC San Diego donated 10 tons of nonperishable foods to the Triton Food Pantry during the spring 2016 moveout.
- UC San Francisco's Café Bellini at Millberry Union reopened with a new grill serving antibiotic-free beef, chicken and turkey burgers purchased from Niman Ranch.
- UC Santa Barbara completed a best practice guide on "[Facilitating Small Growers' Ability to Do Business with UC](#)".
- UC Santa Cruz Global Food Initiative student fellow David Robles created a [music video](#) about how students create community through farming and food systems. The video was screened at the [Sustainable Agriculture Educators Association](#) conference hosted at UCSC in 2016.

Zero Waste

Policy Goals



Achieve zero waste by 2020

PROGRESS TOWARDS GOALS

Collectively, UC campuses and medical centers diverted 58 percent of municipal solid waste from landfills in 2015-16. Including construction and demolition (C&D) waste, the total diversion rate was 69 percent. However, excluding medical centers, the systemwide diversion rate was 76 percent this year, up 4 percent from last year.

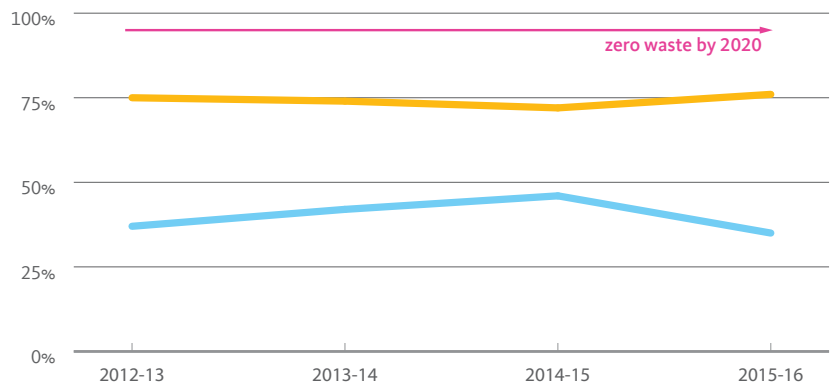
UC Irvine continues to achieve the highest waste diversion rate at 80 percent (not including C&D). UC Riverside (78 percent), UC San Francisco (74 percent), UC Davis (72 percent) and UC Santa Barbara (68 percent) are not far behind.

Waste diversion rates have plateaued on many campuses in recent years, with only UC Riverside and UC San Francisco achieving significant increases in diversion rates since 2014-15. There are several potential explanations for the lack of further progress toward the zero waste goal. The primary barriers to achieving zero waste include the challenges of capturing the compostable waste stream, convincing suppliers to provide reusable or recyclable packaging, the changing market for recyclable materials, and the limited number and proximity of composting facilities. However, flattened diversion rates are also partly due to the success of programs emphasizing the principles of “reduce and reuse,” such as reusable water bottle campaigns. For example, reuse means that there is a reduction in total waste; however, some of that avoided waste was recyclable material like plastic water bottles. Diversion rates therefore do not fully capture efforts to reduce or reuse waste.

In order to track the success of waste reduction efforts, campuses also report waste generation per capita as a complementary metric to the diversion rate. The Merced, Riverside, San Diego, and Santa Cruz campuses reported the lowest pounds of waste per weighted campus user. See the campus profile pages at the end of this report for more information.

PERCENT SOLID WASTE DIVERTED FROM LANDFILL SYSTEMWIDE

- Campuses (including construction and demolition waste)
- Medical Centers (including construction and demolition waste)



Zero waste highlights from 2015-16:

- UC Berkeley won the 2015 and 2016 PAC-12 Zero Waste Challenges, as well as the Recyclemania title for the fourth straight year. UC Davis tied for second place in Recyclemania's "Basketball Diversion Rate" category.
- UC Davis has made significant inroads into tackling hard-to-recycle laboratory waste such as pipette tip boxes, foam coolers and gloves, diverting an estimated combined amount of over 31,000 pounds (15.5 tons) in 2015-16.
- UC Irvine's [Mt. RecycleMore](#) display educated students on how much material is thrown away every single day on the main campus.
- UCLA's Housing and Hospitality Services Zero Waste Task Force developed a proposal and secured funding to implement a comprehensive three-stream waste system including compost throughout all on-campus housing by spring 2017.
- UC Merced saved \$39,500 as a result of avoided paper waste by continued usage of the OZZI reusable container program.
- UC Riverside's dining and catering services will use 100 percent compostable dishware by the end of the year to simplify waste diversion efforts.
- UC San Diego diverted 21 tons of high-quality reusable items from the spring 2016 undergraduate move out by donating these items to Disabled American Vets (DAV).
- UC San Francisco's innovative "Consolidation and Sorting" project was funded by a San Francisco Department of Environment grant, which helped to evaluate the effectiveness of studying garbage at a university level to help increase diversion rates. This one year project diverted 893 tons from landfill and helped UCSF avoid over \$100,000 in refuse costs. This ongoing sorting and evaluation effort will help the Recycling & Waste Reduction program continue to gain valuable information about disposal habits and ways to waste being sent to landfill.
- UC Santa Barbara's Zero Waste Committee is piloting composting at residential halls with three outdoor compost bins at Santa Rosa Residential Hall for residents to compost their food waste. This program will be expanded and continued next year.
- UC Santa Cruz successfully launched a revamped funding model to support zero waste goals, including implementation of a [weight-based billing](#) and dumpster pick-up system. This new system incentivizes departments to reduce waste and also saves the campus money by not collecting and dumping bins until they are actually full. Monthly "Zero Waste Reports" are available [online](#).
- The Agriculture and Natural Resource building at UC Davis added composting facilities and has conducted user training, resulting in 95 percent of paper towels being diverted from the landfill.



UC Irvine's Mt. RecycleMore

Water

Policy Goals



Reduce growth-adjusted potable water consumption 20 percent by 2020 and 36 percent by 2025, when compared to a three-year average baseline of FY 2005-06, FY 2006-07, and FY 2007-08.

PROGRESS TOWARDS GOALS

The UC Sustainability Steering Committee approved new water policies in 2015, including a 36 percent per capita reduction by 2025, a ban on new single pass cooling units in laboratories, and a commitment for each campus to draft new water action plans by July 2017.

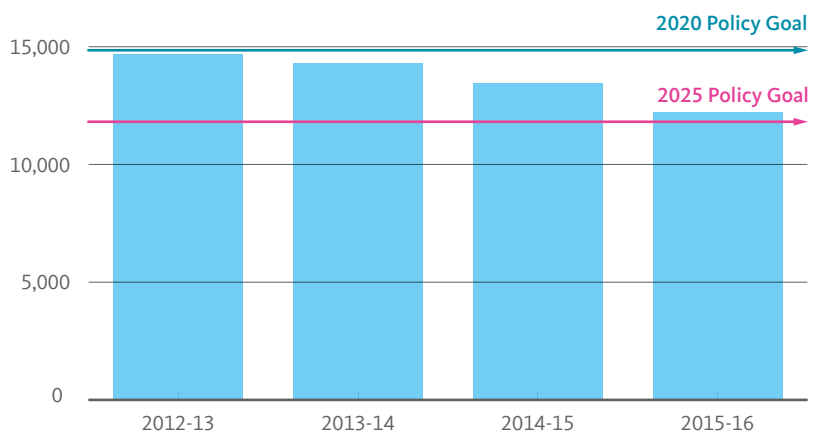
UC Davis, Irvine, Merced and San Francisco have already met or exceeded the 2025 goal. UC Berkeley, Riverside, San Diego and Santa Cruz have all met the 2020 goal four years early and are on track to meet the 2025 goal.

Examples of progress this year include the following:

- Several campuses made great strides toward reducing potable water use during California's continued drought. Compared to the state's baseline, UC Merced achieved a 23 percent reduction and UC Davis achieved a 25.7 percent reduction in potable water use from June 2015 through February 2016.
- Significant reductions in potable water use were achieved by removing turf areas on campuses. UCSF saved 9.5 million gallons of water by eliminating turf irrigation; UC Santa Barbara eliminated potable water irrigation on three lawns; and UC Davis removed approximately two acres of turf from areas in student housing and replanted with California native plant and drought-tolerant species, which will save more than 1 million gallons of water annually.
- UC Santa Barbara retrofitted 63 benchtop condensers with closed-loop cooling, which will save almost 3 million gallons per year per unit (just over 1 percent of the campus' water use). UC Irvine replaced 36 single pass cooling systems, resulting in annual savings of 1.6 million gallons of potable water. UC Santa Barbara and UC Irvine both worked to remove single pass cooling units in laboratories.

UC PER CAPITA POTABLE WATER CONSUMPTION

(Thousands of gallons per weighted campus user)



- UCLA's Geffen Hall installed a 10,000-gallon stormwater and condensate storage tank to offset toilet flushing and save the campus 139,000-160,000 gallons per year.
- Construction bringing reclaimed water from the City of San Diego to UC San Diego's two main central utilities plants for use as makeup for cooling towers was completed in early 2016. The project has reduced potable water consumption at the towers by 80 percent and enabled the university to replace potable irrigation with reclaimed irrigation across a majority of the campus.

Living Lab

UCLA water capture

Students on UCLA's Sustainability Action Research Resilience Team proposed a stormwater cistern that would capture and reuse stormwater for irrigation, conserving a valuable resource in drought parched California.

The students received an \$18,000 seed grant from TGIF, who awarded the grant to the team as part of the Sustainability Action Research program. The program, established by the Institute of the Environment and Sustainability, works

toward increasing campus sustainability. The team is working with Nurit Katz, UCLA's chief sustainability officer, to bring the project to fruition.

A more detailed engineering and feasibility study is now underway to determine the best site and sizing for the cistern.

Read more: <http://dailybruin.com/2016/05/25/ucla-research-group-wins-18000-grant-to-install-water-capture-system/>



UCLA's Sustainability Action Research's Resilience Team. Credit: Nurit Katz

Presidential Initiatives



Presidential Initiatives

CARBON NEUTRALITY INITIATIVE

In November 2013, President Janet Napolitano announced the Carbon Neutrality Initiative (CNI), which commits UC to emitting net zero greenhouse gases from its buildings and vehicle fleet by 2025, something no other major university system has done. The initiative builds on UC's pioneering work on climate research and furthers its leadership on sustainable business practices.

President Napolitano formed a Global Climate Leadership Council (GCLC) to advise UC on achieving the ambitious goal while also providing guidance on integrating carbon neutrality and other sustainability goals into UC's teaching, research and public service mission.

The council is comprised of scientists, administrators, students and experts from inside and outside UC. Now in its third year, the council continues to engage the entire university community in pursuit of the best practices, policies and technology to achieve carbon neutrality. In support of this effort, the council has secured funding for and supported implementation of 26 systemwide carbon neutrality projects. The projects focus on leveraging faculty, students and staff to improve the energy efficiency of buildings and develop carbon neutral energy supplies, while advancing complementary research and education initiatives. Projects from the last year include:

[Carbon Neutrality Student Fellowships Program](#)

In 2014, President Napolitano approved a three-year Carbon Neutrality Student Fellowship/Internship Program at each of the 10 campuses, the Lawrence Berkeley National Laboratory, the Division of Agriculture and Natural Resources and the Office of the President. More details can be found in the [Student Engagement section of the report](#).

[Faculty Climate Action Champions](#)

Expanding the best practice pioneered on the UC Santa Barbara campus, the GCLC funded the creation of a year-long climate action fellowship award for one faculty member on each campus for the 2015-2016 academic year. The program promotes faculty leadership in scholarship and teaching about climate-action solutions. Faculty champions received a small grant to fund

their proposals for activities that engage students and provide campus-wide leadership in carbon neutrality and sustainability issues. More details can be found in the [Faculty Engagement and Education section of the report](#).

[Faculty curriculum skills-sharing and networking workshops](#)

In the spring of 2016, each campus and ANR hosted a series of workshops designed to incentivize, support and connect faculty across campuses who voluntarily chose to infuse existing course curricula with relevant climate and sustainability concepts. Follow-up networking workshops were held in the fall where the workshop participants presented their climate change and sustainability curriculum innovations to the broader campus. This project resulted in more than 200 courses that integrated climate and sustainability concepts in new ways, reaching as many as 11,000 students each year.

[Deep energy efficiency: Getting to scale](#)

Energy efficiency is a primary strategy for achieving carbon neutrality, reducing life-cycle costs as well as the costs of de-carbonizing residual energy use. The UC Carbon Neutrality Initiative funded a research demonstration project with collaboration across five UC campuses and Berkeley Lab. The study builds on several initiatives of the past decade to identify strategies and recommendations to fully scale deep energy efficiency for one major end-use: lighting.

[Cool Campus Challenge \(CCC\)](#)

In the fall of 2015, the CCC engaged nearly 20,000 staff, students and faculty at the University of California (UC) in an online pledge campaign aimed at reducing the university's carbon footprint and creating a culture of sustainability across campuses. From October 6 to December 10, 2015, all university faculty, staff and students were invited to learn more about their carbon footprints on campus and at home and then pledge to complete actions to prevent greenhouse gas emissions. Program participants will save an estimated 7,000 metric tons annually of greenhouse gas emissions from new actions and 15,000 metric tons from maintaining existing actions. A participant survey revealed that the primary motivations of participants were to

improve their campus, work toward common goals, and improve the environment. The program is one of the first systemwide engagement campaigns to involve staff, faculty and students. Its success demonstrates the importance of building a lasting culture of sustainability as a key component of meeting an ambitious goal like carbon neutrality. Staff engagement in particular is critically important, and the challenge succeeded in engaging approximately 8 percent of staff across the system.

[Find the final report here.](#)

**10 CAMPUSES.
10 YEARS. 1 GOAL.
CARBON NEUTRAL
BY 2025.**



Carbon neutrality planning charrettes

To support inclusive planning efforts, facilitated carbon neutrality visioning sessions were held on each campus. Staff and other community members, including faculty and students, collaborated on creating a vision of a carbon-neutral campus and identified the opportunities and challenges unique to each location.

Green lab certification feasibility study

All UC campuses have, or are developing, “Green Lab Certification” programs to incentivize and reward researchers to adopt more sustainable practices in their laboratories. Through energy use audits, equipment replacement and implementation of operational best practices, significant energy savings can be achieved through these certification programs. UC Riverside initiated a cost feasibility study for expanding green lab certifications on all UC campuses. The study found that savings of 15 percent could be easily achieved through behavior change and even more energy could be reduced by targeting specific energy intensive equipment.

For more information, please visit the Carbon Neutrality Initiative’s website: <http://ucal.us/CNI>.

GLOBAL FOOD INITIATIVE

The University of California Global Food Initiative (GFI) addresses one of the critical issues of our time: how to sustainably and nutritiously feed a world population expected to reach 8 billion by 2025.

The initiative aligns the university’s research, outreach and operations in a sustained effort to develop, demonstrate and export solutions — throughout California, the United States and the world — for food security, health and sustainability. The initiative draws on UC’s leadership in the fields of agriculture, medicine, nutrition, climate science, public policy, social science, biological science, humanities, arts and law, among others. Its focus is both external, such as how UC translates research into policy and helps communities eat more sustainably, and internal, such as how UC leverages its collective buying power and dining practices to create desirable policies and outcomes.

More than 20 subcommittees and multi-campus working groups draw on the efforts of faculty, students and staff, as well as engagement with the community, to develop best practices and toolkits to implement them. After successfully demonstrating these best practices systemwide at UC, they can be offered to schools and communities nationwide. Areas of focus include curriculum, operations (including student food services), policy, research and public service.

In 2016, UC awarded GFI fellowships to 55 students across the university system, the third cohort of fellows since UC President Janet Napolitano launched the fellowship program.

Ryan Dowdy, a 2016 GFI fellow and UC Davis graduate student who also was a 2015 UC Grad Slam finalist, is working to reduce food processing waste by converting agricultural waste such as grape and tomato pomace into bioenergy and soil amendments.

Savannah Gardner and Tyler Watson, 2016 GFI fellows from UCLA, lead a group of students who volunteer on Sundays with Food Forward, a local nonprofit that supplies more than 6 million pounds of food annually to nearly 1 million people in Los Angeles and five neighboring counties, including to graduate students and their families living at UCLA University Village.

Sally Geislar, a GFI fellow and UC Irvine graduate student, helped the Costa Mesa Sanitary District assess its municipal organics recycling program. The program, the first of its kind in Southern California, enables residents to separate food scraps from the rest of their garbage, which are then turned into fertilizer as well as renewable natural gas that fuels the trucks used by the district to pick up waste.

For more information, please visit the initiative's website:

<http://www.ucop.edu/global-food-initiative/>

INNOVATION AND ENTREPRENEURSHIP INITIATIVE

UC brings sustainable technology from laboratory to market through its entrepreneurship programs. Cleantech to Market (C2M), a graduate-level program offered by the Energy Institute at Hass, UC Berkeley, develops innovative cleantech leaders and entrepreneurs. Students, scientists, engineers and professionals work together to translate cleantech, green chemistry and water research into market opportunities. Students experience the rewards and challenges of moving cleantech to market, researchers and entrepreneurs gain valuable feedback, and professionals engage with fresh talent and new ideas. UC cleantech startups that have benefited from this program include:

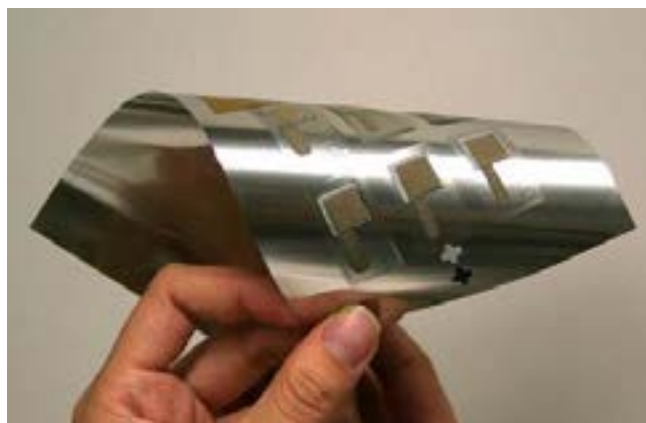
Imprint Energy (Berkeley) produces ultrathin, flexible, durable rechargeable batteries for wearable electronics and other markets. It uses non-volatile materials with no heavy metals that require less packaging, made in a waste-free, energy-efficient manner. Founder/inventor Christine Ho received research through the Center for Information Technology Research in the Interest of Society (CITRIS) and UCOP's Proof-of-Concept program. Ho connected with her co-founder Brook Kincaid through C2M, and the two subsequently won campus competitions. Ho was recently honored as one of the MIT Technology Review Innovators under 35.

CalWave (Berkeley & Berkeley Lab) employs "wave carpet" technology, co-invented by UC Berkeley professor Reza Alam and "student-researcher" Marcus Lehmann, to convert ocean wave energy for power and desalination applications. CalWave's development on campus and at C2M led to a spot in Berkeley Lab's Cyclotron Road clean energy incubator. It is a finalist for the Department of Energy's Wave Energy Prizes totaling \$2.25M.

Matrix Sensors (UCLA) makes chemical sensing technology for the next generation of mobile devices, wireless sensor networks, appliances and wearable devices possible. Applications include indoor air quality monitoring for health, ethanol sensing for mobile breathalyzers and hazardous materials detection for safety and security. Co-founded by UCLA professor James Gimzewski, the startup was one of the first tenants at UCLA's Center for NanoScience Institute (CNSI) technology incubator. Matrix Sensors now has equity investment from a major semiconductor manufacturer to help bring its technology to market.

Cinder Biological (Irvine, Berkeley & Berkeley Lab) produces biodegradable enzymes that allow for more efficient and affordable processes in biofuel production and industrial cleaning, replacing harsh industrial chemicals. Co-founders Steven Yannone and Jill Fuss met as research scientists at LBNL. Cinder Biological has benefited from other UC entrepreneurial programs: QB3's Startup in a Box program and its Garage@Berkeley incubator; semi-finalist in the UC Berkeley Haas Bplan Competition, and is now based in the SkyDeck accelerator with SBIR funding Garage@Berkeley incubator; the UC Berkeley Haas Bplan Competition, in which it was a semi-finalist; and now the SkyDeck accelerator, where it receives SBIR funding.

Read more about UC's successes in innovation and entrepreneurship in the annual [UC Technology Commercialization Report](#).



Imprint Energy creates ultra-thin, flexible batteries that can be screen printed at virtually any shape and size. Photo courtesy of Imprint Energy.

Research and Education



Research and Education

NATURAL RESERVE SYSTEM

The Natural Reserve System (NRS) is a 756,000-acre network of 39 wildland areas that include most major types of California habitats. Reserves are used primarily for scientific research, university-level instruction and strengthening public appreciation of nature.

In fiscal year 2015-16, reserves were visited by 2,022 research scientists, including faculty; 2,042 graduate students; 13,280 undergraduates and 7,984 schoolchildren. Virtually all of these reserve users came to study the natural environment.

This past year, the NRS lengthened its roster of green facilities with new buildings at Blue Oak Ranch Reserve and Steele/Burnand Anza-Borrego Desert Research Center.

Located on Mount Hamilton east of San Jose, Blue Oak Ranch Reserve added overnight housing for 52 people, a workshop, and a laboratory while remaining almost entirely energy self-sufficient. The 140 photovoltaic panels mounted on building roofs are coupled to a bank of deep-cycle batteries, allowing the reserve to operate completely off the grid while meeting current and future electrical needs. The battery bank and reverse-osmosis UV water filter are housed in a new 2,000 square foot utility barn. Treated well water is stored in a 50,000 gallon drinking water system that also doubles as a fire sprinkler system.

Steele/Burnand Anza-Borrego Desert Research Center in Borrego Springs received LEED Gold certification for its new

lodging and laboratory buildings. Both buildings are exceptionally energy efficient. A 25 kilowatt photovoltaic array powers LED lighting and a heat pump water heater. The Scientific Building design is projected to demonstrate 70 percent energy cost savings compared to a standard building and the Efficiency Building is projected to demonstrate 92 percent energy cost savings.

AGRICULTURE AND NATURAL RESOURCES

UC's Division of Agriculture and Natural Resources (ANR) is the major land-grant arm for the University of California and the state. UC ANR includes the multi-campus Agricultural Experiment Station (AES) and statewide Cooperative Extension (CE). AES faculty, CE specialists, and CE advisers are located at three campuses, one professional school and offices throughout the state, enabling them to deliver programs to California's 58 counties. UC ANR also operates nine Research and Extension Centers (RECs), which provide premier research services to scientists and students across UC. Research and community engagement focuses on science-based solutions to enhance the sustainability of food systems and natural ecosystems.

UC ANR's work on water use efficiency, groundwater quantity and drought resistant crop varieties is important for farmers and ranchers that are significantly affected by the state's ongoing drought. UC ANR researchers are developing new methodologies and tools to minimize fertilizer and water use. For example, CE helped growers in southern California to adopt fertilizer application best practices, which could reduce phosphorous



Blue Oak Ranch Reserve. Credit: Lobsang Wangdu

in the Salton Sea watershed by 75 percent. Also in southern California, the ANR-developed CropManage app is maximizing irrigation, resulting in nearly 50 percent water savings with no loss to yield or quality. Another tool identified agricultural lands that can be used to recharge groundwater aquifers. This will aid water resource managers in developing state mandated Groundwater Sustainability Plans.

In 2015-16, UC ANR conducted over 800 sustainable food-focused research and education projects covering a broad range of topics including food access, diversity in the food system, food safety, plant production and genetics, animals and their systems and technological innovation. For example, UC ANR scientists are developing methods to sustainably manage invasive pests that threaten various crops such as walnuts, citrus, grapes and strawberries, and CE outreach is enabling growers to be informed of science-based sustainable practices to protect these crops.

UC RESEARCH INITIATIVES

UC Research Initiatives (UCRI) supports UC researchers to work collaboratively on systemwide projects that synergize expertise and leverage infrastructure to address key issues affecting California and the world. Awards are made on a competitive, peer-reviewed basis, ensuring that only the highest-quality projects are funded. Since 2010, UCRI has invested over \$32 million to support collaborative research across UC's campuses and national laboratories in sustainability and climate research areas and is poised to invest an additional \$4.75 million in 2017. Funded projects inform public policy, improve technology and position UC as the national leader in sustainability research.

Two examples of recent awards made under the auspices of the 2016 President's Research Catalyst Awards demonstrate the breadth and impact of these investments:

1. Professor Samantha Ying of UC Riverside received \$1.69 million to launch the UC Consortium for Drought and Carbon Management, a collaboration among five campuses, Lawrence Berkeley National Laboratory and the UC agricultural research field stations to study the impact of drought on soil carbon and the microbiome to better predict and manage its effects on California agriculture and sustainable food production.

2. The UC Conservation Biology Network, led by professor Robert Wayne at UCLA and researchers from four other campuses, received \$1.76 million to develop bioinformatic tools to study gene expression and population responses to changing habitats and climate. Such knowledge is critical for developing strategies to successfully manage threatened species and ensure their survival.

There are many additional compelling examples from the UCRI funding portfolio. For more information about UC's systemwide funding opportunities and research portfolio, visit: <http://ucal.us/UCRI>.

ACADEMIC SENATE LEADERSHIP

UC Santa Barbara's Academic Senate has a Sustainability Working Group to advance sustainability topics in education. It launched an Interdepartmental Ph.D. Emphasis in Environment and Society (IEES) during the 2014-15 academic year that has drawn high-quality and diverse students from seven different departments. Four new departments joined IEES in the 2015-16 academic year, for a total of 19 participating units. This makes the IEES the campus' largest and most diverse Ph.D. emphasis.

UC Santa Barbara's Faculty Sustainability Champion award recognizes faculty leadership in matters related to sustainability. This year's awardee, Chandra Krintz, is bringing open-source technology to small-scale farmers. Through her project, [SmartFarm](#), she is helping farmers find leaks in their irrigation systems and plan around the weather with sensing systems and analytics.

A person wearing a blue patterned sweater and blue jeans is standing in a field of green plants. They are holding a shovel with a wooden handle and a metal head. The shovel is positioned vertically, with the blade resting on the ground. The person's hands are clasped together at the top of the handle. The background is a vast, open field under a clear sky.

UC Community Engagement

UC Community Engagement

STUDENT ENGAGEMENT

Much of the credit for the university's sustainability programs belongs to students, whose call to action led to the adoption of a green building and clean energy policy in 2004. Student sustainability programs have grown substantially and students continue to be crucial in educating faculty, staff and their peers about environmental stewardship and campus sustainability.

Co-curricular Programs

Students at the nine UC undergraduate campuses organized 300 sustainability clubs and organizations in 2016, 65 more than last year. Each campus has an average of 18 types of student sustainability programs including student orientations, environmentally-themed residence halls, energy and water reduction competitions, leadership trainings and student gardens.

The California Student Sustainability Coalition helps to galvanize student sustainability organizations to advocate more effectively on environmental issues, and promotes the Education for Sustainable Living Program (currently at Davis, UCLA and Santa Cruz), which enables students to get credit for student-led courses and to conduct research.

In 2015-16, UCLA's Sustainability Action Research Team program had seven teams working on applied research on the UCLA campus, including a resilience team that won a grant from TGIF for a stormwater cistern proposal and a biodiversity team that studied methods for restoration. UC Santa Cruz incorporated student facilitated workshops from other sustainability related projects on campus into its lecture series. Examples include the "Ethics of What We Eat by the Banana Slugs for Animals and "Grassroots Organizing for System Change not Climate Change" by Fossil Free UC.

Student fellowships

The UC Global Food Initiative (GFI) and Carbon Neutrality Initiative (CNI) Student Fellowship Programs launched in 2014-15. Including the 2016-17 fellows, so far 86 CNI and 151 GFI fellows have worked on year-long projects addressing topics such as climate action plans, resiliency, carbon offsets, building efficiency data systems, student engagement and food insecurity. In addition to their projects, fellows benefit from leadership training, a joint symposium and other learning opportunities.

Student sustainability funds

Students on eight of the nine UC undergraduate campuses have approved student fee referenda to fund sustainability projects and student internships; UC Davis is the newest campus to adopt such a program. Students on most campuses call these funds "The Green Initiative Fund" or "TGIF." Originally the result of a student referendum effort at UCSB, this green fee, which is added to students' fees, provides small grants for projects that advance sustainability in areas such as transportation, energy efficiency, food justice, behavior change and more. Hundreds of student-led sustainability projects have been funded through these programs. In total, TGIF and similar programs provide more than \$1.5 million in annual funding for student-led sustainability projects.

Alumni

Many UC alumni leverage their education and research experience to start organizations and businesses, including innovative enterprises such as Lyft and PhillyCarShare. 2016's Forbes "30 Under 30" list included influential entrepreneurs who are advancing innovative technology and social causes.

UC Santa Cruz graduate Martha Mendoza received her second Pulitzer Prize for journalism as part of an Associated Press team that uncovered the use of slave labor in the Thai seafood industry.

UC STUDENT SUSTAINABILITY ORGANIZATIONS BY CAMPUS

	2013-14	2014-15	2015-16
Berkeley	27	50	46
Davis	34	30	30
Irvine	16	13	22
UCLA	20	44	44
Merced	6	4	31
Riverside	5	12	17
San Diego	15	24	30
Santa Barbara	35	45	43
Santa Cruz	22	13	37
Total	180	235	300

FACULTY ENGAGEMENT AND EDUCATION

The UC Presidential Initiatives have provided exciting opportunities this year for faculty to showcase their work and engage extensively in sustainability issues across the UC system.

Adapted from UC Santa Barbara's Faculty Sustainability Champion program, the Faculty Climate Action Champion awards on each campus in 2015-16 provided funding support for faculty to work with students on projects aimed at building community engagement and awareness. The inaugural group of champions includes physicists, engineers, biologists, atmospheric scientists and others who have exhibited outstanding teaching, research and public service in the areas of climate change solutions, action and broad engagement. The program is designed to help meet and focus students' interest in climate-action education, and to inspire other faculty members to help the university's goal of achieving carbon neutrality by 2025 through engaged research and education.

UC Santa Cruz's Climate Action Champion, Sue Carter, organized UC Carbon Slam to give students and faculty from all 10 UC campuses the chance to present their research on climate impacts and climate solutions to industry leaders. Students also had an opportunity to pitch their ideas to a panel of expert judges looking for the ideas that held the greatest potential to have an impact on the fight against climate change. UC Berkeley's Alexis Shusterman won the climate impacts portion of the competition for her work with [BEACON](#), which focuses on an inexpensive way to help cities and counties assess the effectiveness of their policies. For climate change solutions, the judges awarded the first place prize to Eric Walters from UC Davis, who is working on developing biofuels using a novel fungal intermediary that could help bring the cost of manufacturing down to a level competitive with petroleum-based fuels.

Many of the Faculty Climate Action Champions played a key role in a series of curriculum building workshops, based on a model championed by the Association for the Advancement of Sustainability in Higher Education (AASHE). Faculty from each campus interested in adding climate change and sustainability concepts to their existing courses participated in workshops to learn, share ideas and find the resources to make it happen. The attendees of the workshops came from every imaginable field, representing over 160 different academic units across the university. In all, 228 faculty members participated. With an average of 50 students per class, these courses could reach more than 11,000 students every year, many of whom would never have been exposed to this material otherwise.

UC San Diego's Scripps Institution of Oceanography professor Ram Ramanathan initiated a pilot upper-division seminar on climate solutions in Spring 2016. The course featured lecturers from five UC campuses from multiple disciplines, along with external lecturers from state government and international bodies. Lectures focused on pragmatic paths for achieving carbon neutrality and climate stability, inspired by UC's Carbon Neutrality Initiative and California's recent climate legislation. Professor Ramanathan and his faculty collaborators from across the UC system plan to build on the pilot Climate Solutions course by offering it on every undergraduate UC campus in 2017.

Living Lab UC Davis' D-Lab

UC Davis' Climate Action Champion, professor Kurt Kornbluth, works with UC Davis facilities management to identify on-campus opportunities for carbon reduction — and then he has students help find the solutions.

A mechanical engineer, Kornbluth is founder and director of the UC Davis D-Lab and of the Program for International Energy Technologies (PIET) lab.

Kornbluth teaches interdisciplinary project-based courses, including "A Path to Zero Net Energy," where students work with actual campus clients to improve campus sustainability. In a recent project, students helped campus facilities determine how to optimize the filling of a large water storage tank.

The D-Lab is a place for students to interact and learn from each other while coming up with ideas that contribute toward carbon neutrality. Kornbluth's courses bring students from different academic backgrounds together to work towards solutions in sustainability and energy efficiency that can be applied to global challenges.

Read more: <http://ucal.us/DLab>



Tom Steyer with students at the UC Carbon Slam.

STAFF DEVELOPMENT

California Higher Education Sustainability Conference (CHESC)

Former Secretary of the California Department of Food and Agriculture and third generation fruit and vegetable grower A.G. Kawamura keynoted the 15th annual CHESC, a unique statewide collaboration between UC, California State University (CSU), California Community Colleges, and private colleges and universities in the state. California State University Fullerton hosted the conference, which attracted 834 registrants, including 174 students, from 74 campuses.

Programming on sharing sustainability best practices and learning about innovative research and new technologies spanned five days and included 172 speakers from 41 different campuses.

The UC Office of the President organized the 12th Annual Energy Efficiency and Sustainability Best Practice Awards to recognize UC and CSU energy and sustainability projects at the conference. Video case studies of energy efficiency-related best practice award winners are available online at: <http://ucal.us/GreenBldgs>.

UC promotes excellence in sustainability through trainings and professional certifications for staff. The Energy Efficiency Partnership program with CSU and the state's four investor-owned utilities provides funding for energy efficiency and green building training. UCOP manages this training program to impart skill sets necessary for successfully implementing the partnership's investments in energy efficiency while also targeting training topics to achieve UC's sustainability policy goals.

Trainings and workshops for CSU and UC staff in 2015-16 included:

- A training at CSU San Marcos focused on solar storage, batteries, contracting and IT Security.
- An Energy Managers' Meeting at CHESC with topics that included the state building code's energy efficiency requirements, whole building energy approaches, water conserving technologies, building analytics and ongoing commissioning, as well as best practices for energy efficiency projects.

The program provided 40 scholarships for UC staff to attend trainings that prepared them to earn energy efficiency-related professional certifications.

UC Sustainability Champion

UC's chief operating officer presents the UC Sustainability Champion award each year at the California Higher Education Sustainability Conference in recognition of a person who has been a role model to their peers around the state; has promoted sustainability throughout their campus; achieved results; and who truly embodies the term "leader." This year's award winner highlighted the critical role staff play in transforming campus operations as well as in providing leadership for UC's systemwide initiatives.

In her systemwide roles as co-chair of the Climate Change Working Group and representative to the UC Global Climate Leadership Council, UC Berkeley's Kira Stoll catalyzed staff engagement and climate action planning in support of UC's goal to be carbon neutral by 2025. In particular, she initiated, planned and led the systemwide Cool Campus Challenge, which brought over 19,000 staff, students and faculty together across UC to pledge to reduce greenhouse gas emissions through on-campus actions. Her ambition for this broad-reaching campaign exceeded all expectations and demonstrated the incredible power of our UC community when we all work together toward a common goal.



Sustainability Champion Kira Stoll.

Investments

The Office of the Chief Investment Officer of the Regents (OCIO) is responsible for managing UC's endowment, pension, retirement savings and working capital assets, which total close to \$100 billion.

The UC Board of Regents approved the Framework for Sustainable Investing in September 2015. This gave the OCIO the authority to consider important additional criteria related to sustainability in investment evaluation and risk-assessment. The OCIO's global ranking on sustainability rose by eight spots in 2015 to be ranked 17th among all worldwide investment funds and ranked first among university investment funds addressing climate change.

Investing in Solutions

The OCIO is committed to making investments that provide solutions to environmental and social issues while earning a competitive return. The OCIO is building strategic partnerships with the public sector, its peers, industry groups and with all parts of the university to access and scale sustainable investment opportunities.

The university's visibility in energy and sustainability has helped bring to the OCIO new energy investment opportunities and partnerships that will position our portfolio for future growth, including facilitating partnerships and collaborations in clean energy.

Over the past year, the OCIO:

- Co-founded the [Aligned Intermediary](#), an investment advisory group focused on helping long-term investors — sovereign funds, pension funds, endowments, financial institutions, insurance companies, family offices and foundations — accelerate and increase the flow of capital into climate infrastructure projects and organizations in the areas of clean energy, water infrastructure and waste-to-value.
- Continued to work with the Breakthrough Energy Coalition, a group of like-minded investors led by Bill Gates which focuses on clean energy sustainability innovation.

Collaboration

The OCIO collaborates with its peers, industry groups, the public and private sectors and the UC community to deepen its knowledge of environmental, social and governance risks and opportunities, build strategic partnerships, access new opportunities and magnify our collective voice in the pursuit of sustainability. To this end, the OCIO participates in a number of collaborative initiatives, including the Principles for Responsible Investment (PRI), the Ceres' Investor Network on Climate Risk, the Intentional Endowments Network, CDP and the World Economic Forum. The OCIO has taken a visible role in the World Economic Forum's efforts to promote two degrees strategies by the world's largest fossil fuel companies.

Reporting and transparency

The OCIO is committed to transparency and accountability across its operations. The OCIO reports annually to the PRI and incorporates sustainable investment updates into its reporting to the Regents' Committee on Investments, which may be viewed [here](#). As part of its commitment to the Montreal Carbon Pledge, the OCIO completed a [carbon footprint analysis](#) of the UC public equities portfolio for 2015. As of August 2015, the total carbon footprint for the \$30 billion public equity portfolio of the University of California is 5,595,178 tons of CO₂e (189.5 tons of CO₂e per \$1 million), according to MSCI analysis, 5 percent less than a portfolio made up of the MSCI world equity index. MSCI is a U.S.-based service provider of investment decision tools including indexes, analytical tools and data.

UC Health

The University of California Health System continues to take a leadership position in Medical Center sustainability with many important achievements in 2015-16. In particular, UC medical centers continue to surpass targets in sustainable food purchasing and have invested in carbon neutrality, hiring new energy managers to identify and work on energy efficiency projects.

Sustainability goals contribute to Medical Center efforts to adjust to the changing economics of healthcare by identifying cost savings in the areas of energy, water, purchasing, and waste. The Medical Centers are therefore working to identify best practices that both save money and create healthy communities and a healthy environment.

Highlights of progress from 2015-16 include:

- Three of the five UC Medical Centers have surpassed the 20 percent sustainable food purchasing goal, with UCLA leading the way at 30 percent.
- UC San Francisco Medical Center won a Circles of Excellence award for “Greening the Operating Room.” The recognition was presented for reprocessing and recycling efforts in three hospitals, which saved \$1.14 million last year.
- A steam trap retrofit at UC San Francisco’s Mt. Zion Hospital (an Energy Star-rated building) is estimated to save over \$19,000 per year in avoided energy and even more in water savings.
- When UCSF Benioff Children’s Hospital moved to its new facility at Mission Bay, the hospital donated 63,000 pounds of medical equipment, furniture, and supplies to Harare Children’s Hospital in Zimbabwe. UCSF Health continues to reprocess single use devices, diverting 62,000 pounds of waste and generating \$1.2 million in savings.
- UC Irvine Health System undertook a WaterSaver Solutions global flow restrictor installation project. The project is estimated to save 7,271,895 gallons of water and 31,956 therms of gas annually in onsite locations. Implementation in off-site locations is estimated to save 1,586,582 gallons of water and 7,520 therms of gas annually.
- UC San Diego’s Perlman Medical Offices at the La Jolla Clinics achieved substantial yearly savings through a controls upgrade that will avoid 427,703 kWh and \$72,139 in utility costs annually.
- At UC Davis Medical Center, a new condensate collection process at the Central Plant is saving 2 million gallons of water a year, and landscaping upgrades, including xeriscaping of the main hospital entrance, will save up to half a million gallons, avoiding \$5,000 per year in water costs.
- UCLA Health System completed implementation of reusable isolation precaution gowns across the system. UCLA Health System also extended alcohol and formalin recycling to Ronald Reagan UCLA Medical Center and eliminated excess waste from packaging at UCLA Santa Monica Medical Center.



UCSF Medical Center recycling program.

Social Responsibility

UC Trademark Licensing Code of Conduct Policy

UC was one of the first educational institutions in the country to institute a code of conduct establishing work and safety standards in the manufacturing of all goods such as apparel bearing the university and campus names, logos and other trademarks owned by UC. The UC Code of Conduct for Trademark Licensees (UC Code), issued in 1998, is being revised to conform to UC's policy format, clarify responsibilities associated with the policy, strengthen its worker's rights principles, and reference important legislation such as those associated with human trafficking and use of "conflict" minerals. It is anticipated that the revised UC Code policy will be issued before the end of AY 2016-17, following systemwide review.

Social Sustainability Practices in UC Promotional Goods

The UC Code applies not only to goods destined for the retail market but also to promotional goods, such as T-shirts, caps, pens, pins and other items that are emblazoned with UC campus and department names/logos and used by the department or given away to promote its services. A Leadership Development Program (LDP) project, sponsored by UC Office of the President Chief Operating Officer Rachael Nava, identified the need for a centralized service to be able to find UC-approved vendors. The LDP members identified purchases of promotional items by the UC community but that not all were being acquired from trademark licensees. Acquiring promotional goods only from companies who have agreed to comply with the UC Code and execute the necessary UC license will help UC reduce potential harm to workers and mitigate reputational risk associated with the production of UC branded goods. Their recommendations include but are not limited to:

- Revise and strengthen policies (such as the aforementioned UC Code)
- Develop a centralized online portal for UC buyers of promotional items

Following the recommendation of the LDP project team, the UC Code Steering Committee has begun to identify communication channels to share this important information, such as the 2016 Risk Summit, and is researching options for developing an online portal for promotional goods.

The Campuses



UC Berkeley



In the past year, UC Berkeley has achieved several milestones. In April, TGIF was renewed for an additional 10 years by a 68 percent 'yes' vote. Since its inaugural grant cycle in 2008, TGIF has awarded more than \$2 million in grants to 160 projects on campus.

Solar PV systems at the MLK Student Union, the new Eshleman Hall building, the Recreation Sports complex, the University Village apartments, and Jacobs Hall provide 1 MW of renewable energy to the campus. In May, 10 departments received green certification, meaning that over 3,000 staff and faculty (or 20%) are now part of a green department.

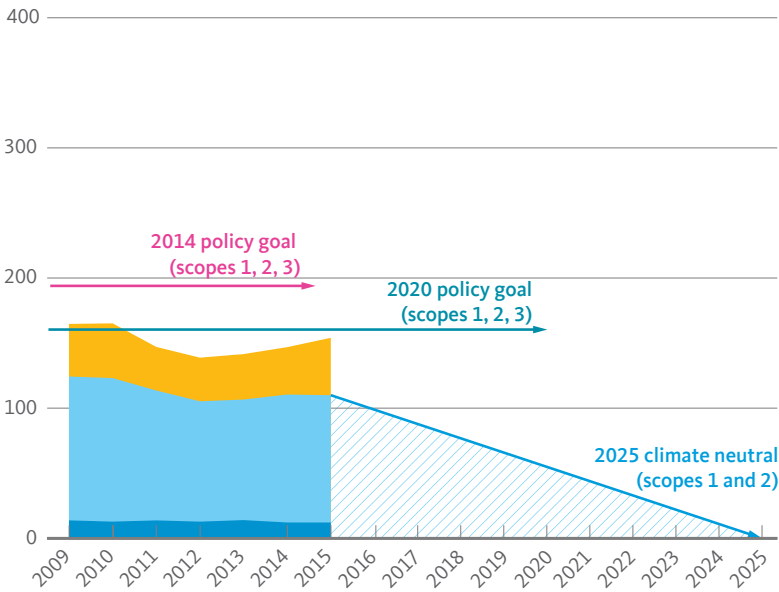
During their regular commute, faculty, staff, and students walk around 9.6 million miles per year and bike 10.1 million miles per year. There are now over 5,500 people commuting by bicycle to campus. Campus water use has also been reduced cumulatively

to almost 20 percent less than 2008 levels. Total use is estimated to be down by 10 percent since the drought declaration and by one-third since 1975.

This year, UC Berkeley was recognized for its impressive sustainability efforts. Sustainability manager Kira Stoll received the 2016 UC Sustainability Champion award at the annual California Higher Education Sustainability Conference. Cal Dining won awards for the new local sourcing concept at Brown's and for their 'extreme local' theme dining hall meals. At the national collegiate waste-diversion competition, the campus took top honors at the 2016 PAC-12 Zero Waste Challenge while also defending its Recyclemania title for the fourth straight year.

GREENHOUSE GAS EMISSIONS

(Thousand metric tons CO₂e)



- Scope 1 (natural gas, campus fleet, fugitive)
- Scope 2 (purchased electricity)
- Scope 3 (campus commute, business air travel)

Goal:

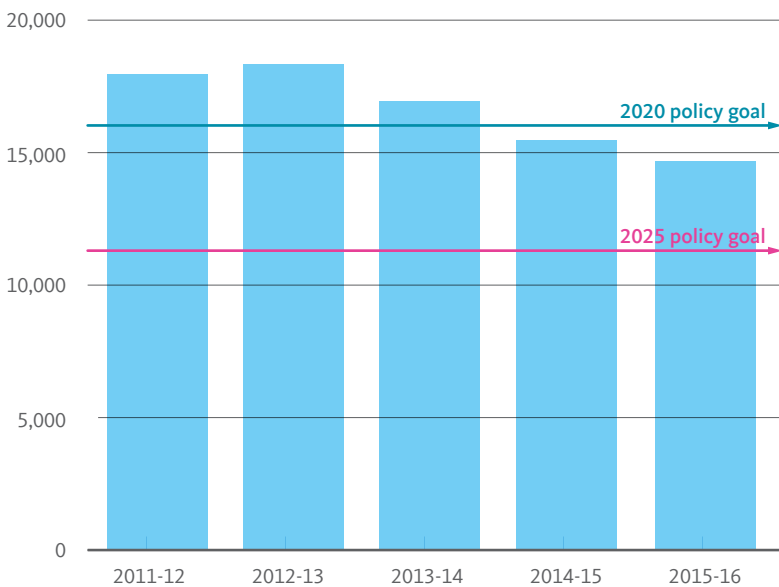
Reduce greenhouse gas emissions to year 2000 levels by 2014 and 1990 levels by 2020. Achieve climate neutrality for scope 1 and 2 sources by 2025.

Progress:

UC Berkeley has achieved the 2014 and 2020 policy goals. In 2015, UC Berkeley's GHG emissions totaled 154,041 metric tons, up 4% from the previous year, primarily from increases in scope 2 and 3 emissions.

POTABLE WATER CONSUMPTION

(Gallons per capita)



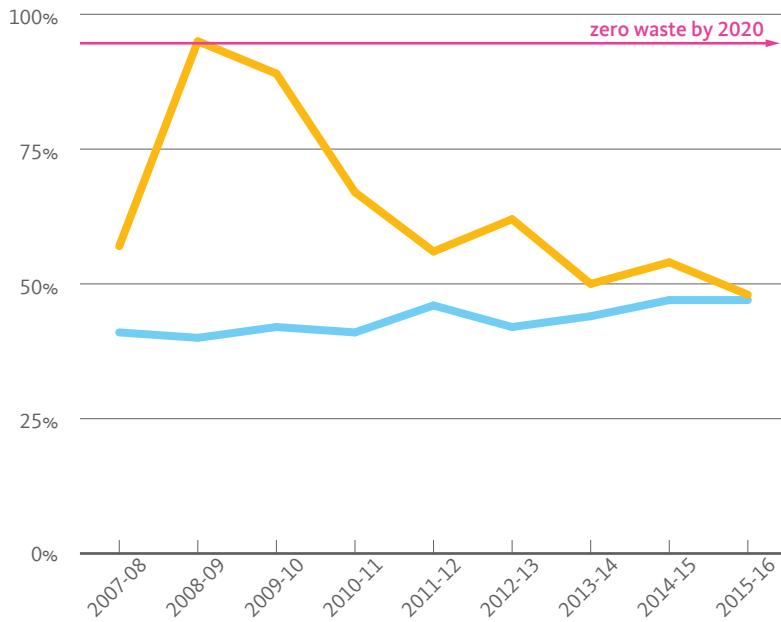
Goal:

Reduce growth-adjusted potable water consumption 20% by 2020 and 36% by 2025, when compared to a three-year average baseline of FY 2005-06, FY 2006-07, and FY 2007-08.

Progress:

In FY 2015-16, UC Berkeley consumed 14,680 gallons of potable water per capita. This is a 28% reduction from baseline, thereby meeting the 2020 policy goal four years early. The campus is on track to meet the 2025 goal.

SOLID WASTE DIVERTED FROM LANDFILL



- With construction and demolition
- Without construction and demolition

Goal:

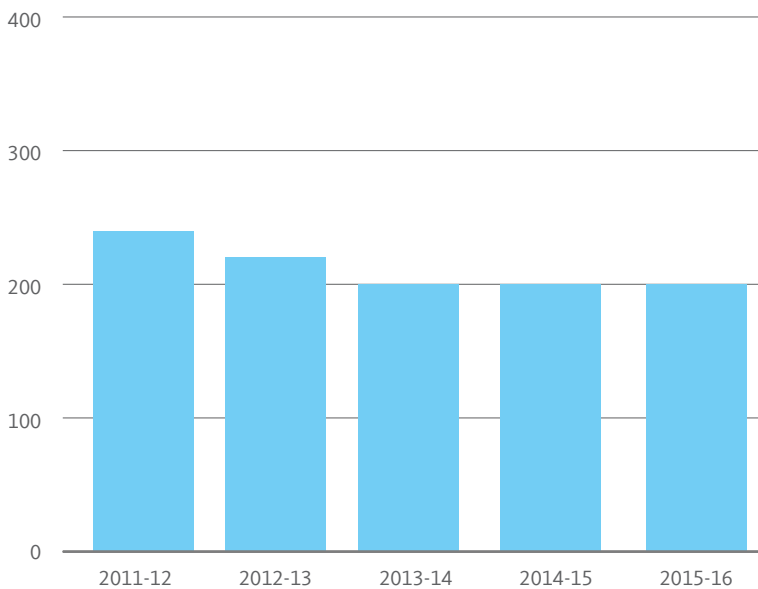
Zero Waste by 2020.

Progress:

In FY 2015-16, UC Berkeley diverted 48% of its waste from the landfill, a decrease of 6 percentage points from FY 2014-15. When waste from construction and demolition (C&D) is not included, the amount of waste diverted from the landfill was 47% in FY 2015-16.

LANDFILL WASTE (NOT INCLUDING C&D)

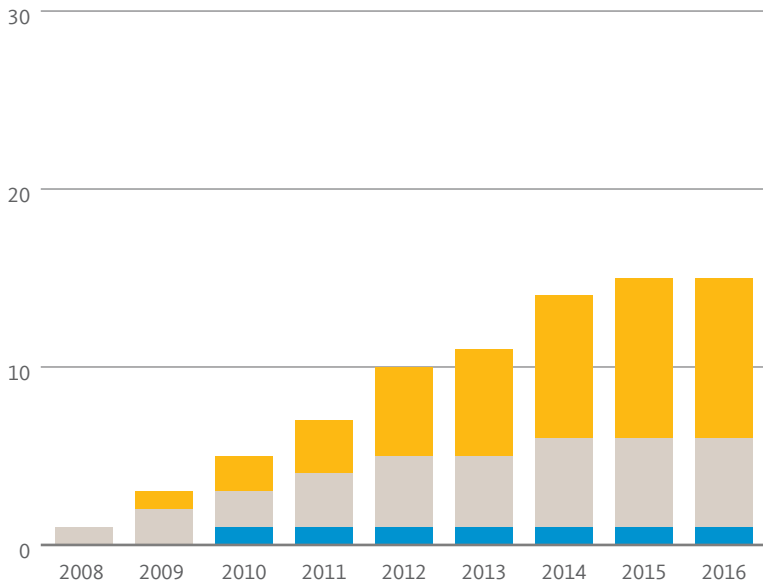
(Pounds per capita)



Progress:

In FY 2015-16, UC Berkeley sent 200 pounds of solid waste per capita to the landfill, same as the previous year.

TOTAL NUMBER OF LEED CERTIFICATIONS



- Platinum
- Gold
- Silver
- Certified

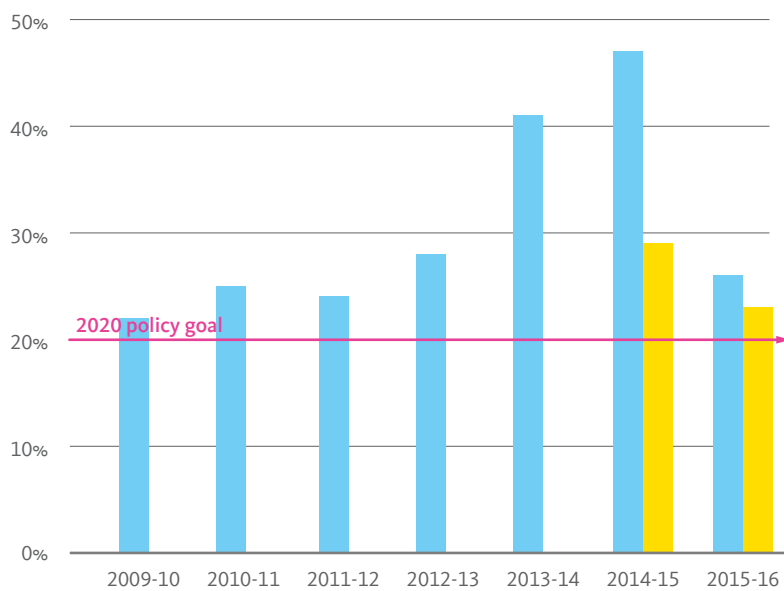
Goal:

LEED Silver certification for all new buildings and major renovations.

Progress:

In FY 2015-16, UC Berkeley received no new LEED certifications, maintaining its total of 15 LEED certifications.

SUSTAINABLE FOOD PURCHASES



- Residential
- Retail

Goal:

Procure 20% sustainable food products by the year 2020.

Progress:

In FY 2015-16, the amount of food purchased by UC Berkeley's residential dining services that met one or more sustainable food criteria decreased to 26%. UC Berkeley's residential dining and retail foodservices continue to exceed the 2020 policy goal of 20% sustainable food purchases.

UC Davis



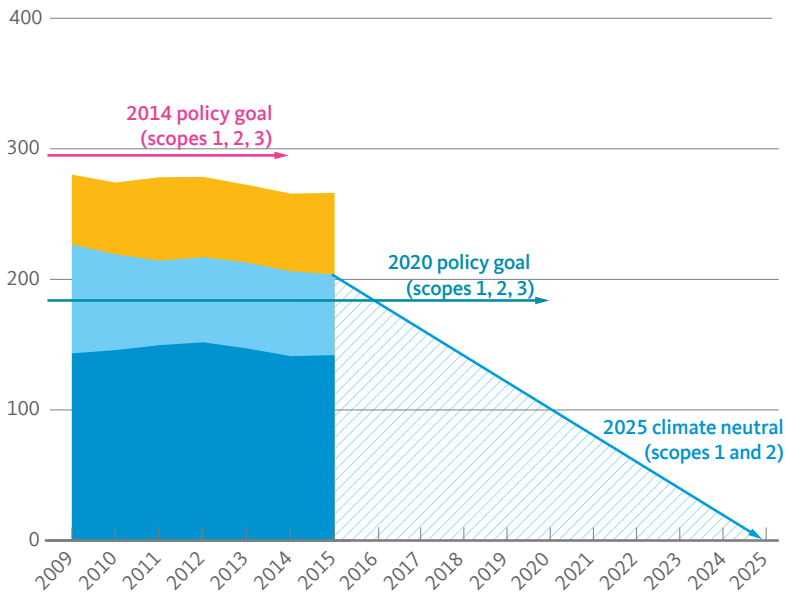
This year, UC Davis took notable actions to reduce greenhouse gas emissions and make progress on sustainability goals. In November 2015, UC Davis formally dedicated a [16.3 MW large solar power plant, the largest known of any university campus](#), which yearly will generate approximately 33 million kilowatt-hours for the campus, and reduce greenhouse gas emissions by about 14,000 metric tons. The UC Davis Library formed a very competitive team for the UC Cool Campus Challenge, and due to their work received a campus-sponsored grant to deepen their sustainability efforts through the campus Green Workplace program. Staff and faculty worked together to provide students in project-based learning classes with real, campus-based climate neutrality and energy policy projects such as: building a financial analysis tool for conversion of campus district steam heating to hot water heating, analyzing energy storage options, analyzing potential for ocean wave-generated energy, and assembling and reviewing complex commuting data for the campus Medical Center.

The campus achieved a 27 percent reduction in water use for fiscal year 2015-16 through the use of recycled tertiary-treated wastewater in campus cooling towers, major reductions in irrigation, fixture replacements, and behavior-based savings. To further waste reduction, the campus reduced both paper purchases by nearly 13 percent and paper spend by 7 percent by switching to paper towels and toilet paper without cardboard rolls. In laboratories, UC Davis diverted an estimated 31,000 pounds of hard-to-recycle laboratory pipette tip boxes, foam coolers and gloves. UC Davis added more Zipcars due to the popularity of the program on campus.

UC Davis moved up one spot to place third in environmental sustainability in the 2016 international GreenMetric Global Ranking, a survey of more than 400 colleges conducted by the University of Indonesia that lauded UC Davis's teaching, research, campus lifestyle and management. The campus also placed eighth in the Sierra Club's "Cool Schools" 2016 ranking.

GREENHOUSE GAS EMISSIONS

(Thousand metric tons CO₂e)



- Scope 1 (natural gas, campus fleet, fugitive)
- Scope 2 (purchased electricity)
- Scope 3 (campus commute, business air travel)

Goal:

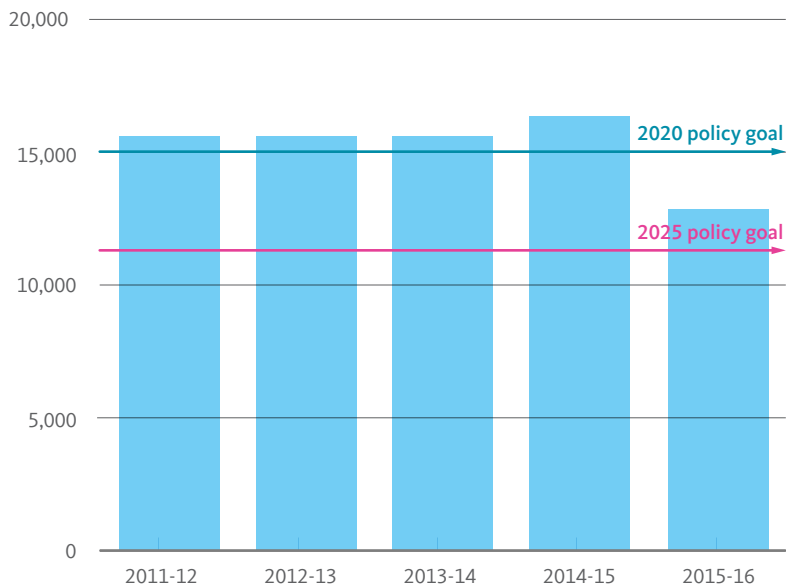
Reduce greenhouse gas emissions to year 2000 levels by 2014 and 1990 levels by 2020. Achieve climate neutrality for scope 1 and 2 sources by 2025.

Progress:

UC Davis has achieved the 2014 policy goal of reducing greenhouse gas emissions to 2000 levels. In 2015, UC Davis's GHG emissions totaled 266,301 metric tons, up slightly from the previous year and primarily due to increases in scope 3 emissions.

POTABLE WATER CONSUMPTION

(Gallons per capita)



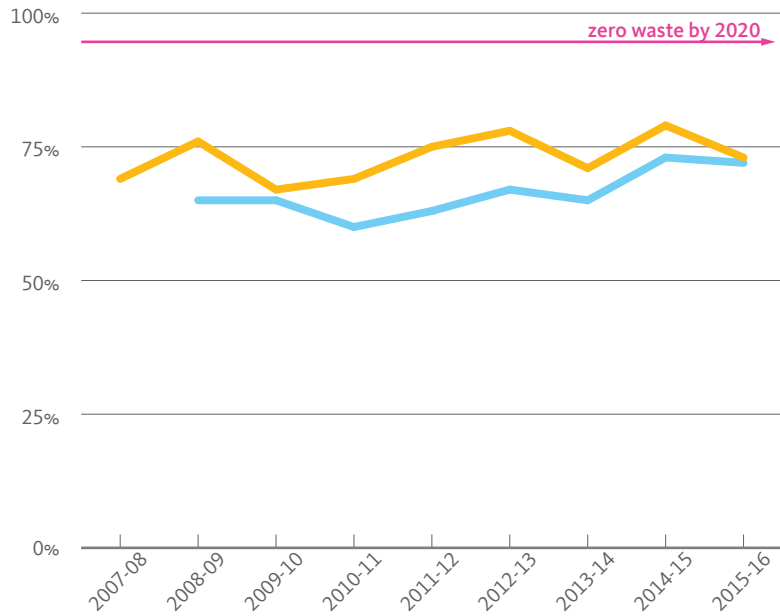
Goal:

Reduce growth-adjusted potable water consumption 20% by 2020 and 36% by 2025, when compared to a three-year average baseline of FY 2005-06, FY 2006-07, and FY 2007-08.

Progress:

In FY 2015-16, UC Davis consumed 12,850 gallons of potable water per capita. This is a 36% reduction from baseline. The campus has outperformed the 2020 policy goal and achieved the 2025 policy goal early.

SOLID WASTE DIVERTED FROM LANDFILL



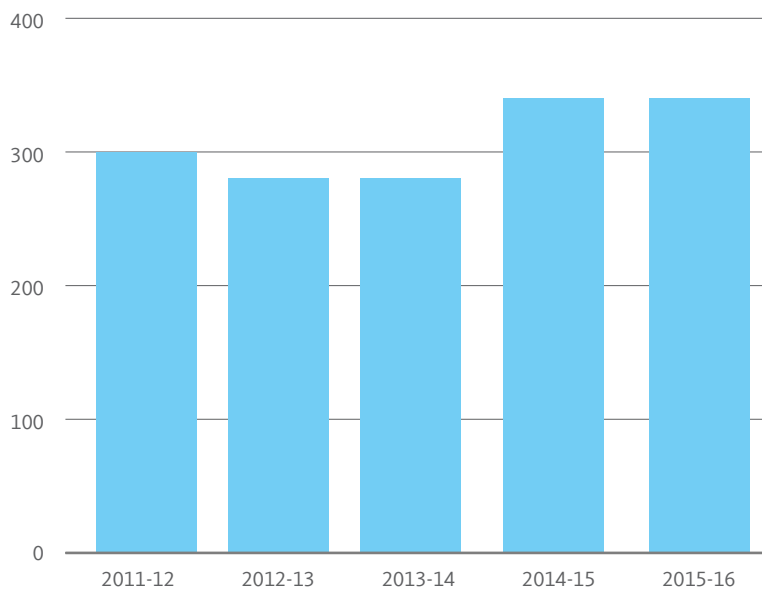
- With construction and demolition
- Without construction and demolition

Goal:
Zero Waste by 2020.

Progress:
In FY 2015-16, UC Davis diverted 73% of its waste from the landfill, a decrease of 6 percentage points from FY 2014-15. When waste from construction and demolition (C&D) is not included, the amount of waste diverted from the landfill was 72% in FY 2015-16.

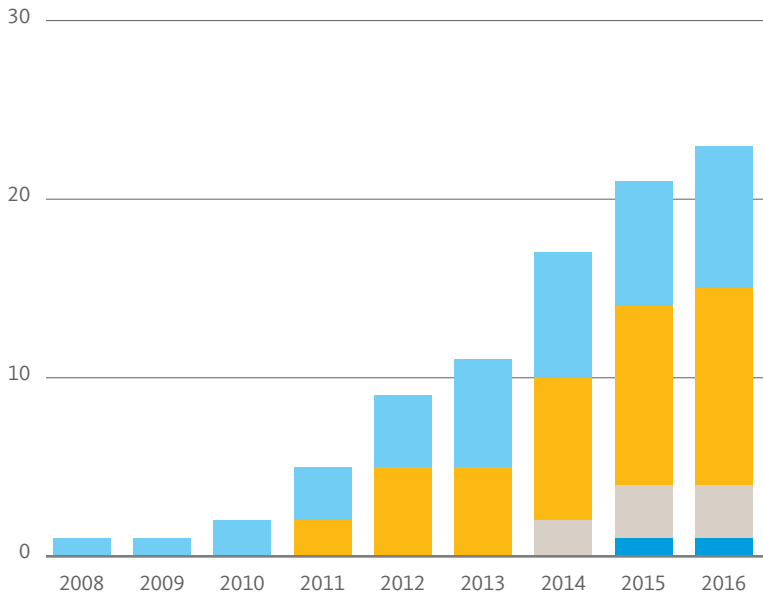
LANDFILL WASTE (NOT INCLUDING C&D)

(Pounds per capita)



Progress:
In FY 2015-16, UC Davis sent 340 pounds of solid waste per capita to the landfill, same as the previous year.

TOTAL NUMBER OF LEED CERTIFICATIONS



- Platinum
- Gold
- Silver
- Certified

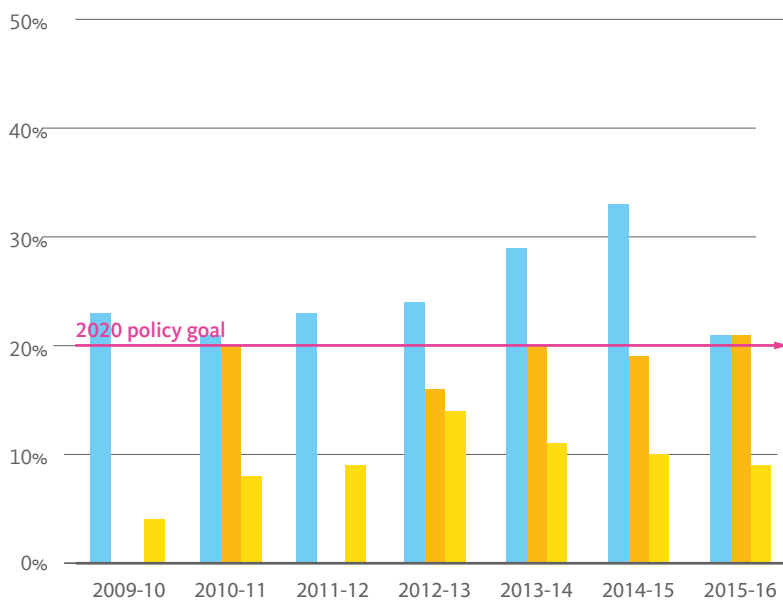
Goal:

LEED Silver certification for all new buildings and major renovations.

Progress:

In FY 2015-16, UC Davis received one additional LEED Platinum certification, contributing to its total of 22 LEED certifications.

SUSTAINABLE FOOD PURCHASES



- Residential
- Retail (CoHo)
- Retail (Sodexo)

Goal:

Procure 20% sustainable food products by the year 2020.

Progress:

In FY 2015-16, the amount of food purchased by UC Davis's residential dining services that met one or more sustainable food criteria decreased significantly to 21%. However, this still exceeds the 2020 policy goal.

UC Irvine



Over the past year, UCI continued to advance its commitment to its operational sustainability goals and to preparing the next generation of thinkers, innovators, and entrepreneurs to help the world meet its profound environmental challenges.

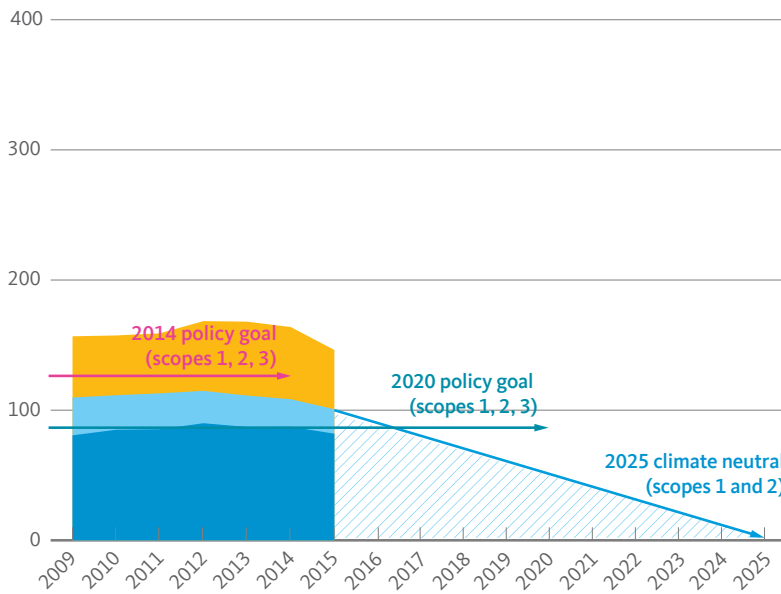
Recognized for its leadership in sustainability, Irvine was ranked among Sierra magazine's top 10 "Coolest Schools" in the nation for the seventh consecutive year. In particular, Irvine's progress towards reducing single occupancy vehicle commuting and its leadership in green buildings and energy efficiency earned the campus its third place ranking. Commute options were expanded this year with the addition of a 300 stall Bike Parking Center to the campus core. For this and other efforts, Irvine received a gold level Bicycle Friendly University designation from the League of American Bicyclists and the Clean Air Excellence Award in Transportation Efficiency from the U.S. Environmental Protection

Agency. In green buildings, Irvine received its 14th LEED for Building Design and Construction Platinum certification.

Irvine was also recognized for its student sustainability programs, receiving the Best Practice Award for Sustainability in Academics: Arts, Humanities and Social Sciences at the California Higher Education Sustainability Conference for its Student Institute for Sustainability Leadership. The program has trained 114 students, including climate and food fellows from all ten UC campuses. In addition, a successful pilot of the academic credit-based Campus as a Living Lab internship resulted in a two-fold increase of student and campus partner participation for the upcoming year.

GREENHOUSE GAS EMISSIONS

(Thousand metric tons CO₂e)



- Scope 1 (natural gas, campus fleet, fugitive)
- Scope 2 (purchased electricity)
- Scope 3 (campus commute, business air travel)

Goal:

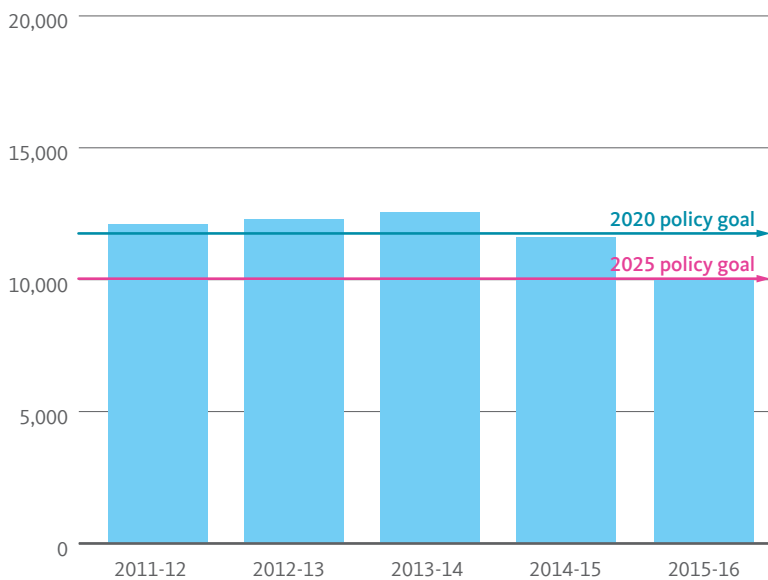
Reduce greenhouse gas emissions to year 2000 levels by 2014 and 1990 levels by 2020. Achieve climate neutrality for scope 1 and 2 sources by 2025.

Progress:

In 2015, UC Irvine's GHG emissions totaled 146,249 metric tons, down 11% from the previous year due to reductions across all three scopes. Scope 3 emissions were reduced due to the use of more accurate survey data while scope 2 emissions decreased due to a new 3.1 megawatt solar array coming online.

POTABLE WATER CONSUMPTION

(Gallons per capita)



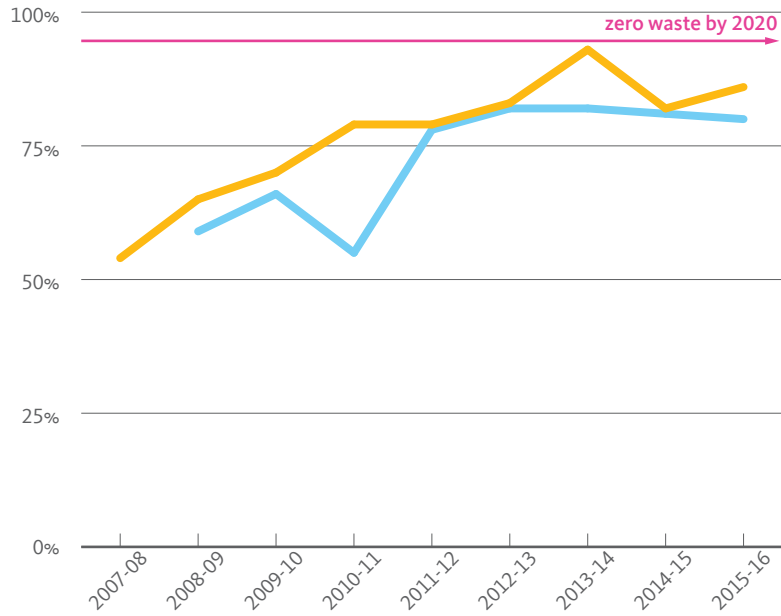
Goal:

Reduce growth-adjusted potable water consumption 20% by 2020 and 36% by 2025, when compared to a three-year average baseline of FY 2005-06, FY 2006-07, and FY 2007-08.

Progress:

In FY 2015-16, UC Irvine consumed 10,014 gallons of potable water per capita. This is a 37% reduction from baseline. The campus has outperformed the 2020 and 2025 policy goals.

SOLID WASTE DIVERTED FROM LANDFILL



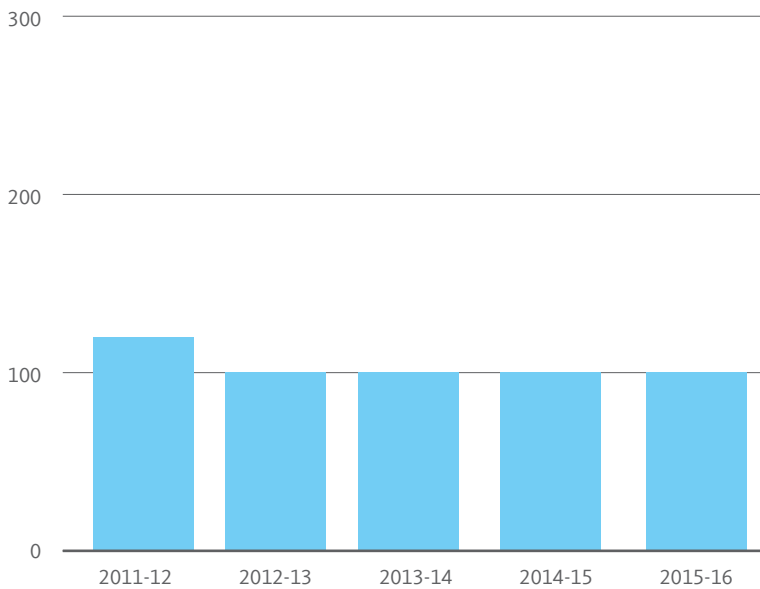
- With construction and demolition
- Without construction and demolition

Goal:
Zero Waste by 2020.

Progress:
In FY 2015-16, UC Irvine diverted 86% of its waste from the landfill, an increase of 4 percentage points from FY 2014-15. When waste from construction and demolition (C&D) is not included, the amount of waste diverted from the landfill was 80% in FY 2015-16.

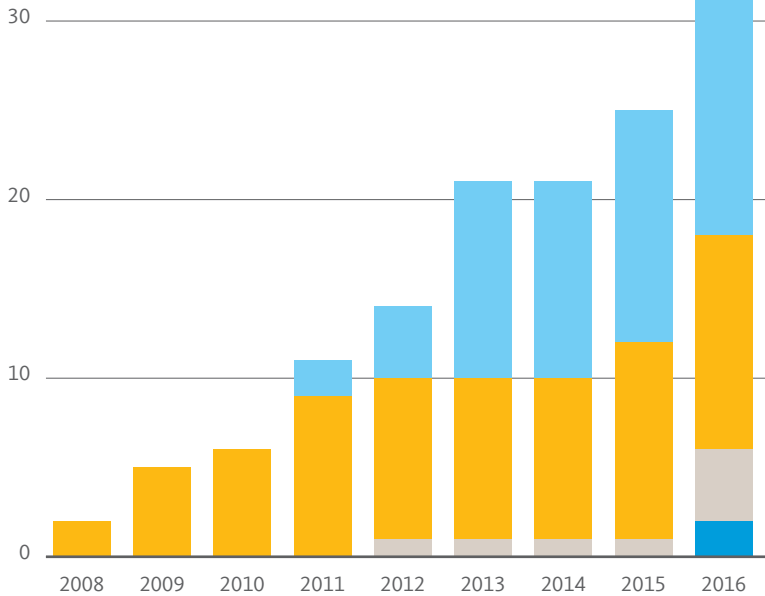
LANDFILL WASTE (NOT INCLUDING C&D)

(Pounds per capita)



Progress:
In FY 2015-16, UC Irvine sent 100 pounds of solid waste per capita to the landfill, same as the previous year.

TOTAL NUMBER OF LEED CERTIFICATIONS



- Platinum
- Gold
- Silver
- Certified

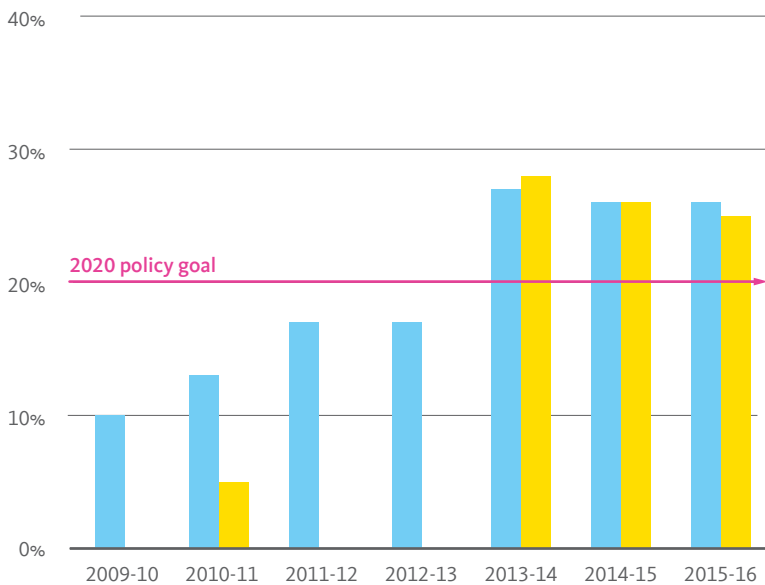
Goal:

LEED Silver certification for all new buildings and major renovations.

Progress:

In FY 2015-16, UC Irvine received one additional LEED Platinum certification, one Gold, three Silver and two Certified projects, contributing to its total of 32 LEED certifications.

SUSTAINABLE FOOD PURCHASES



- Residential
- Retail

Goal:

Procure 20% sustainable food products by the year 2020.

Progress:

In FY 2015-16, the amount of food purchased by UC Irvine's residential dining services that met one or more sustainable food criteria stayed consistent at 26%. UC Irvine's residential dining services continues to exceed the 2020 policy goal.

UCLA



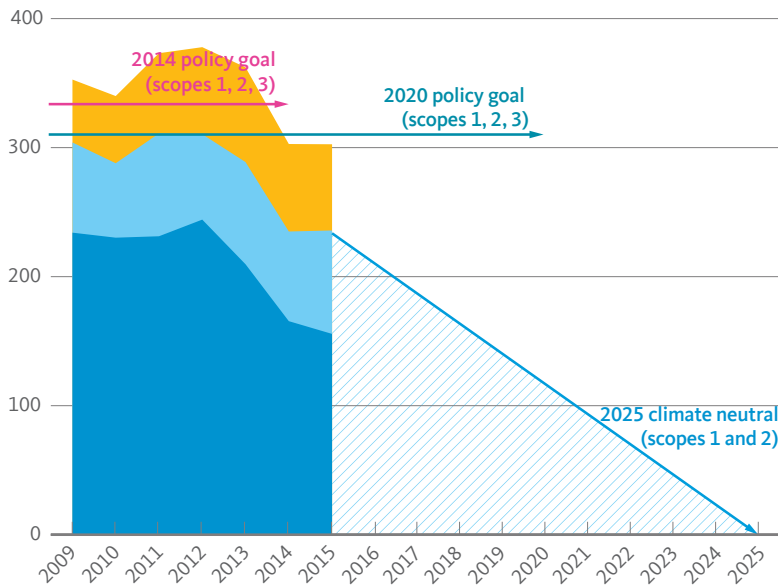
In 2015, UCLA's Sustainable LA Grand Challenge, an ambitious research project connecting hundreds of faculty, students and community members released a five-year work plan detailing over 100 research recommendations critical to creating a Sustainable LA Implementation Plan for Los Angeles County by 2020. The plan will specify how to transition the county to 100 percent renewable energy, 100 percent locally sourced water, and enhanced ecosystem health by 2050.

The campus continued to collaborate on campus operations and planning including working with the Mayor's office on strategy for climate resilience. In partnership with the City of Los Angeles, UCLA certified 21 additional offices under the Green Business Certification program, bringing the campus total to 45. UCLA was recognized by the LA Department of Water and Power as first in Energy Efficiency and third in Water Efficiency in their inaugural citywide sustainability awards.

The campus reached 30 LEED certifications in 2015, including six new Platinum certifications. A number of these building projects were recognized with awards including Best Design Project from the LA Business Council. UCLA continued collaboration between the Healthy Campus Initiative, Global Food Initiative, and sustainability programs on campus, taking an integrated approach to the built environment, food systems, and active transportation. The campus increased overall sustainable food procurement to 18.4 percent and achieved the designation of Fair Trade University, becoming the largest Fair Trade University in the nation. Increased support for active transportation on campus garnered the university a Silver Bike Friendly University designation by the League of American Bicyclists.

GREENHOUSE GAS EMISSIONS

(Thousand metric tons CO₂e)



- Scope 1 (natural gas, campus fleet, fugitive)
- Scope 2 (purchased electricity)
- Scope 3 (campus commute, business air travel)

Goal:

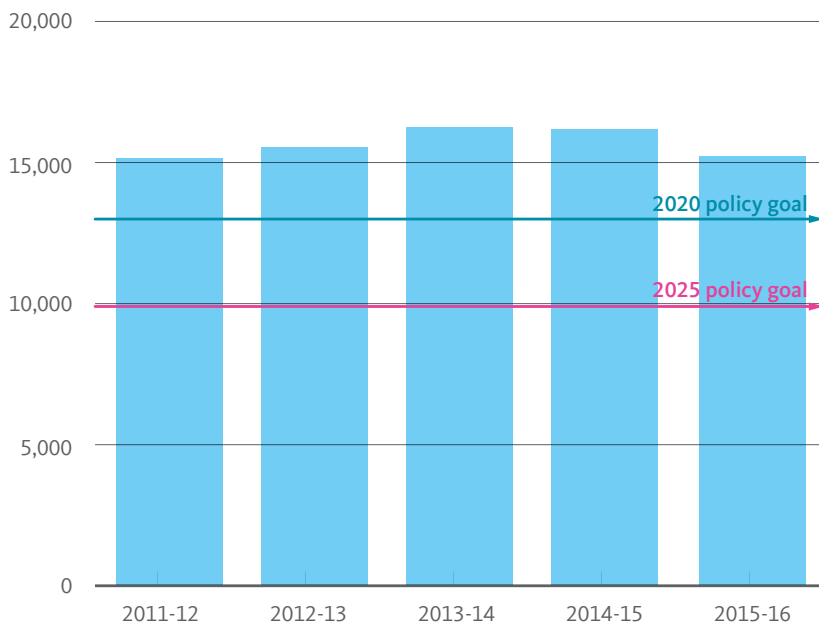
Reduce greenhouse gas emissions to year 2000 levels by 2014 and 1990 levels by 2020. Achieve climate neutrality for scope 1 and 2 sources by 2025.

Progress:

UCLA has achieved the 2014 and 2020 policy goals of reducing greenhouse gas emissions to 2000 and 1990 levels, respectively. In 2015, UCLA's GHG emissions totaled 304,407 metric tons, roughly the same as the previous year.

POTABLE WATER CONSUMPTION

(Gallons per capita)



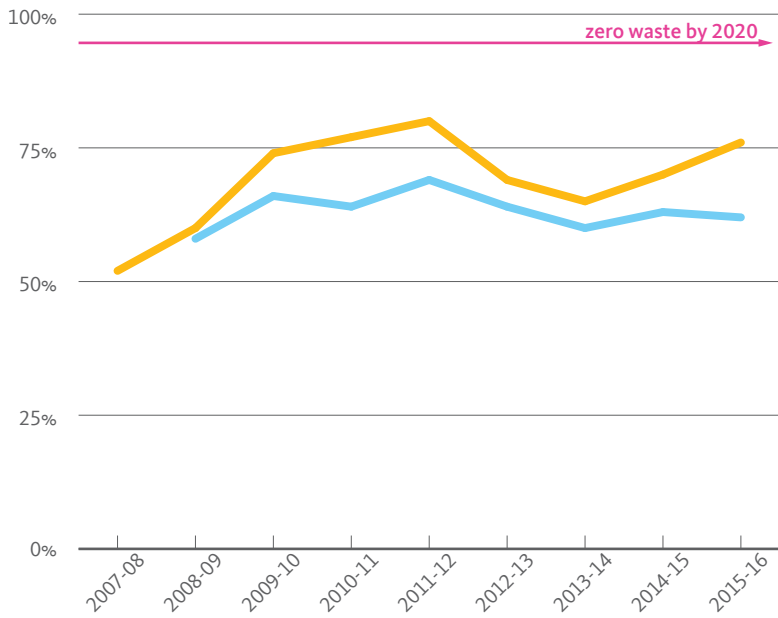
Goal:

Reduce growth-adjusted potable water consumption 20% by 2020 and 36% by 2025, when compared to a three-year average baseline of FY 2005-06, FY 2006-07, and FY 2007-08.

Progress:

In FY 2015-16, UCLA consumed 15,213 gallons of potable water per capita. This is a 2% reduction from baseline.

SOLID WASTE DIVERTED FROM LANDFILL



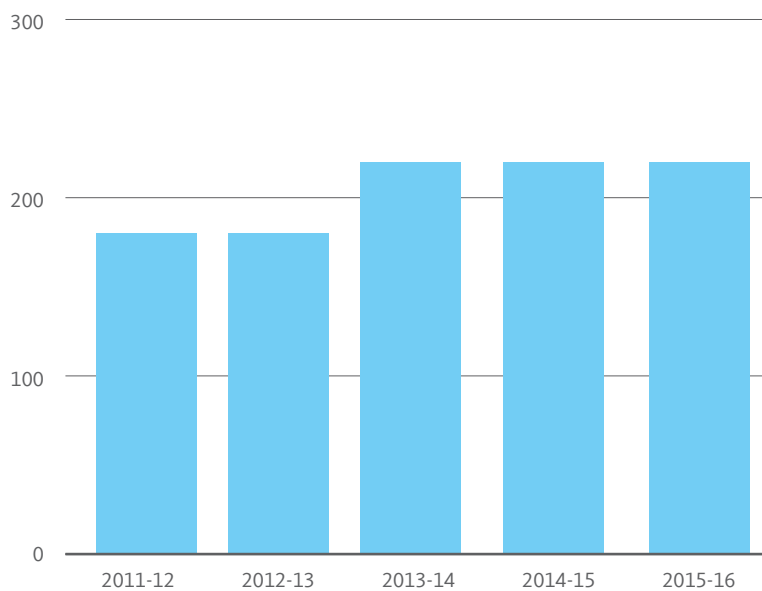
- With construction and demolition
- Without construction and demolition

Goal:
Zero Waste by 2020.

Progress:
In FY 2015-16, UCLA diverted 76% of its waste from the landfill, an increase of 6 percentage points from FY 2014-15. When waste from construction and demolition (C&D) is not included, the amount of waste diverted from the landfill was 62% in FY 2015-16.

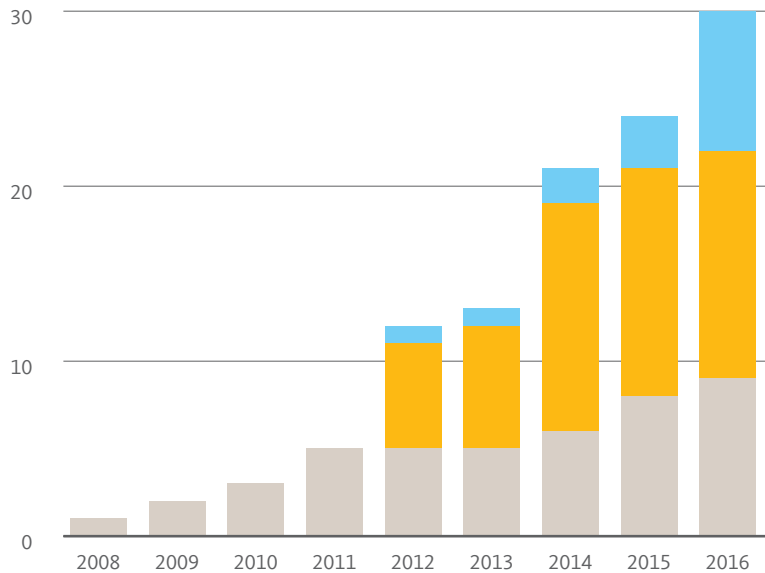
LANDFILL WASTE (NOT INCLUDING C&D)

(Pounds per capita)



Progress:
In FY 2015-16, UCLA sent 220 pounds of solid waste per capita to the landfill, same as the previous year.

TOTAL NUMBER OF LEED CERTIFICATIONS



- Platinum
- Gold
- Silver
- Certified

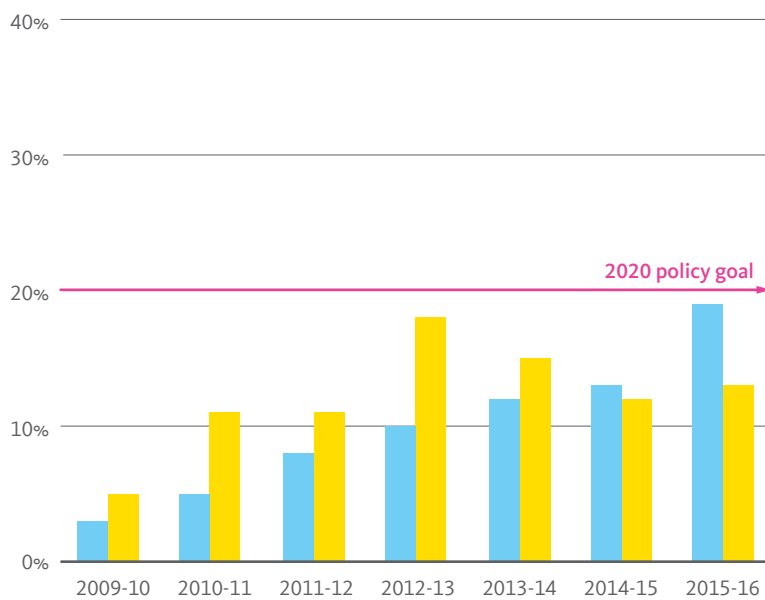
Goal:

LEED Silver certification for all new buildings and major renovations.

Progress:

In 2015-16, UCLA received six more LEED Platinum certifications and one Silver, contributing to its total of 30 LEED certifications.

SUSTAINABLE FOOD PURCHASES



- Residential
- Retail

Goal:

Procure 20% sustainable food products by the year 2020.

Progress:

In FY 2015-16, the amount of food purchased by UCLA's residential dining services that met one or more sustainable food criteria increased to 19%.

UC Merced

Over the past year, UC Merced has received numerous accolades for its sustainability achievements including being a Second Nature [2015 Climate Leadership Awards Finalist](#), achieving an [AASHE STARS Gold Rating](#), earning recognition from the USGBC Central California for [Owner with Most LEED Buildings Award](#) and earning a [National Science Foundation Faculty Early Career Development \(CAREER\) Award](#). Campus faculty have continued in their cutting-edge sustainability research, [using historical data to predict climate change](#) and [managing the water-energy nexus](#).

UC Merced was selected to participate in Energize Colleges, a program designed for student energy career development through internships and education. Student engagement with sustainability was furthered through several events and programs, including the annual [Earth Day Festival](#), the first annual [EcoFest](#) and a new student-focused EcoRep program.

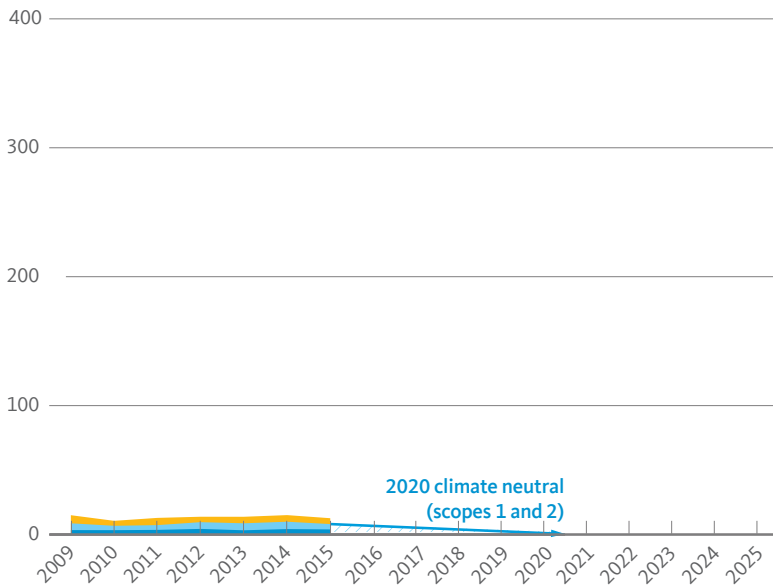
For their achievements, UC Merced students were chosen to represent the university at the [Clinton Global Initiative University](#) and met the [first family as part of the Yosemite Leadership Program](#).

Facilities Management developed a [water watch webpage and dashboard](#) and [installed a hydrogel system](#) to reduce landscaping water use. Dining Services installed a water bottle refill station in the Dining Center and saved \$39,500 as a result of waste diverted through usage of the OZZI reusable container program. The Transportation Department launched car sharing on campus with an initial three vehicle fleet to provide additional alternative transportation options. Over the past year, a total of 17 percent of campus purchases were from disadvantaged businesses, social enterprises and/or local community-based businesses.



GREENHOUSE GAS EMISSIONS

(Thousand metric tons CO₂e)



- Scope 1 (natural gas, campus fleet, fugitive)
- Scope 2 (purchased electricity)
- Scope 3 (campus commute, business air travel)

Goal:

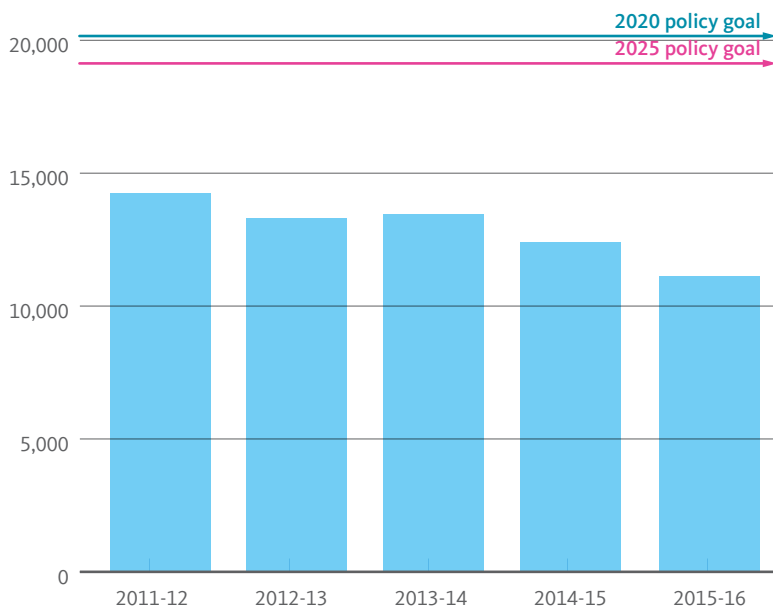
As UC's newest campus, UC Merced has set a more aggressive goal to achieve climate neutrality for scope 1 and 2 sources by 2020.

Progress:

In 2015, UC Merced's GHG emissions totaled 12,657 metric tons, down 16% by the previous year, primarily due to a decrease in scope 2 emissions by using the PG&E emission factor instead of the California grid average as had been done in previous years.

POTABLE WATER CONSUMPTION

(Gallons per capita)



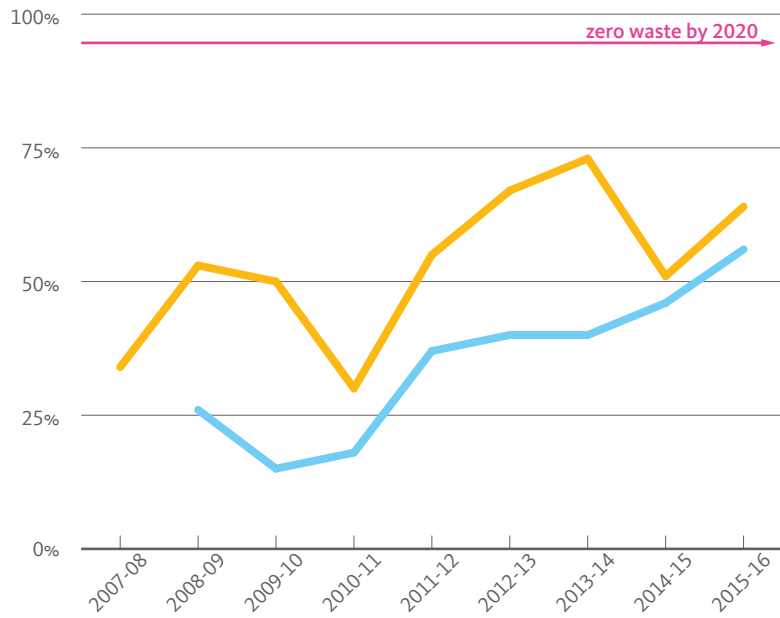
Goal:

Reduce growth-adjusted potable water consumption 20% by 2020 and 36% by 2025, when compared to a three-year average baseline of FY 2005-06, FY 2006-07, and FY 2007-08.

Progress:

In FY 2015-16, UC Merced consumed 11,119 gallons of potable water per capita. This is a 63% reduction from baseline. The campus has outperformed the 2020 and 2025 Policy goals.

SOLID WASTE DIVERTED FROM LANDFILL



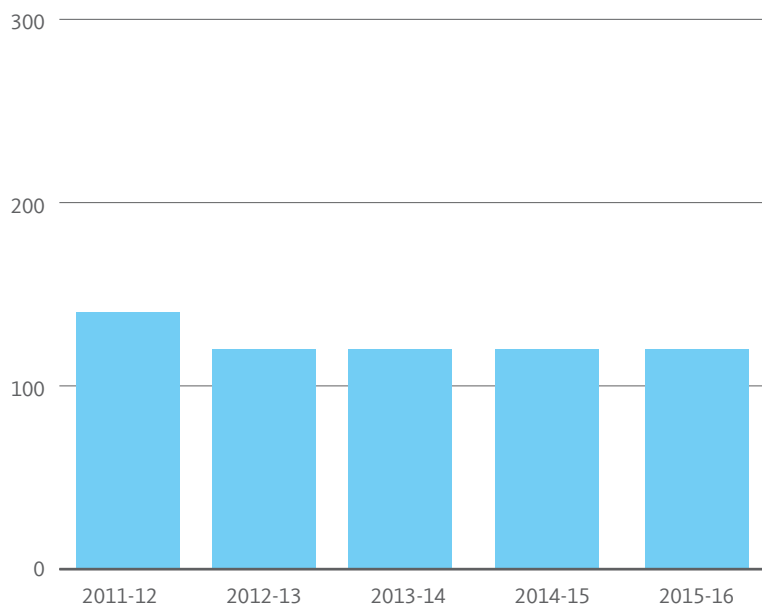
- With construction and demolition
- Without construction and demolition

Goal:
Zero Waste by 2020.

Progress:
In FY 2015-16, UC Merced diverted 64% of its waste from the landfill, an increase of 13 percentage points from FY 2014-15. When waste from construction and demolition (C&D) is not included, the amount of waste diverted from the landfill was 56% in FY 2015-16.

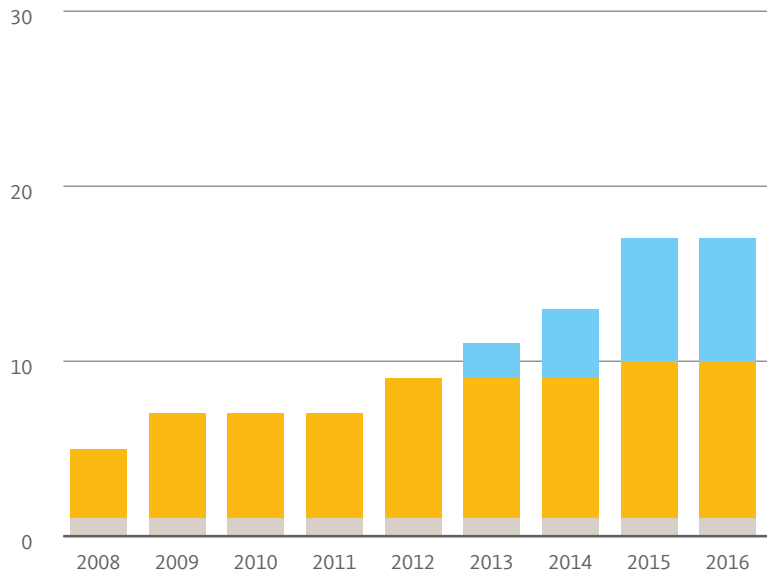
LANDFILL WASTE (NOT INCLUDING C&D)

(Pounds per capita)



Progress:
In FY 2015-16, UC Merced sent 120 pounds of solid waste per capita to the landfill, which is the same as the last three years.

TOTAL NUMBER OF LEED CERTIFICATIONS



- Platinum
- Gold
- Silver
- Certified

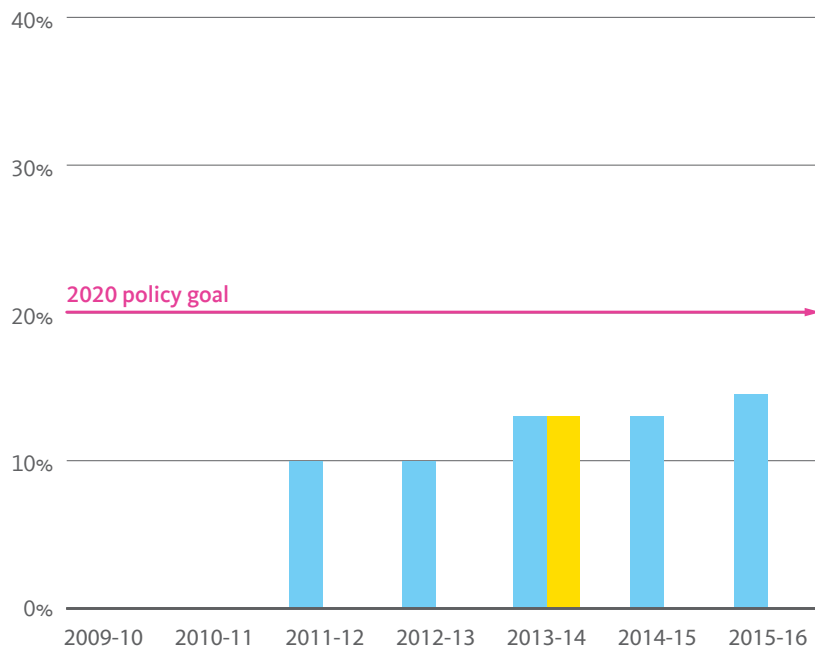
Goal:

LEED Silver certification for all new buildings and major renovations.

Progress:

In 2015-16, UC Merced received no new LEED certifications, maintaining its total of 17 LEED certifications. UC Merced is the only campus in the country where every building is LEED-certified.

SUSTAINABLE FOOD PURCHASES



- Residential
- Retail

Goal:

Procure 20% sustainable food products by the year 2020.

Progress:

UC Merced residential dining services increased procurement of sustainable food products to 14.5% in 2015-16.

UC Riverside



Over the past year, UC Riverside has made great strides in sustainability. The campus continues to improve its ranking on the 2016 Sierra “Cool Schools” list and earned its first STARS Gold rating from the Association for the Advancement of Sustainability in Higher Education. UC Riverside graduate students won a Best Practice Award at the California Higher Education Sustainability Conference for creating a new Graduate Sustainability Liaison position within the Graduate Students Association (GSA). As part of the GSA Executive Council, this position is responsible for the recruitment of eco-ambassadors and organization of a graduate student sustainability committee across campus.

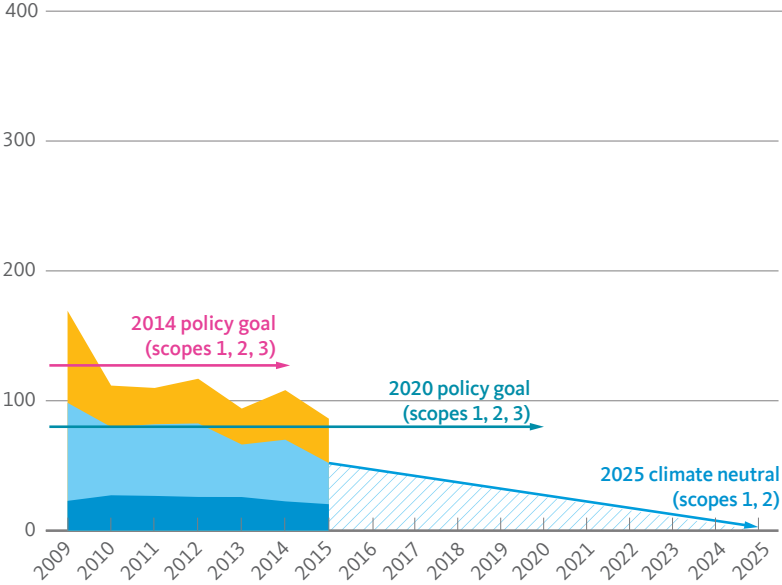
UC Riverside continues to be a pioneer in sustainable laboratories with its Green Labs Certification Program. Fifteen labs have

been certified in the last two years accompanied by robust energy, water and waste diversion efforts in a total of 29 labs. The university also increased lab efficiency through the installation of an energy and water efficient autoclave in the new Environmental Health and Safety building that consumes 90 percent less water and 80 percent less energy than a traditional unit.

UC Riverside has published an interactive [Sustainability Story Book](#) to showcase its sustainability achievements. The virtual tour displays campus sustainability landmarks, including LEED-certified buildings, the 3.5 MW solar farm and the highly acclaimed Living Laboratory Community Garden, R’Garden.

GREENHOUSE GAS EMISSIONS

(Thousand metric tons CO₂e)



- Scope 1 (natural gas, campus fleet, fugitive)
- Scope 2 (purchased electricity)
- Scope 3 (campus commute, business air travel)

Goal:

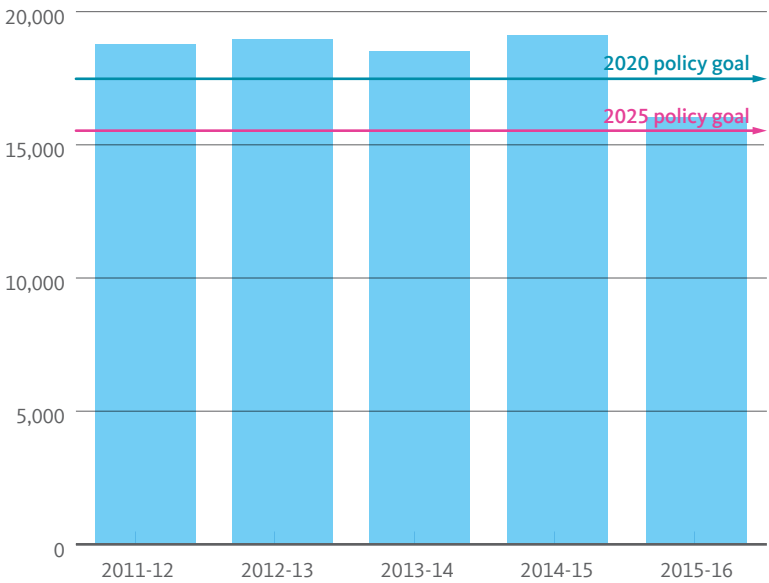
Reduce greenhouse gas emissions to year 2000 levels by 2014 and 1990 levels by 2020. Achieve climate neutrality for scope 1 and 2 sources by 2025.

Progress:

UC Riverside has achieved the 2014 policy goal. In 2015, UC Riverside's GHG emissions totaled 86,224 metric tons, down 20% from the previous year, due to the supplying utility providing lower-carbon electricity.

POTABLE WATER CONSUMPTION

(Gallons per capita)



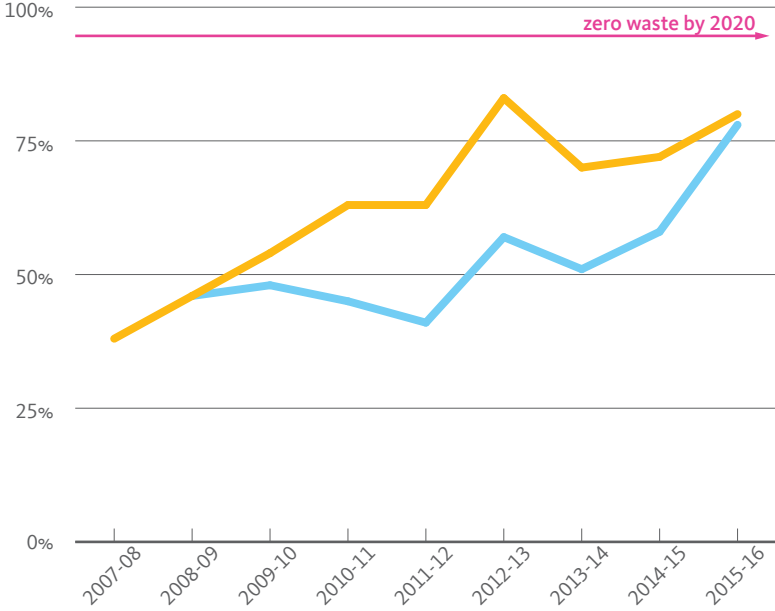
Goal:

Reduce growth-adjusted potable water consumption 20% by 2020 and 36% by 2025, when compared to a three-year average baseline of FY 2005-06, FY 2006-07, and FY 2007-08.

Progress:

In FY 2015-16, UC Riverside consumed 16,043 gallons of potable water per capita. This is a 34% reduction from baseline. The campus has outperformed the 2020 policy goal and is on track to meet the 2025 goal.

SOLID WASTE DIVERTED FROM LANDFILL



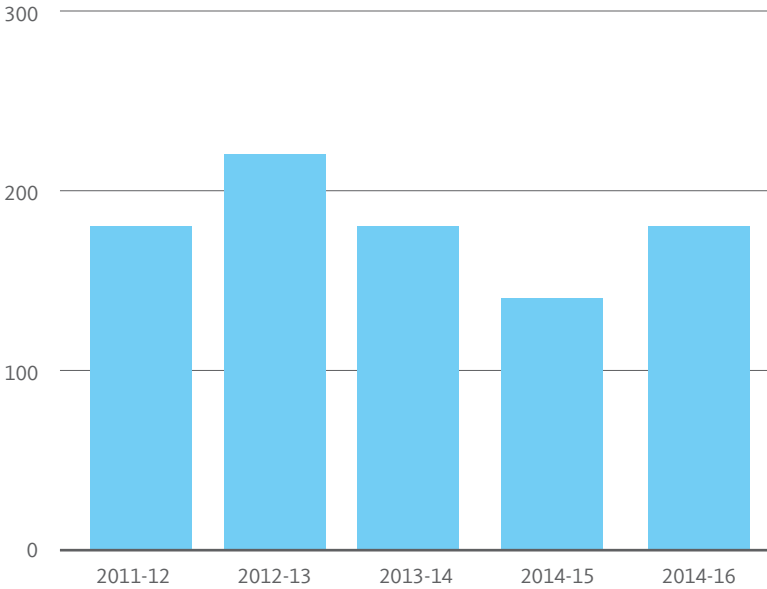
- With construction and demolition
- Without construction and demolition

Goal:
Zero Waste by 2020.

Progress:
In FY 2015-16, UC Riverside diverted 80% of its waste from the landfill, an increase of 8 percentage points from FY 2014-15. When waste from construction and demolition (C&D) is not included, the amount of waste diverted from the landfill was 78% in FY 2015-16.

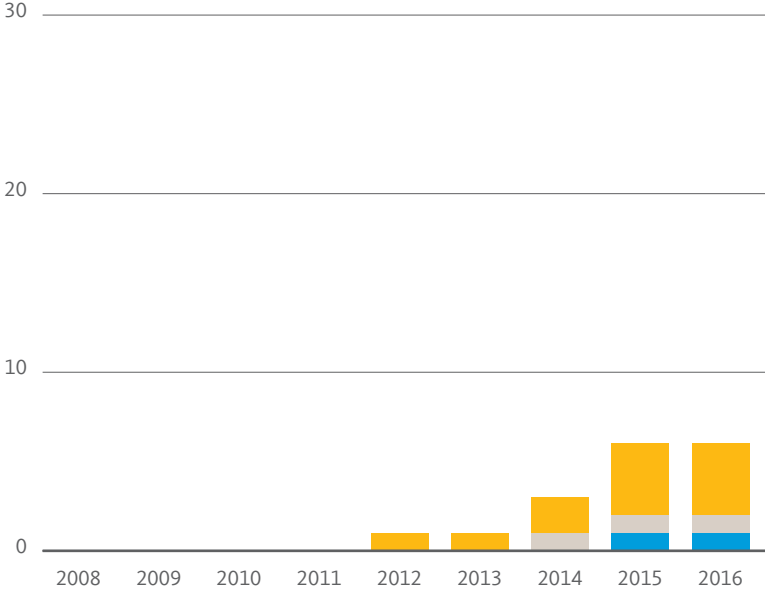
LANDFILL WASTE (NOT INCLUDING C&D)

(Pounds per capita)



Progress:
In FY 2015-16, UC Riverside sent 180 pounds of solid waste per capita to the landfill, 40 pounds per capita more than the prior year.

TOTAL NUMBER OF LEED CERTIFICATIONS

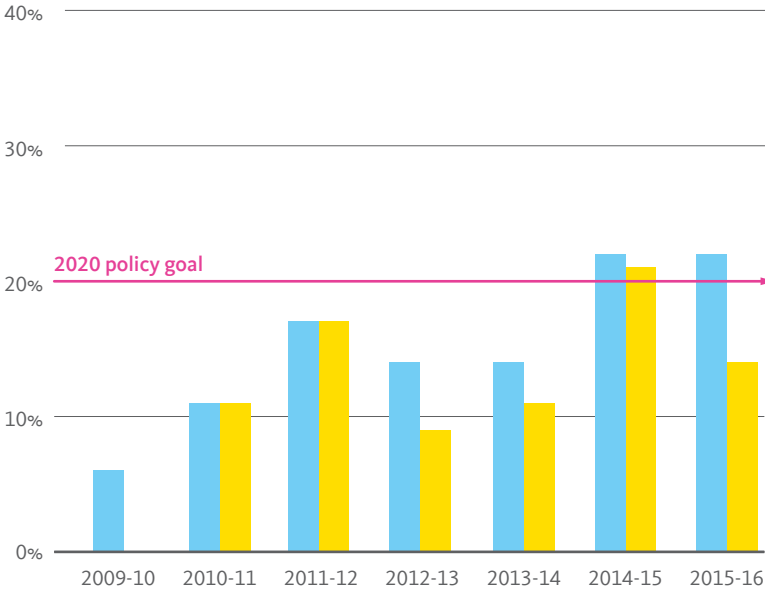


- Platinum
- Gold
- Silver
- Certified

Goal:
LEED Silver certification for all new buildings and major renovations.

Progress:
In FY 2015-16, UC Riverside received no new LEED certifications, maintaining its total of six LEED certifications.

SUSTAINABLE FOOD PURCHASES



- Residential
- Retail

Goal:
Procure 20% sustainable food products by the year 2020.

Progress:
In FY 2015-16, the amount of food purchased by UC Riverside's residential dining services that met one or more sustainable food criteria remained at 22%. UC Riverside's residential dining services continues to exceed the 2020 policy goal of 20% sustainable food purchases.

UC San Diego



Over the past year, UC San Diego has served as a leader in higher education sustainability, hosting the systemwide [UC Pathways to Carbon and Climate Neutrality Summit](#), which featured California Governor Jerry Brown and the report [Bending the Curve: Ten Scalable Solutions for Carbon Neutrality and Climate Stability](#). The university received commendation as the [2016 Energy Champion of Higher Education](#) at San Diego Gas & Electric's annual Energy Showcase. UC San Diego became a founding member of the White House's [MetroLab Network](#) to research, develop and deploy innovative technologies to address pressing sustainability challenges like climate change.

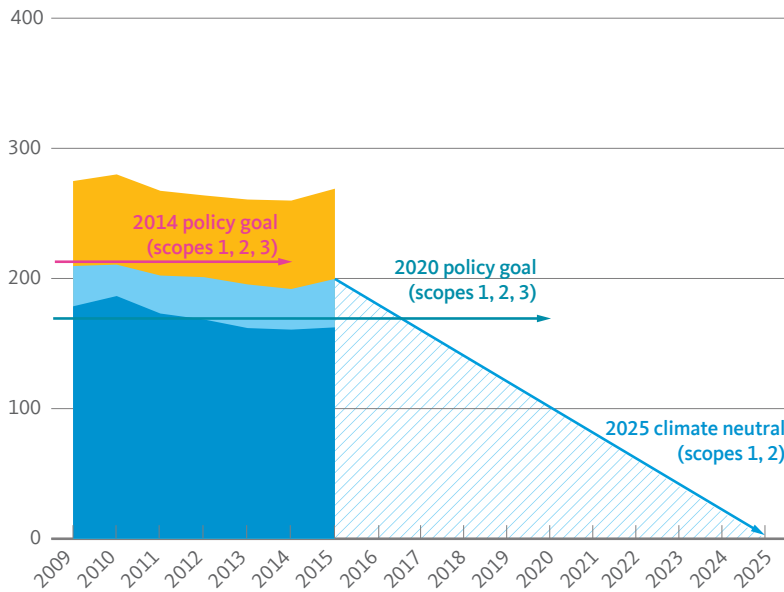
Chancellor Pradeep Khosla shared the university's strong commitment to sustainability in his [Fall 2016 Welcome Letter](#), asserting that "as our student population continues to grow...it is vital that we evaluate and evolve our campus infrastructure.

We will accomplish this while also adhering to the University of California systemwide goal of carbon neutrality by 2025. To achieve our target, we will need the participation of all members of the campus community."

UC San Diego has also made significant strides on campus, with a total of 27 LEED-certified buildings, including the new LEED Platinum [Health Sciences Biomedical Research Facility 2](#). Over the past year, UC San Diego has achieved the 2020 policy goal of 20 percent potable water use reduction through the adoption of reclaimed water use at its central utilities plants. Construction began in October 2016 on three light rail stations that will connect with over 300 planned or installed electric vehicle charging stations.

GREENHOUSE GAS EMISSIONS

(Thousand metric tons CO₂e)



- Scope 1 (natural gas, campus fleet, fugitive)
- Scope 2 (purchased electricity)
- Scope 3 (campus commute, business air travel)

Goal:

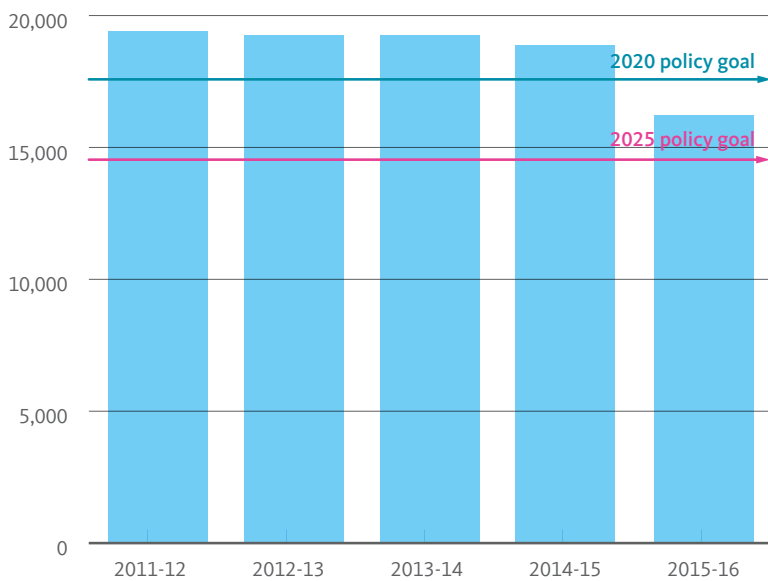
Reduce greenhouse gas emissions to year 2000 levels by 2014 and 1990 levels by 2020. Achieve climate neutrality for scope 1 and 2 sources by 2025.

Progress:

In 2015, UC San Diego's GHG emissions totaled 268,998 metric tons, up 3% from the previous year, primarily due to increases in scope 2 emissions.

POTABLE WATER CONSUMPTION

(Gallons per capita)



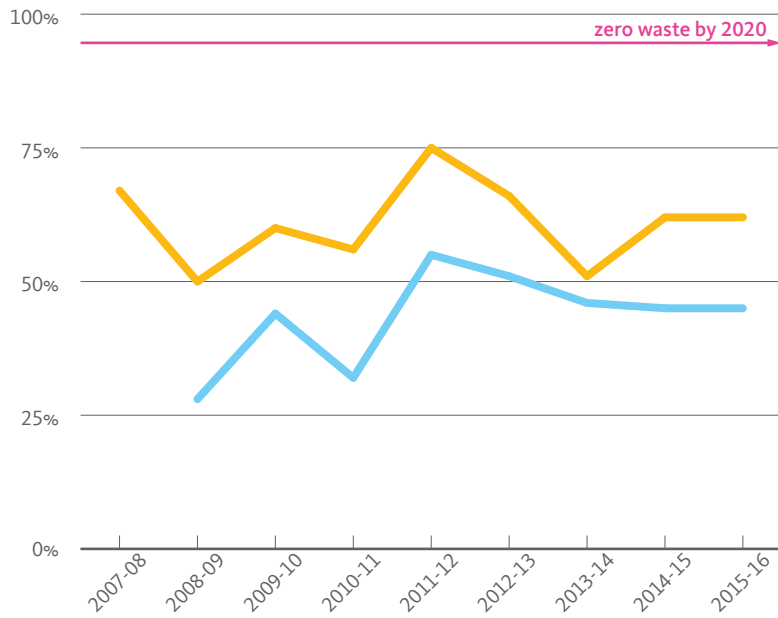
Goal:

Reduce growth-adjusted potable water consumption 20% by 2020 and 36% by 2025, when compared to a three-year average baseline of FY 2005-06, FY 2006-07, and FY 2007-08.

Progress:

In FY 2015-16, UC San Diego consumed 16,213 gallons of potable water per capita. This is a 29% reduction from baseline. The campus has outperformed the 2020 policy goal.

SOLID WASTE DIVERTED FROM LANDFILL



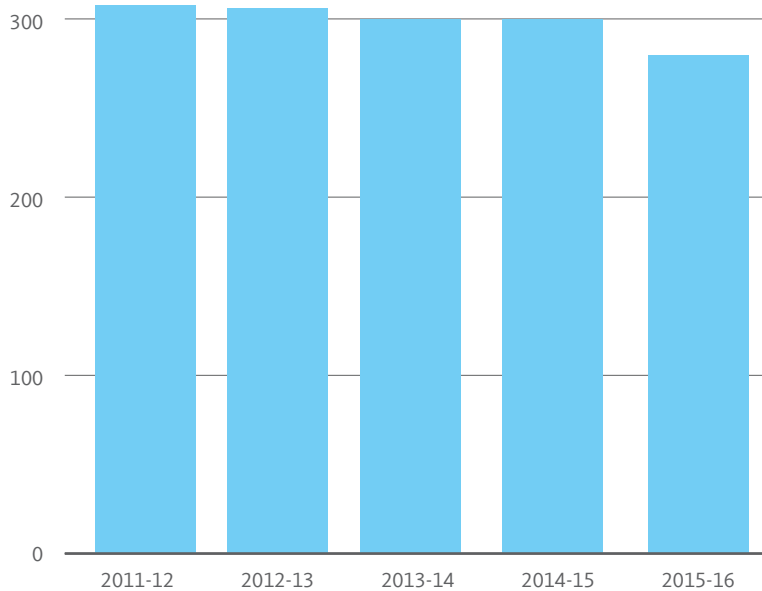
- With construction and demolition
- Without construction and demolition

Goal:
Zero Waste by 2020.

Progress:
In FY 2015-16, UC San Diego diverted 62% of its waste from the landfill, the same as in FY 2014-15. When waste from construction and demolition (C&D) is not included, the amount of waste diverted from the landfill was 45% in FY 2015-16.

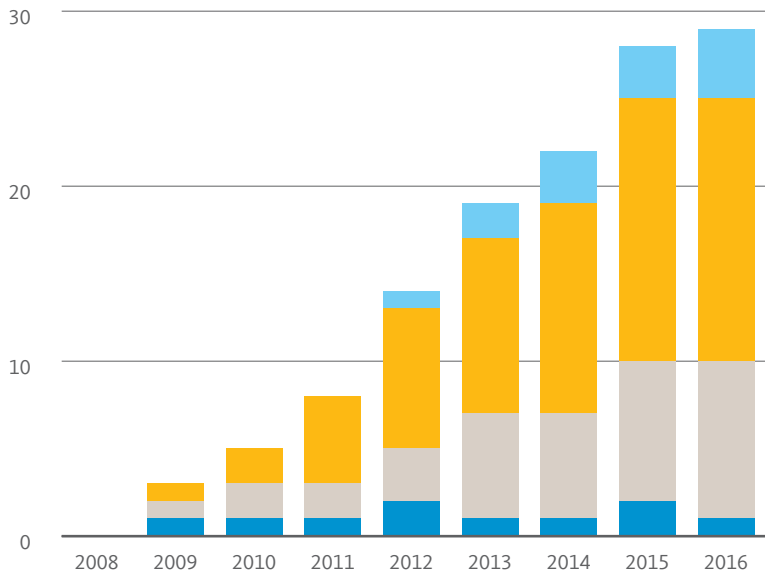
LANDFILL WASTE (NOT INCLUDING C&D)

(Pounds per capita)



Progress:
In FY 2015-16, UC San Diego sent 280 pounds of solid waste per capita to the landfill, 20 pounds per capita less than the previous year.

TOTAL NUMBER OF LEED CERTIFICATIONS



- Platinum
- Gold
- Silver
- Certified

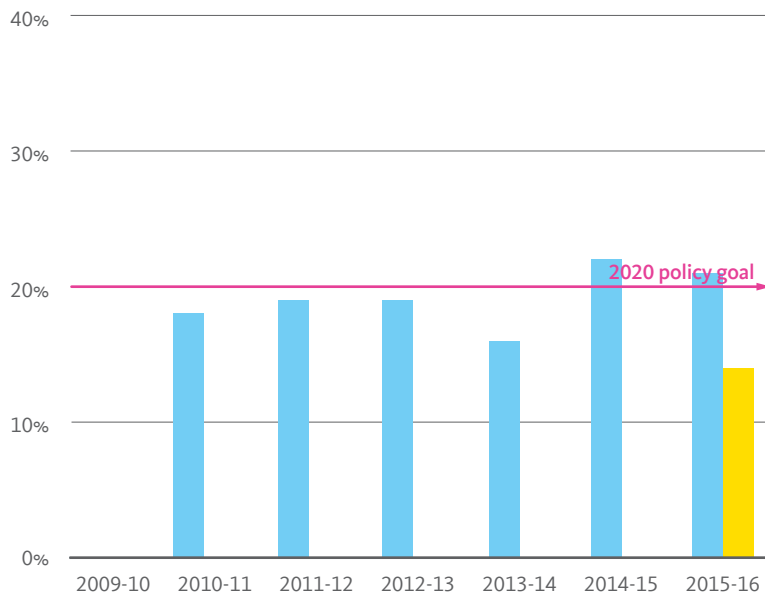
Goal:

LEED Silver certification for all new buildings and major renovations.

Progress:

In FY 2015-16, UC San Diego received one more LEED Platinum certification and one Silver, contributing to its total of 29 LEED certifications.

SUSTAINABLE FOOD PURCHASES



- Residential
- Retail

Goal:

Procure 20% sustainable food products by the year 2020.

Progress:

In FY 2015-16, the amount of food purchased by UC San Diego's residential dining services that met one or more sustainable food criteria decreased slightly to 21% while still meeting the 2020 policy goal.

UC San Francisco



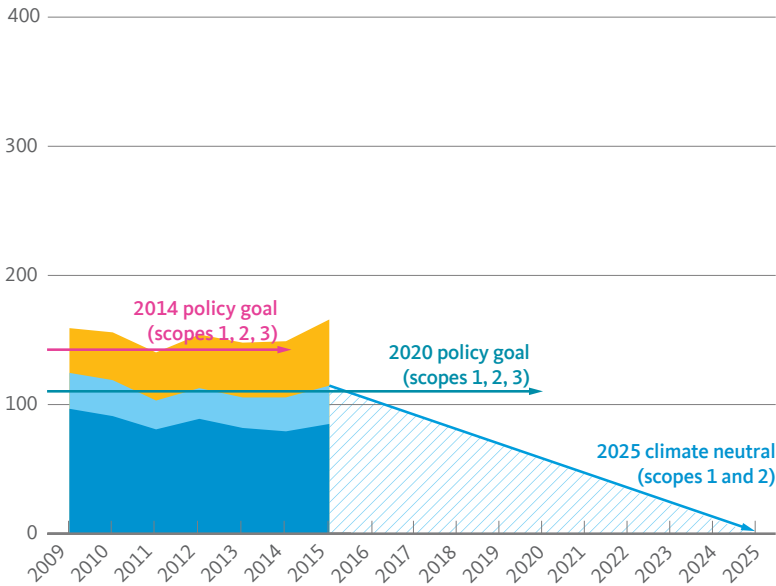
UC San Francisco received two Best Practice Awards and an honorable mention at the California Higher Education Sustainability Conference for its efforts to reduce waste, increase energy efficiency, and promote sustainable food.

In the past year, UC San Francisco's waste diversion reached 80.6 percent due to an innovative waste reduction effort. A total of 26 special waste pickup days for e-waste, bulky items, and styrofoam were held at four locations. Through a program by Bio-Link Depot, local middle and high school science classes also received university donations of unused university scientific equipment.

The campus reduced energy use by 2.2 percent through building specific efforts including five large Monitoring Based Commissioning projects, several Statewide Energy Partnership energy efficiency projects, a fume hood competition, a Smart Labs program, and the ULT Freezer Rebate Program. The campus reduced water consumption significantly to 40 percent below the baseline through various efforts including a state-of-the-art pool treatment system that cut drainage frequency in half.

GREENHOUSE GAS EMISSIONS

(Thousand metric tons CO₂e)



- Scope 1 (natural gas, campus fleet, fugitive)
- Scope 2 (purchased electricity)
- Scope 3 (campus commute, business air travel)

Goal:

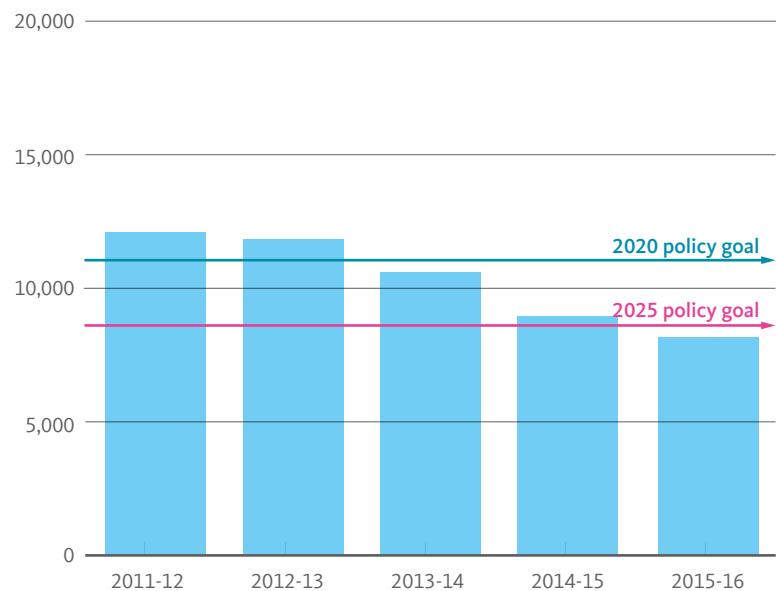
Reduce greenhouse gas emissions to year 2000 levels by 2014 and 1990 levels by 2020. Achieve climate neutrality for scope 1 and 2 sources by 2025.

Progress:

In 2015, UCSF's GHG emissions totaled 165,887 metric tons, up 10% from the previous year due to the new Mission Bay hospital buildings coming online.

POTABLE WATER CONSUMPTION

(Gallons per capita)



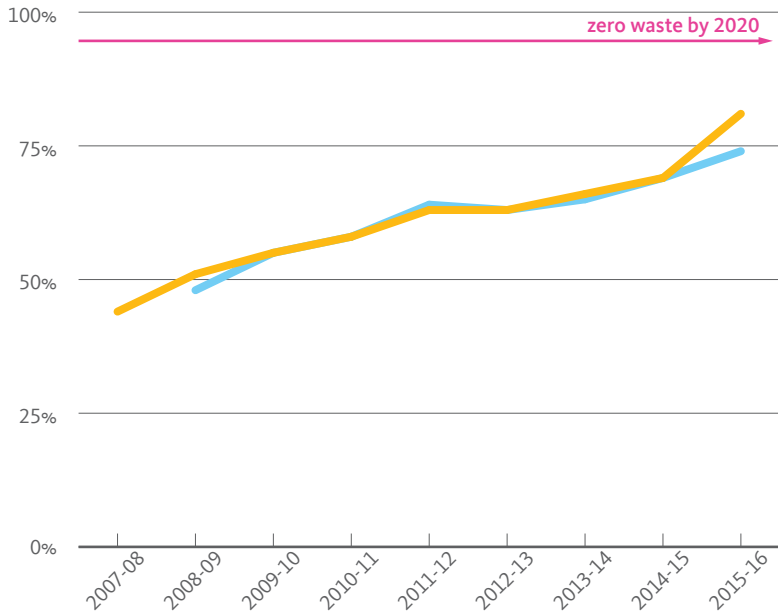
Goal:

Reduce growth-adjusted potable water consumption 20% by 2020 and 36% by 2025, when compared to a three-year average baseline of FY 2005-06, FY 2006-07, and FY 2007-08.

Progress:

In FY 2015-16, UCSF consumed 8,187 gallons of potable water per capita. This is a 40% reduction from baseline. The campus has outperformed the 2020 policy goal and achieved the 2025 policy goal of reducing potable water consumption by 20% and 36% below the baseline respectively.

SOLID WASTE DIVERTED FROM LANDFILL



- With construction and demolition
- Without construction and demolition

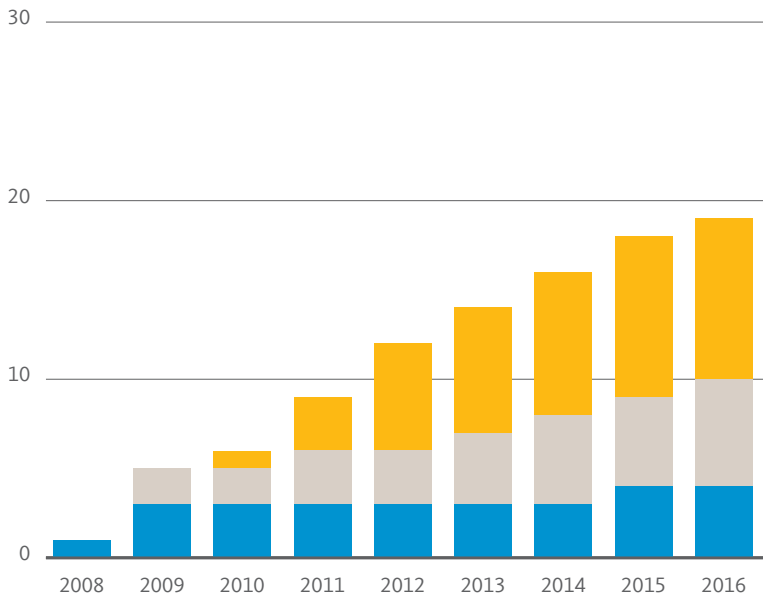
Goal:
Zero Waste by 2020.

Progress:
In FY 2015-16, UCSF diverted 81% of its waste from the landfill, an increase of 12 percentage points from FY 2014-15. When waste from construction and demolition (C&D) is not included, the amount of waste diverted from the landfill was 74% in FY 2015-16. UCSF has exceeded the 2012 Policy goal of 75% diversion and is 14% away from meeting the 2020 zero waste policy goal.

LANDFILL WASTE (NOT INCLUDING C&D)

Progress:
Waste per capita is unavailable for UCSF.

TOTAL NUMBER OF LEED CERTIFICATIONS



- Platinum
- Gold
- Silver
- Certified

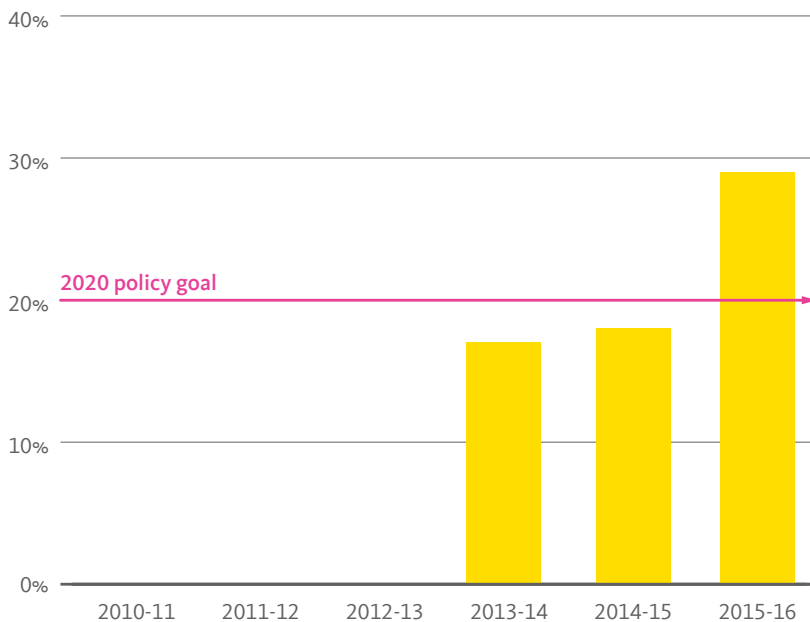
Goal:

LEED Silver certification for all new buildings and major renovations.

Progress:

In FY 2015-16, UCSF received one additional LEED Silver certification, contributing to its total of 19 LEED certifications.

SUSTAINABLE FOOD PURCHASES



- Retail

Goal:

Procure 20% sustainable food products by the year 2020.

Progress:

In FY 2015-16, the amount of food purchased by UCSF's retail foodservices that met one or more sustainable food criteria increased significantly to 29%, thereby exceeding the 2020 policy goal. UCSF does not have any residential dining halls.

UC Santa Barbara



UC Santa Barbara is committed to global leadership in sustainability through education, research and action. UC Santa Barbara won a 2016 Best Practice Award at the annual California Higher Education Sustainability Conference for its partnership with Santa Barbara Metropolitan Transit District to launch a new bus route to service campus locations as well as Isla Vista and Goleta. The League of American Bicyclists has recognized UC Santa Barbara as a Gold Level Bicycle Friendly University (BFU).

Last year, UC Santa Barbara received a LEED for Homes Platinum certification for Sierra Madre Villages. The university is the only campus in the system with any LEED for Homes certifications.

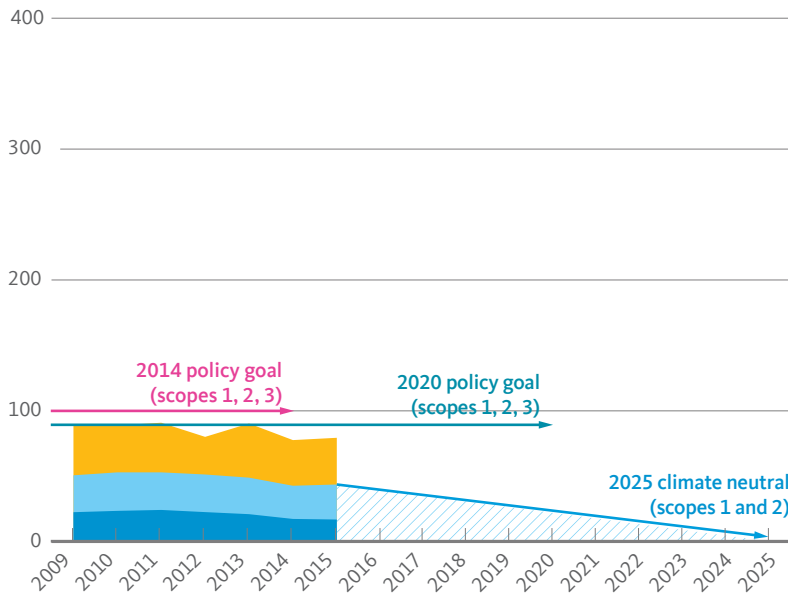
Over the past year, UC Santa Barbara broke ground on a multi-site solar photovoltaic project. In aggregate, this project will total over 5 MW of renewable energy capacity and save the campus an estimated \$270K annually in annual utility costs.

With the current state of water resources in California, UC Santa Barbara has focused significant efforts on water reductions. In addition to expanding recycled water infrastructure, the campus distributed and installed closed-loop cooling for 63 benchtop condensers in campus research laboratories, decreasing annual water usage by 1.2 percent.

Last year, UC Santa Barbara promoted healthy food and eating on campus through the launch of the Food, Nutrition and Basic Skills Program, which offered a total of 36 workshops to students. The program provides students with hands-on, “core competency,” co-curricular courses that build basic skills in budgeting and planning, cooking basics, kitchen basics and whole system mindfulness.

GREENHOUSE GAS EMISSIONS

(Thousand metric tons CO₂e)



- Scope 1 (natural gas, campus fleet, fugitive)
- Scope 2 (purchased electricity)
- Scope 3 (campus commute, business air travel)

Goal:

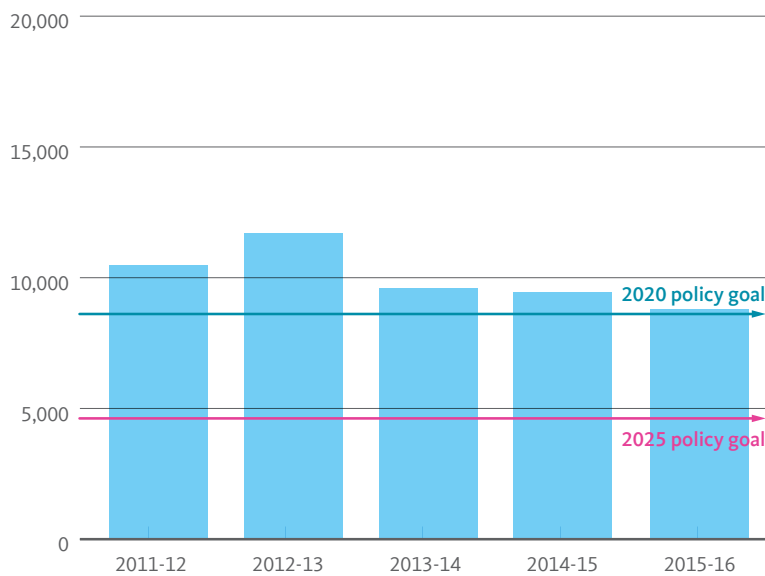
Reduce greenhouse gas emissions to year 2000 levels by 2014 and 1990 levels by 2020. Achieve climate neutrality for scope 1 and 2 sources by 2025.

Progress:

UC Santa Barbara has achieved the 2014 and 2020 policy goals. In 2015, UC Santa Barbara's GHG emissions totaled 79,421 metric tons, up 2% from the previous year, due to slight increases across all three emissions scopes.

POTABLE WATER CONSUMPTION

(Gallons per capita)



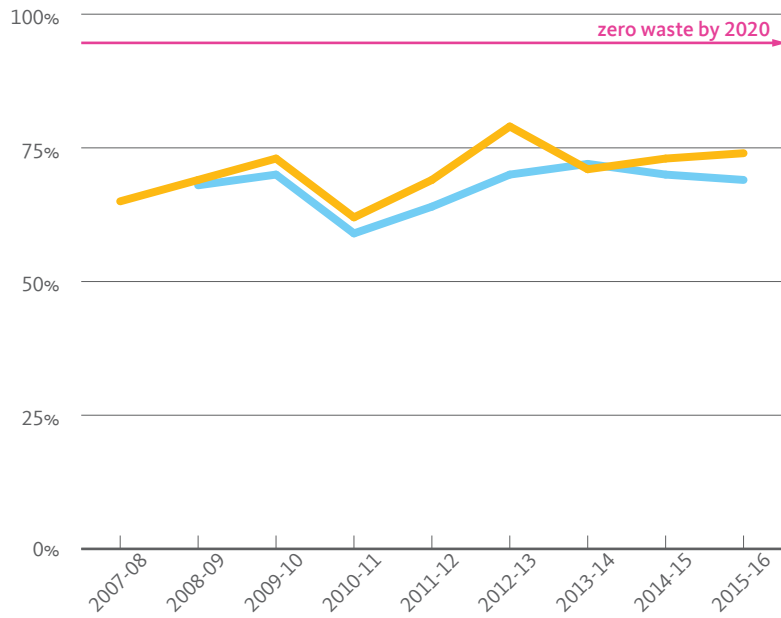
Goal:

Reduce growth-adjusted potable water consumption 20% by 2020 and 36% by 2025, when compared to a three-year average baseline of FY 2005-06, FY 2006-07, and FY 2007-08.

Progress:

In FY 2015-16, UC Santa Barbara consumed 8,797 gallons of potable water per capita, an 18% reduction from the baseline. The campus is on track to meet the 2020 policy goal.

SOLID WASTE DIVERTED FROM LANDFILL



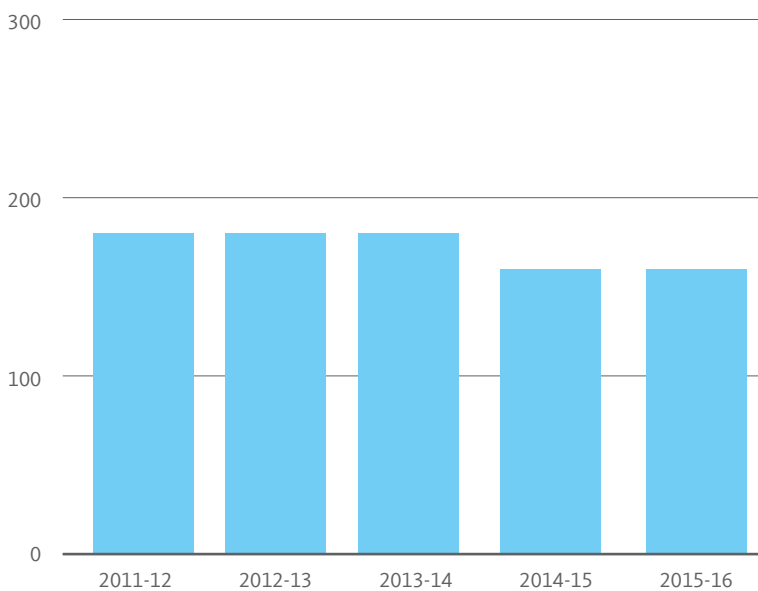
- With construction and demolition
- Without construction and demolition

Goal:
Zero Waste by 2020.

Progress:
In FY 2015-16, UC Santa Barbara diverted 74% of its waste from the landfill, an increase of 1 percentage point from FY 2014-15. When waste from construction and demolition (C&D) is not included, the amount of waste diverted from the landfill was 69% in FY 2015-16.

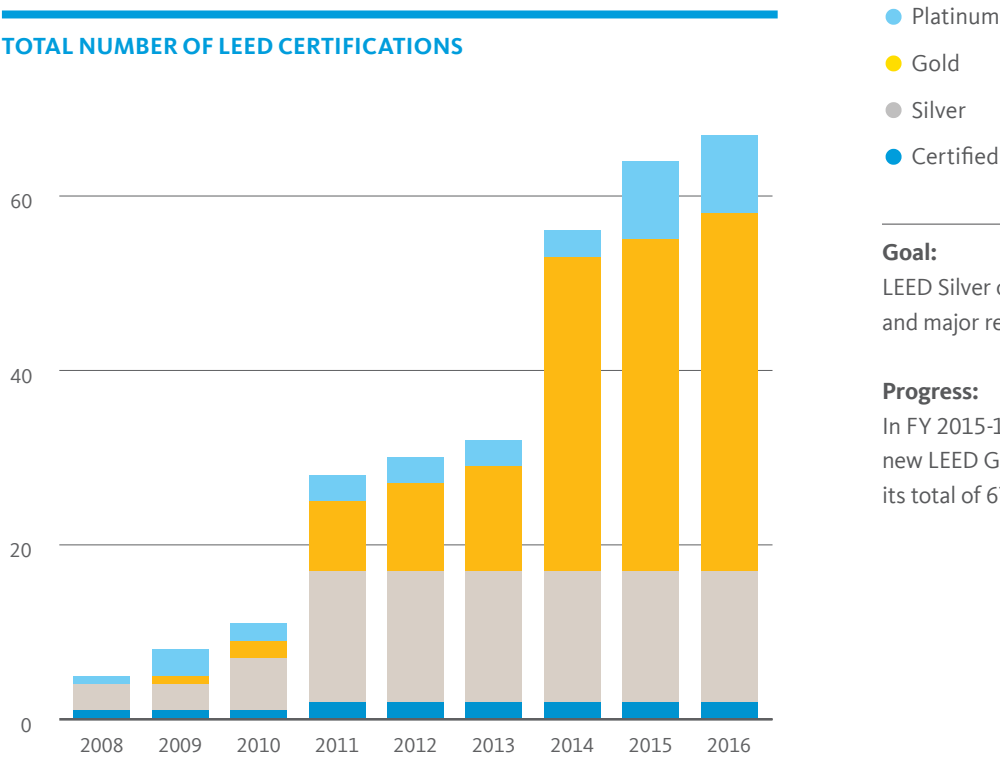
LANDFILL WASTE (NOT INCLUDING C&D)

(Pounds per capita)



Progress:
In FY 2015-16, UC Santa Barbara sent 160 pounds of solid waste per capita to the landfill, same as the previous year.

TOTAL NUMBER OF LEED CERTIFICATIONS



- Platinum
- Gold
- Silver
- Certified

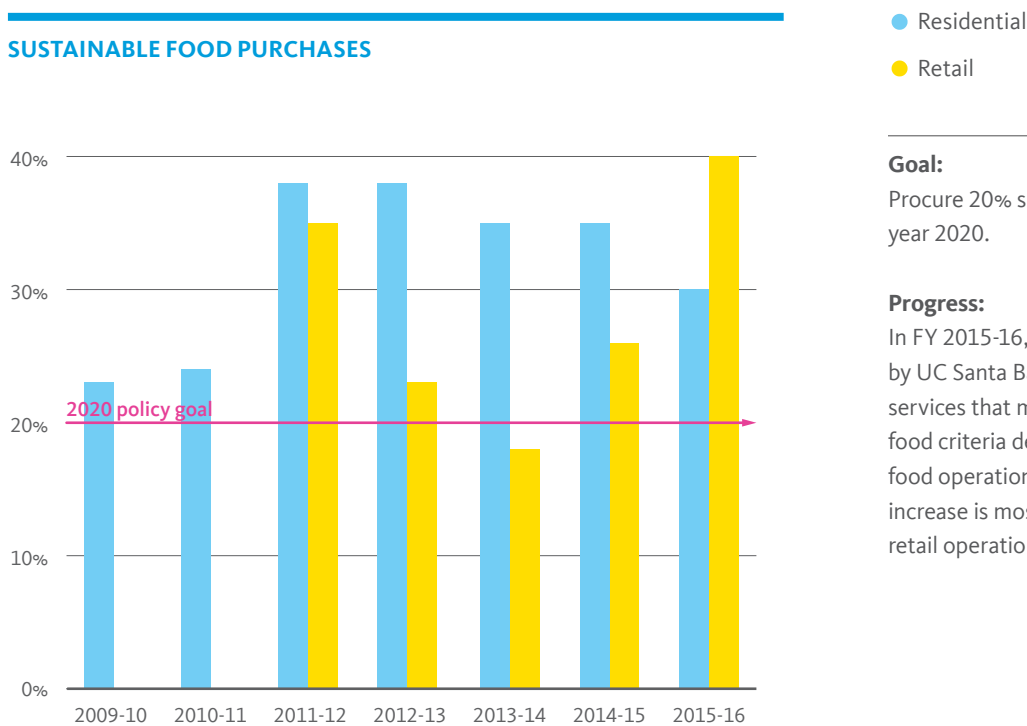
Goal:

LEED Silver certification for all new buildings and major renovations.

Progress:

In FY 2015-16, UC Santa Barbara received three new LEED Gold certifications, contributing to its total of 67 LEED certifications.

SUSTAINABLE FOOD PURCHASES



- Residential
- Retail

Goal:

Procure 20% sustainable food products by the year 2020.

Progress:

In FY 2015-16, the amount of food purchased by UC Santa Barbara's residential dining services that met one or more sustainable food criteria decreased by 5% while retail food operations increased spend by 14%. This increase is mostly due to improved reporting by retail operations.

UC Santa Cruz



UC Santa Cruz made advancements in many key areas of sustainability during the 2014-15 academic year. During the height of California's drought, the campus committed over \$350,000 to operational improvement projects and reduced potable water usage by over 25 percent. Student teams audited every restroom and kitchen fixture across campus, and educated campus users on how to monitor individual building water usage. Innovative water conservation projects included an academic study with the International Drought Experiment to evaluate ecosystem response to the drought, as well as the installation of a grant-funded rainwater harvesting system on campus that collects both rainwater and condensation from fog to flush toilets at the campus athletic facility.

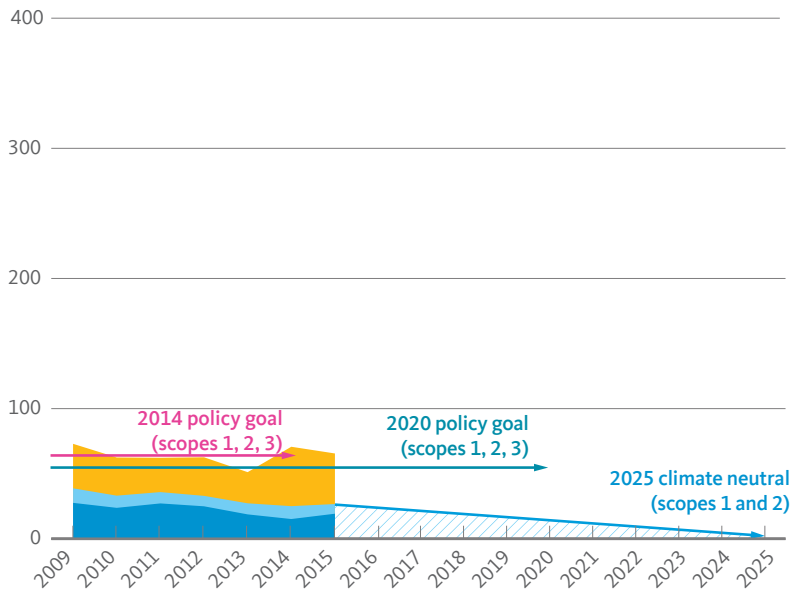
In collaboration with a team of consultants, UC Santa Cruz launched a yearlong integrated Climate and Energy Study

that included the development of a climate-centric techno-economic analysis tool. The tool, which will be shared with other campuses, will analyze various scenarios for development, project implementation, technology application and policy updates to help identify the best suite of strategies for achieving carbon neutrality by 2025 and for mitigating regulatory compliance costs.

In addition to significant operational projects, the campus also made headway in advancing sustainability through the curriculum. In fall 2015, the campus launched a new sustainability minor and a new academic concentration in sustainable food and agriculture.

GREENHOUSE GAS EMISSIONS

(Thousand metric tons CO₂e)



- Scope 1 (natural gas, campus fleet, fugitive)
- Scope 2 (purchased electricity)
- Scope 3 (campus commute, business air travel)

Goal:

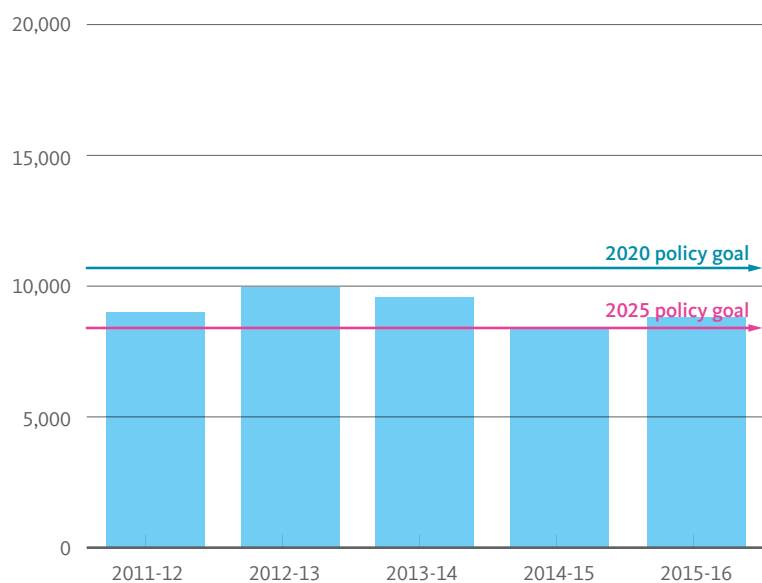
Reduce greenhouse gas emissions to year 2000 levels by 2014 and 1990 levels by 2020. Achieve climate neutrality for scope 1 and 2 sources by 2025.

Progress:

UC Santa Cruz achieved the 2014 policy goal of reducing greenhouse gas emissions to 2000 levels in 2015. This year UC Santa Cruz's GHG emissions totaled 65,536 metric tons, down 7% from the previous year, primarily due to decreases in scope 3 emissions.

POTABLE WATER CONSUMPTION

(Gallons per capita)



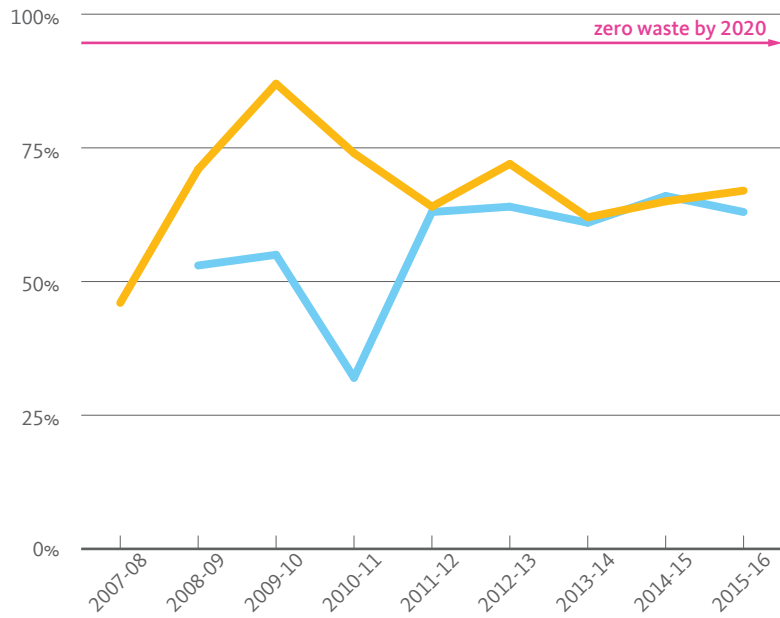
Goal:

Reduce growth-adjusted potable water consumption 20% by 2020 and 36% by 2025, when compared to a three-year average baseline of FY 2005-06, FY 2006-07, and FY 2007-08.

Progress:

In FY 2015-16, UC Santa Cruz consumed 8,817 gallons of potable water per capita. This is a 34% reduction from baseline. The campus has outperformed the 2020 policy goal and is on track to meet the 2025 goal.

SOLID WASTE DIVERTED FROM LANDFILL



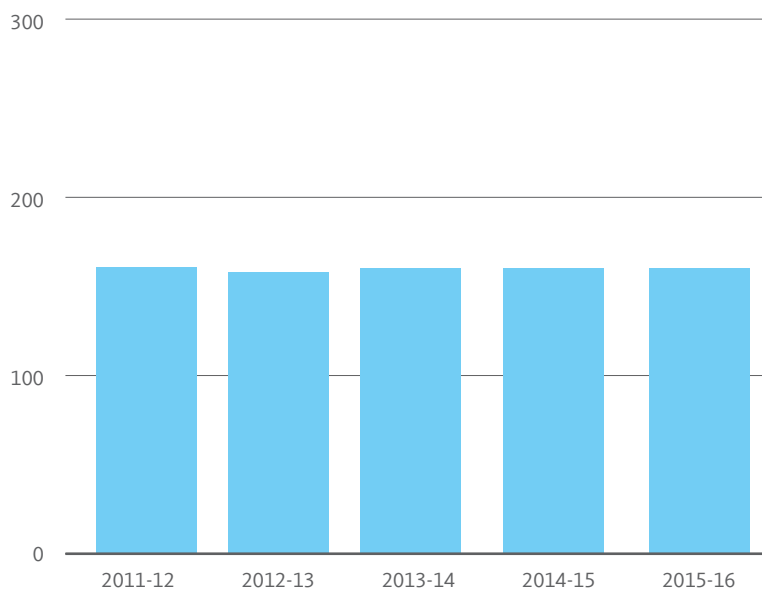
- With construction and demolition
- Without construction and demolition

Goal:
Zero Waste by 2020.

Progress:
In FY 2015-16, UC Santa Cruz diverted 67% of its waste from the landfill, an increase of 2 percentage points from FY 2014-15. When waste from construction and demolition (C&D) is not included, the amount of waste diverted from the landfill was 63% in FY 2015-16.

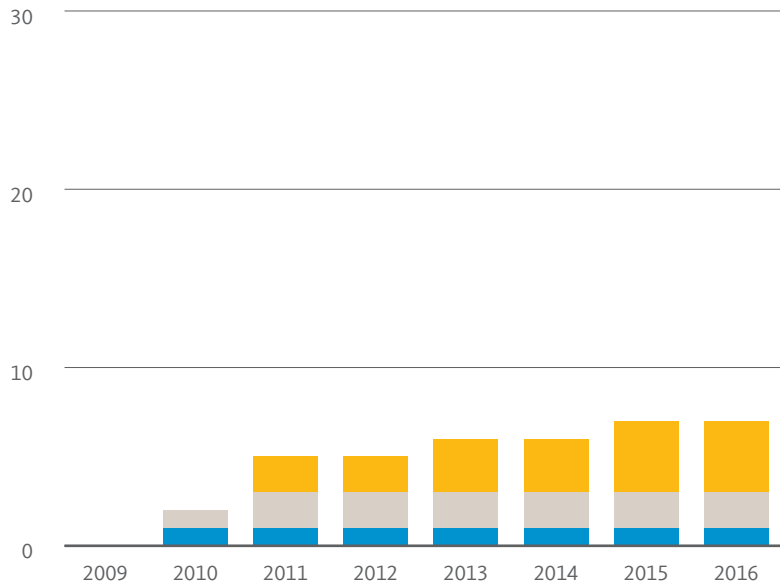
LANDFILL WASTE (NOT INCLUDING C&D)

(Pounds per capita)



Progress:
In FY 2015-16, UC Santa Cruz sent 160 pounds of solid waste per capita to the landfill, similar to the prior two years.

TOTAL NUMBER OF LEED CERTIFICATIONS



- Platinum
- Gold
- Silver
- Certified

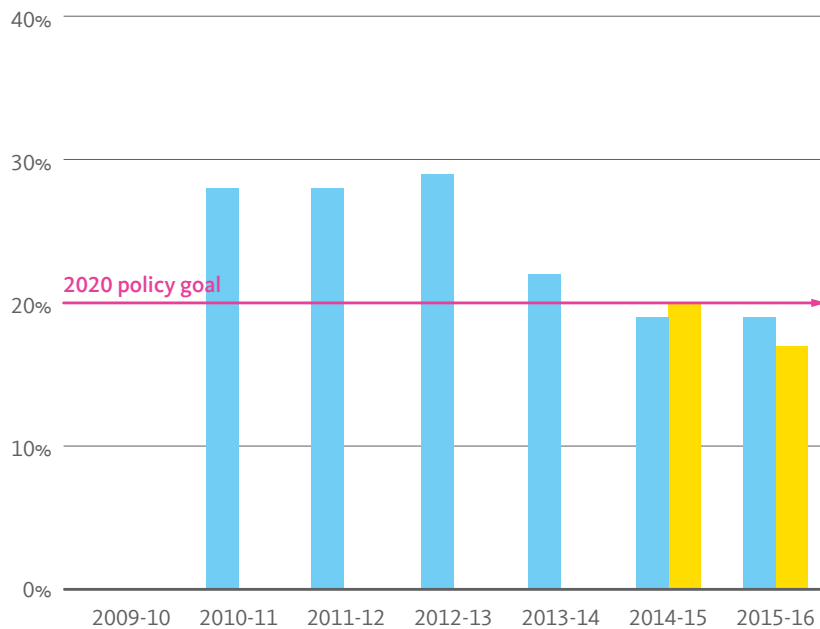
Goal:

LEED Silver certification for all new buildings and major renovations.

Progress:

In FY 2015-16, Santa Cruz received no new LEED certifications, maintaining its total of 7 LEED certifications.

SUSTAINABLE FOOD PURCHASES



- Residential
- Retail

Goal:

Procure 20% sustainable food products by the year 2020.

Progress:

In FY 2015-16, the amount of food purchased by Santa Cruz's residential dining services that met one or more sustainable food criteria remained at 19%.

The Medical Centers



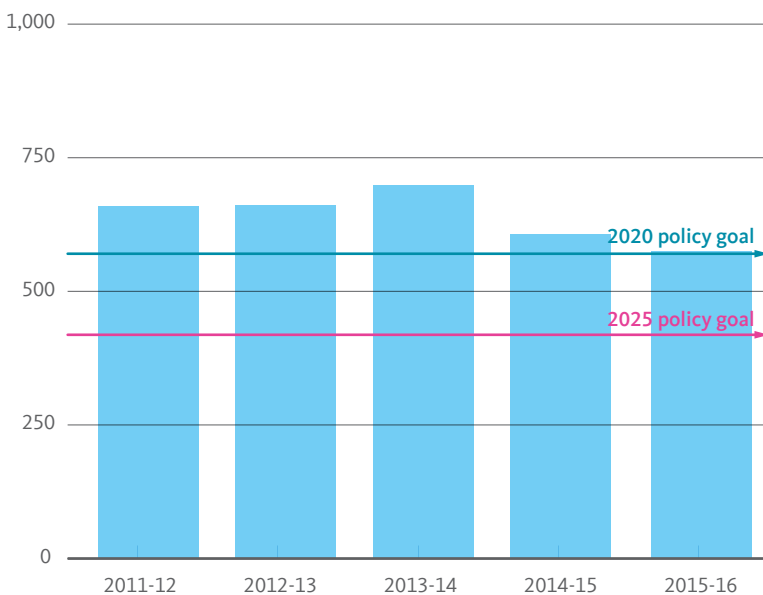
UC Davis Medical Center

Water conservation and greenhouse gas reductions were key areas of focus this year at the UC Davis Medical Center. Significant water reductions were achieved through a new condensate collection process at the Central Plant, which will save 2 million gallons of potable water a year. Landscaping upgrades, including xeriscaping of the main hospital entrance, will save up to half a million gallons. Twenty five accounts were setup to receive renewable energy through Sacramento Municipal Utility District’s Greenergy program and retrocommissioning and energy audits have taken place at select locations and several lighting retrofit projects are being pursued, some in partnership with the California Lighting Technology Center.

Additional progress towards waste and transportation goals included the implementation of Stericycle reusable sharps containers; reprocessing of single use medical devices; and the addition of car sharing services at two locations.

POTABLE WATER CONSUMPTION

(Gallons per capita)



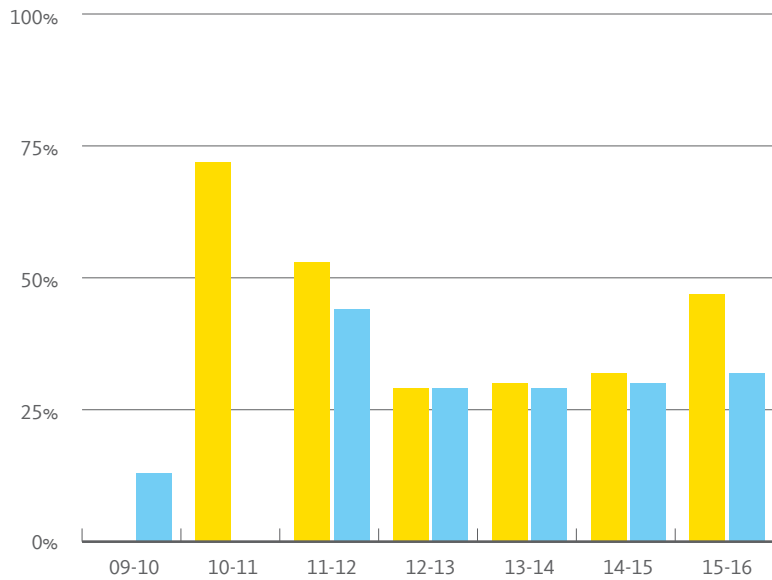
Goal:

Reduce growth-adjusted potable water consumption 20% by 2020 and 36% by 2025, when compared to a three-year average baseline of FY 2005-06, FY 2006-07, and FY 2007-08.

Progress:

In FY 2015-16, the UC Davis Health System consumed 576 gallons of potable water per capita. This is a 21% reduction from its three-year average baseline from FY 2005-06, FY 2006-07 and FY 2007-08.

SOLID WASTE DIVERTED FROM LANDFILL

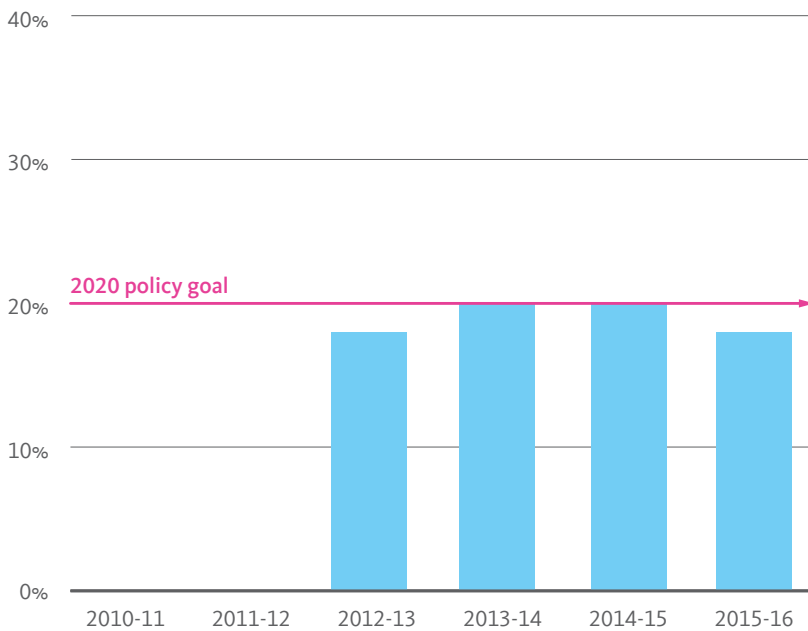


- With construction and demolition
- Without construction and demolition

Goal:
Zero Waste by 2020.

Progress:
In FY 2015-16, UC Davis Health System diverted 47% of its waste from the landfill, an increase of 15 percentage points from FY 2014-15. When waste from construction and demolition (C&D) is not included, the amount of waste diverted from the landfill was 32% in FY 2015-16.

SUSTAINABLE FOOD PURCHASES



Goal:
Procure 20% sustainable food products by the year 2020.

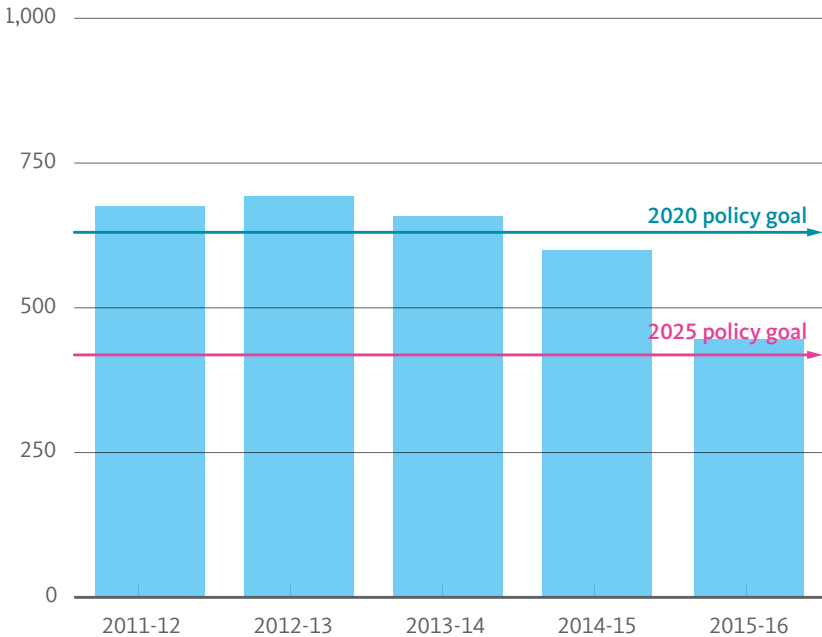
Progress:
In FY 2015-16, 18% of the food purchased at the UC Davis Health System met one or more sustainable food criteria, a slight decrease from FY 2014-15.

UC Irvine Medical Center

UC Irvine Health System made significant progress towards sustainability goals in FY 2015-16, particularly in waste tracking and water conservation. Irvine Health System began tracking almost all waste leaving the hospitals in 2016, enabling the system to benchmark waste information and accurately track progress on implemented waste diversion programs. In terms of water, Facilities Management partnered with subject matter experts to reduce water usage at its main buildings by over 30 percent annually through minimal infrastructure improvements. The progress made in this focused program will be expanded to realize more water savings in the next phase of this program. The Hospital begun realizing the benefits of an installed and fully-operational on-site fuel-cell that not only provides additional power and chilling capacity, but also generates water as a byproduct that the Health System will utilize to irrigate its surrounding landscape.

POTABLE WATER CONSUMPTION

(Gallons per capita)



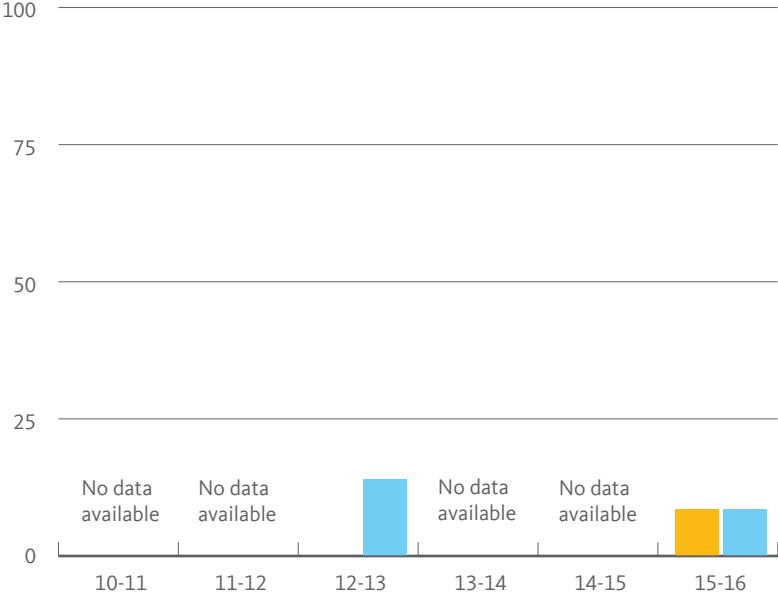
Goal:

Reduce growth-adjusted potable water consumption 20% by 2020 and 36% by 2025, when compared to a three-year average baseline of FY 2005-06, FY 2006-07, and FY 2007-08.

Progress:

In FY 2015-16, the UC Irvine Health System consumed 446 gallons of potable water per capita. This is a 31% reduction from its three-year average baseline from FY 2005-06, FY 2006-07 and FY 2007-08.

SOLID WASTE DIVERTED FROM LANDFILL

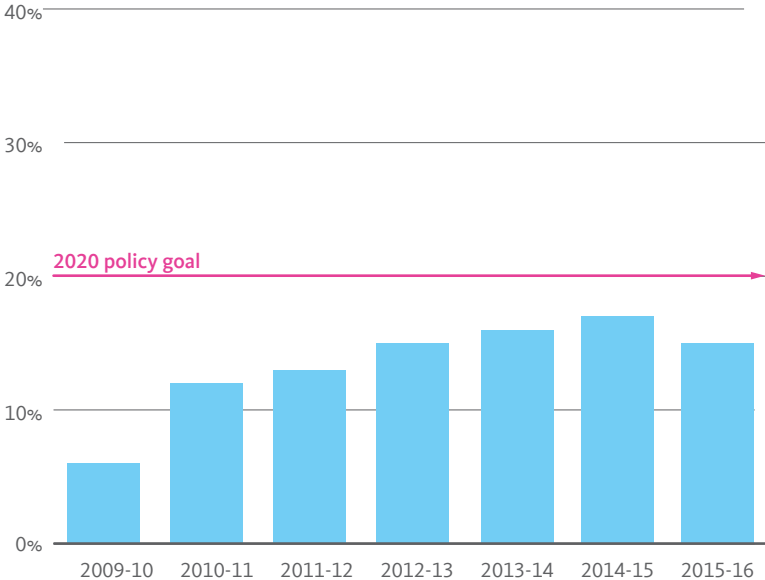


- With construction and demolition
- Without construction and demolition

Goal:
Zero Waste by 2020.

Progress:
In FY 2015-16, UC Irvine Health System diverted 8.4% of its waste from the landfill, the same amount as when waste from construction and demolition (C&D) is not included.

SUSTAINABLE FOOD PURCHASES



Goal:
Procure 20% sustainable food products by the year 2020.

Progress:
In FY 2015-16, 15% of the food purchased at the UC Irvine Health System met one or more sustainable food criteria, a decrease of 2% from FY 2014-15.

UCLA Medical Center

UCLA Medical Center made significant progress in waste diversion in the last year with the newly implemented Integrated Waste Management Program, which includes a reporting portal that is tracking all waste streams across UCLA Medical Center facilities. The recycling program has also been extended to medical building offices. In addition, the UCLA Medical Center completed the implementation of reusable isolation precaution gowns across the system.

Both the Ronald Reagan and Santa Monica medical centers received the Practice Greenhealth Partner in Change award for the sixth year in a row and the Santa Monica Medical Center was recognized as a 2016 Grand Prize Winner at the annual Santa Monica Sustainable Quality Awards.

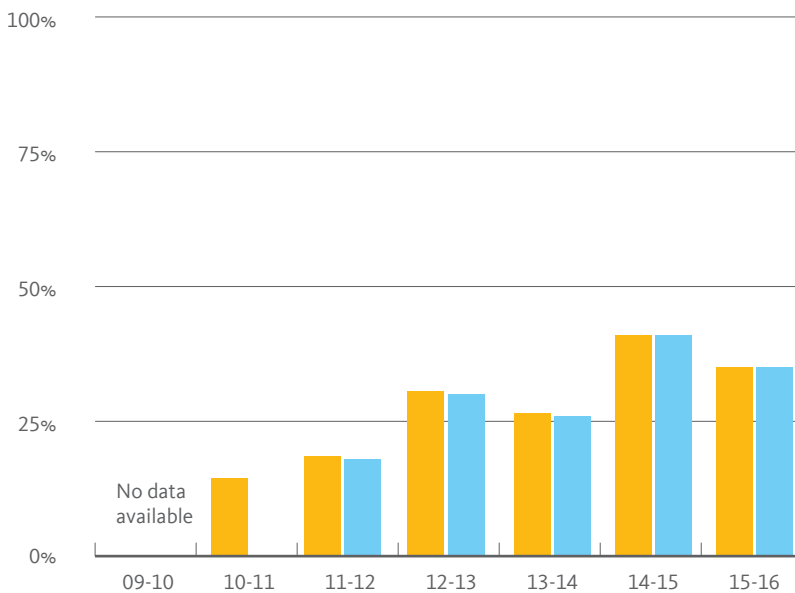
POTABLE WATER CONSUMPTION

Note:

UCLA Medical Center water use is included with the campus water use data. See UCLA's campus profile for details on progress.

SOLID WASTE DIVERTED FROM LANDFILL

- With construction and demolition
- Without construction and demolition



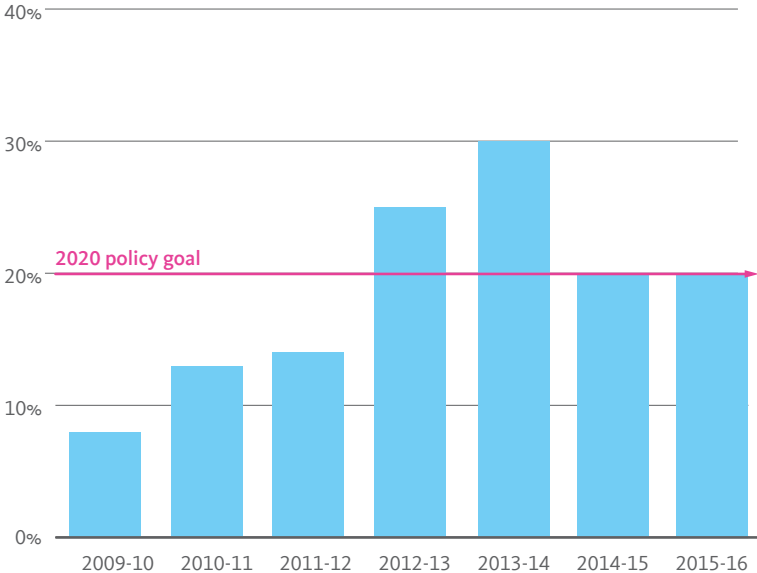
Goal:

Zero Waste by 2020.

Progress:

In FY 2015-16, UCLA Health System diverted 35% of its waste from the landfill, a decrease of 6 percentage points from FY 2014-15, and the same amount when waste from construction and demolition (C&D) is not included.

SUSTAINABLE FOOD PURCHASES



Goal:

Procure 20% sustainable food products by the year 2020.

Progress:

In FY 2015-16, 20% of the food purchased at the UCLA Health System met one or more sustainable food criteria, the same as in FY 2014-15.

UC San Diego Medical Center

UC San Diego Medical Center made progress in energy and water efficiency as well as waste diversion in FY 2015-16. Thornton Hospital upgraded their ventilation system, achieving yearly energy savings of 27,156 kWh, which will avoid \$4,073 in utility costs annually. In addition, an upgrade to the controls system in the Perlman Medical Offices at the La Jolla Clinics resulted in an estimated annual energy savings of 427,703 kWh, which will avoid more than \$72,000 in utility costs.

Striving beyond its LEED Silver certification, the Central Plant at UC San Diego Jacobs Medical Center achieved LEED Gold certification in late 2015 and is the first stand-alone medical center energy plant to attain this distinction.

A number of recent initiatives are tackling waste diversion as well. Patient Services adopted reusable kitchenware, including 70 percent of current dishware and utensils in use. The Medical Center is also making progress towards the adoption of Styrofoam-free packaging across its facilities.

POTABLE WATER CONSUMPTION

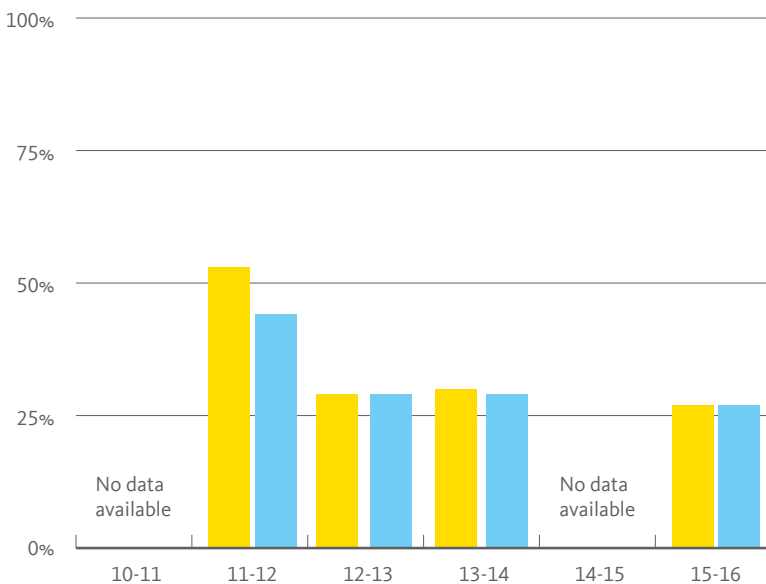
Note:

UC San Diego Medical Center water use is included with the campus water use data. See UC San Diego's campus profile for details on progress.

SOLID WASTE DIVERTED FROM LANDFILL

● With construction and demolition

● Without construction and demolition



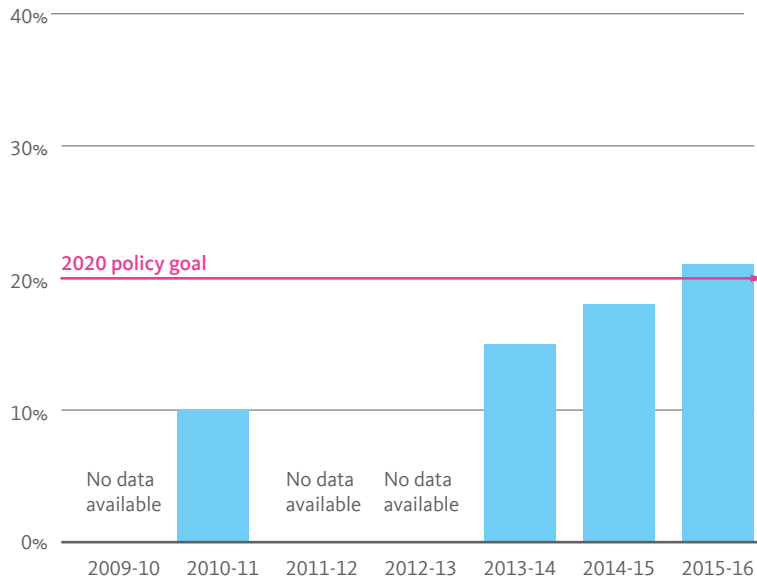
Goal:

Zero Waste by 2020.

Progress:

In FY 2015-16, UC San Diego Health System diverted 27% of its waste from the landfill, the same amount when waste from construction and demolition (C&D) is not included.

SUSTAINABLE FOOD PURCHASES



Goal:

Procure 20% sustainable food products by the year 2020.

Progress:

In FY 2015-16, 21% of the food purchased at the UC San Diego Health System met one or more sustainable food criteria, a 3% increase from FY 2014-15. The UC San Diego Health System has exceeded the 2020 policy goal of 20% sustainable food purchases.

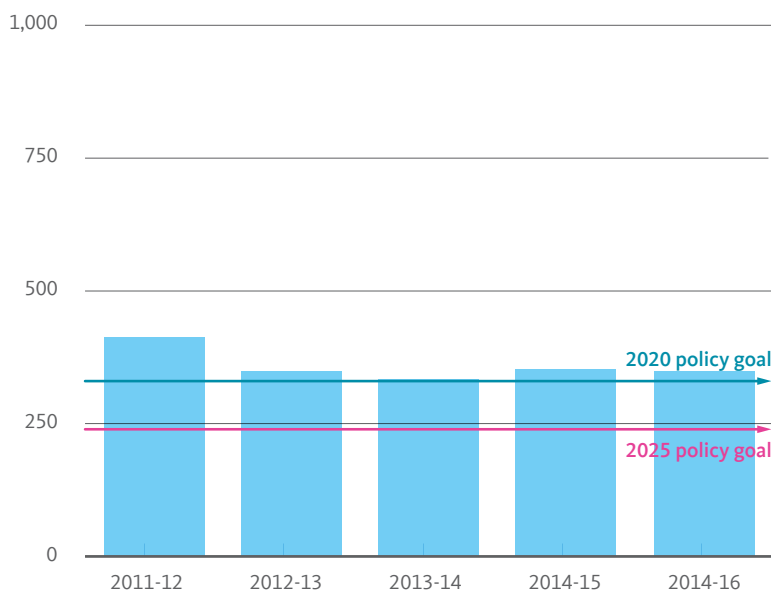
San Francisco Medical Center

UCSF Health continues to demonstrate its commitment to leadership in health and sustainability. A key accomplishment included attaining the Top 25 Environmental Excellence Award from Practice GreenHealth for the second year in a row. UCSF stood out among over 1,600 hospitals that applied for this award earned through demonstrated performance in sustainability leadership, energy savings, water conservation, waste reduction, employee engagement and green cleaning. UCSF Health also received two Circles of Excellence Awards, the first in Climate for reporting GHG emissions and the second in Green Building for achieving LEED Silver certification for two clinic renovation projects. In addition, the “Greening the OR” recognition was presented for reprocessing and recycling efforts in three hospitals, saving \$1.14 million last year. UCSF Health System was also named one of the 50 Greenest Hospitals in America for the second year by Becker’s Hospital Review. UCSF also received REAL certification from the U.S. Healthful Food Council, the first health care organization to receive this recognition.

UCSF Health strives to share sustainable best practices with our affiliates at Benioff Children’s Hospital Oakland, John Muir Health System and Washington Hospital Health System as well as visitors from Korea and Australia through Healthcare Without Harm. In partnership with Benioff Children’s Hospital Oakland, 63,000 lbs of pediatric hospital equipment was donated to the Harare Children’s Hospital in Zimbabwe last year. Other achievements include a steam trap retrofit at Mt. Zion Hospital (an Energy Star-rated building) saving over \$19,000 per year and even more in water savings.

POTABLE WATER CONSUMPTION

(Gallons per capita)



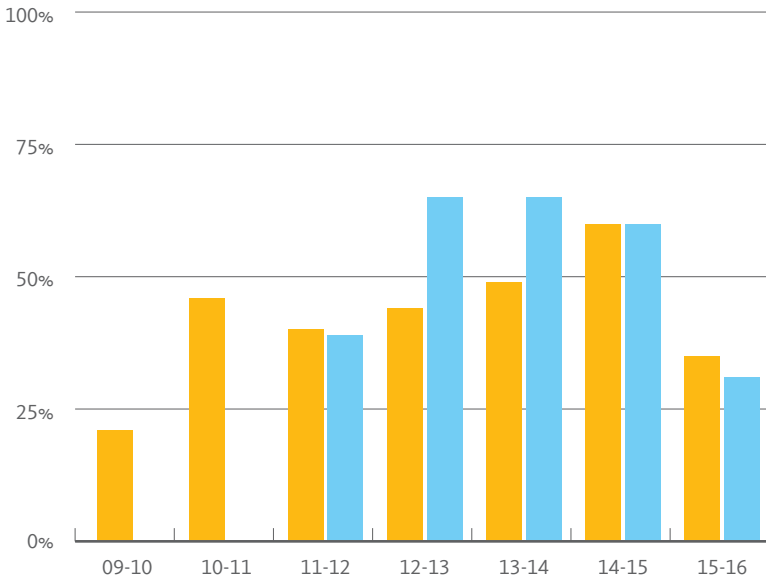
Goal:

Reduce growth-adjusted potable water consumption 20% by 2020 and 36% by 2025, when compared to a three-year average baseline of FY 2005-06, FY 2006-07, and FY 2007-08.

Progress:

In FY 2015-16, the UCSF Health System consumed 349 gallons of potable water per capita. This is an 8% reduction from its three-year average baseline from FY 2005-06, FY 2006-07 and FY 2007-08.

SOLID WASTE DIVERTED FROM LANDFILL

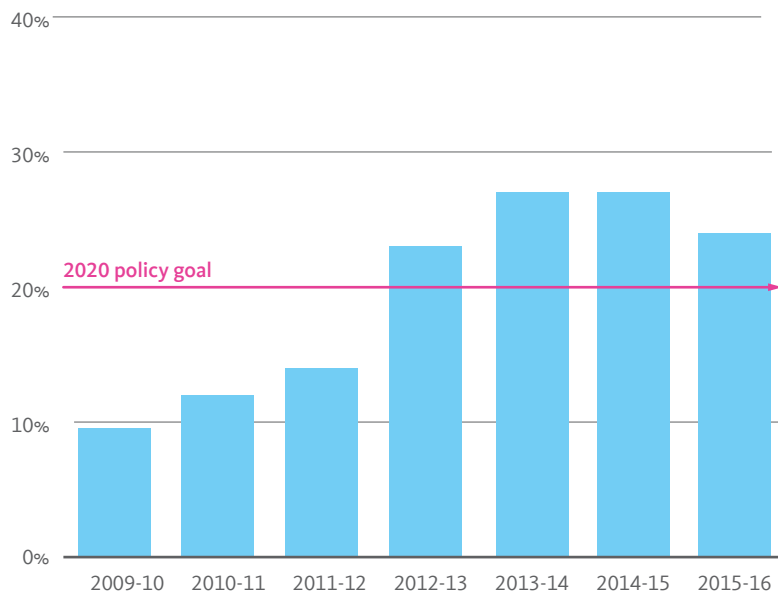


- With construction and demolition
- Without construction and demolition

Goal:
Zero Waste by 2020.

Progress:
In FY 2015-16, UCSF Health System diverted 35% of its waste from the landfill, a decrease of 25 percentage points from FY 2014-15. When waste from construction and demolition (C&D) is not included, the amount of waste diverted from the landfill was 31% in FY 2015-16.

SUSTAINABLE FOOD PURCHASES



Goal:
Procure 20% sustainable food products by the year 2020.

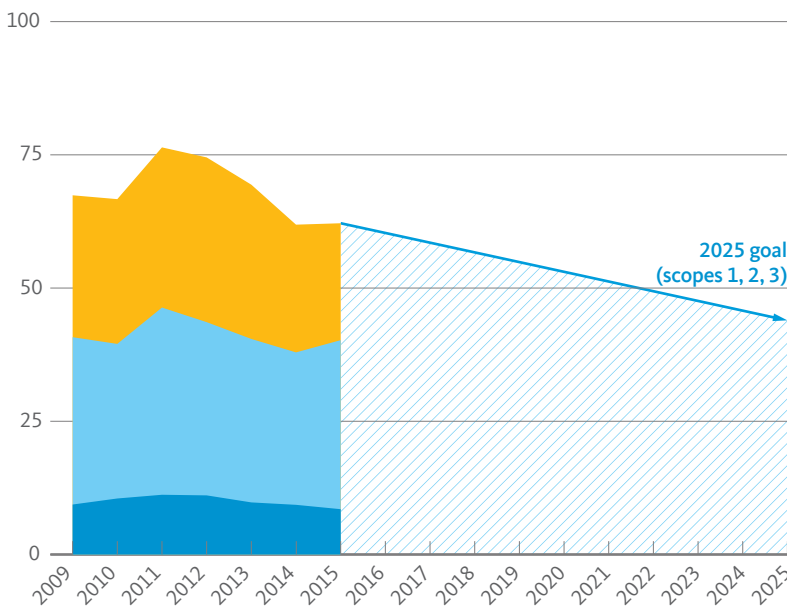
Progress:
In FY 2015-16, 24% of the food purchased at the UCSF Health System met one or more sustainable food criteria, a 3% decrease from FY 2014-15.

Lawrence Berkeley National Laboratory

Lawrence Berkeley National Lab (Berkeley Lab) significantly expanded energy management, commissioning and efficiency retrofit activities in the last year, delivering three significant energy-saving projects, forming a dedicated energy management team and performing commissioning studies across its main site. Berkeley Lab integrated numerous natural gas interval meters to an online energy information system, expanding coverage from 35 to 90 percent of natural gas use. The Lab also completed design of a new laboratory facility using whole-building performance targets set at 35 percent of business-as-usual, represented by the energy use of the future tenant in its current facility. Berkeley Lab continued incremental improvements in sustainable purchasing, waste diversion, expansion of electric vehicle charging infrastructure and restroom fixture retrofits as part of its water action plan.

GREENHOUSE GAS EMISSIONS

(Thousand metric tons CO₂e)



- Scope 1 (natural gas, campus fleet, fugitive)
- Scope 2 (purchased electricity)
- Scope 3 (campus commute, business air travel)

Goal:

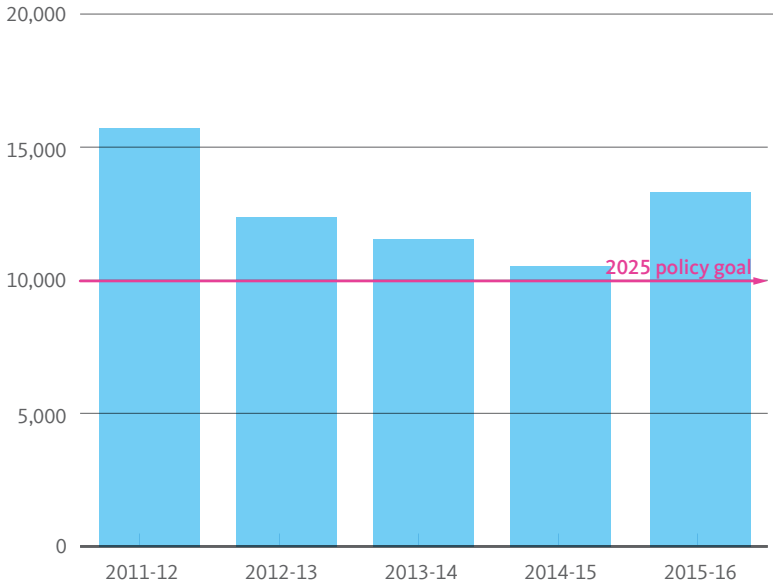
Berkeley Lab is governed by the Federal Government's climate goal: Reduce total greenhouse gas emissions 41% from 2008 levels by 2025 (50% reduction in scope 1 and 2 and 25% reduction in scope 3).

Progress:

In 2015, Berkeley Lab's total scope 1, 2, and 3 GHG emission rose slightly over last year.

POTABLE WATER CONSUMPTION

(Gallons per capita)



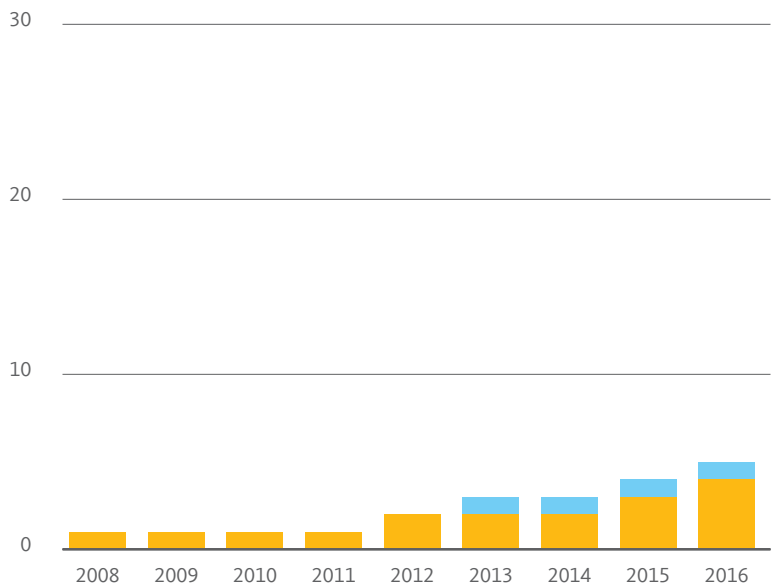
Goal:

Berkeley Lab is governed by the Federal Government’s water goal: Reduce water use intensity 36% from 2007 levels by 2025.

Progress:

In FY 2015-16, the Berkeley Lab consumed 13,312 gallons of potable water per capita. This is a 18% reduction from its baseline.

TOTAL NUMBER OF LEED CERTIFICATIONS



- Platinum
- Gold
- Silver
- Certified

Goal:

Berkeley Lab is governed by the Federal Government’s green building goal: Minimum LEED Gold certification for all new buildings and major renovations exceeding \$5 million.

Progress:

In FY 2015-16, Berkeley Lab received one additional LEED Gold certification, contributing to its total of five LEED certifications.

University of California, Office of the President

The Annual Report on Sustainable Practices is provided to the UC Board of Regents each January to report on progress toward meeting the goals in the Policy on Sustainable Practices.

Find more information, resources, previous years' reports and more on the UCOP Sustainability website:
<http://ucop.edu/sustainability/>

Sustainability at UC campuses

UC Berkeley:

<http://sustainability.berkeley.edu/>

UC Davis:

<http://sustainability.ucdavis.edu/>

UC Davis Health System:

<http://www.ucdmc.ucdavis.edu/sustainability/>

UC Irvine:

<http://www.sustainability.uci.edu/>

UCLA:

<http://www.sustain.ucla.edu/>

UCLA Health:

<http://sustainability.uclahealth.org/>

UC Merced:

<http://sustainability.ucmerced.edu/>

UC Riverside:

<http://sustainability.ucr.edu/>

UC San Diego:

<http://sustain.ucsd.edu/>

UC San Francisco:

<http://sustainability.ucsf.edu/>

UC Santa Barbara:

<http://sustainability.ucsb.edu/>

UC Santa Cruz:

<http://sustainability.ucsc.edu/>

Lawrence Berkeley National Laboratory:

<http://sbl.lbl.gov/>