

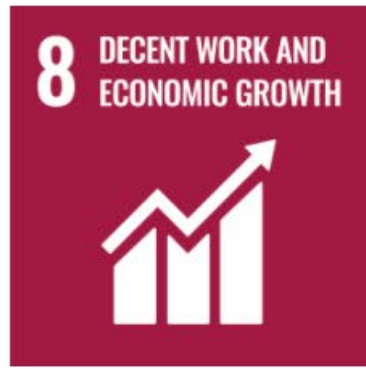


HOW SHARED GOVERNANCE CAN IMPACT SUNY SUSTAINABILITY INITIATIVES

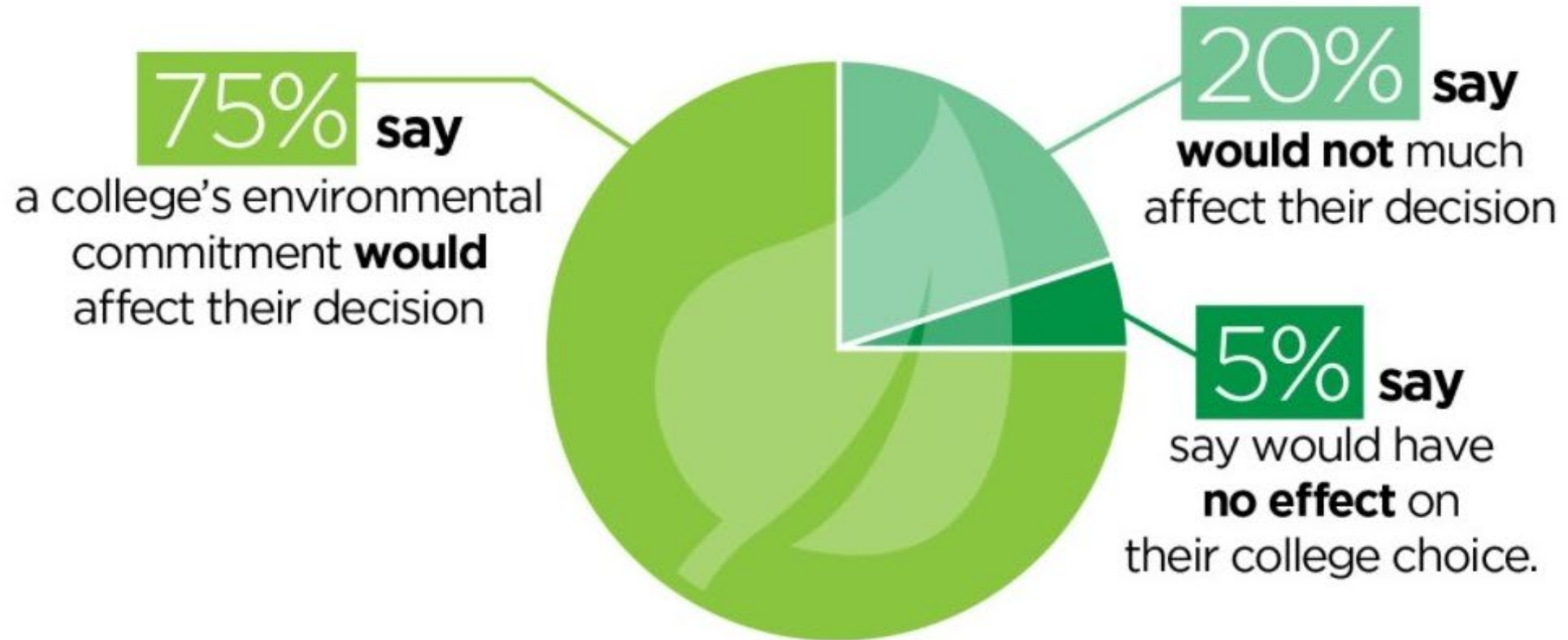
Robert Haelen – Sr. Vice Chancellor for Capital Facilities and General Manager Construction Fund robert.haelen@suny.edu

Karren Bee-Donohoe, Associate Vice Chancellor for Capital Facilities karren.bee-donohoe@suny.edu

January 2022



School commitment to the environment affecting school choice



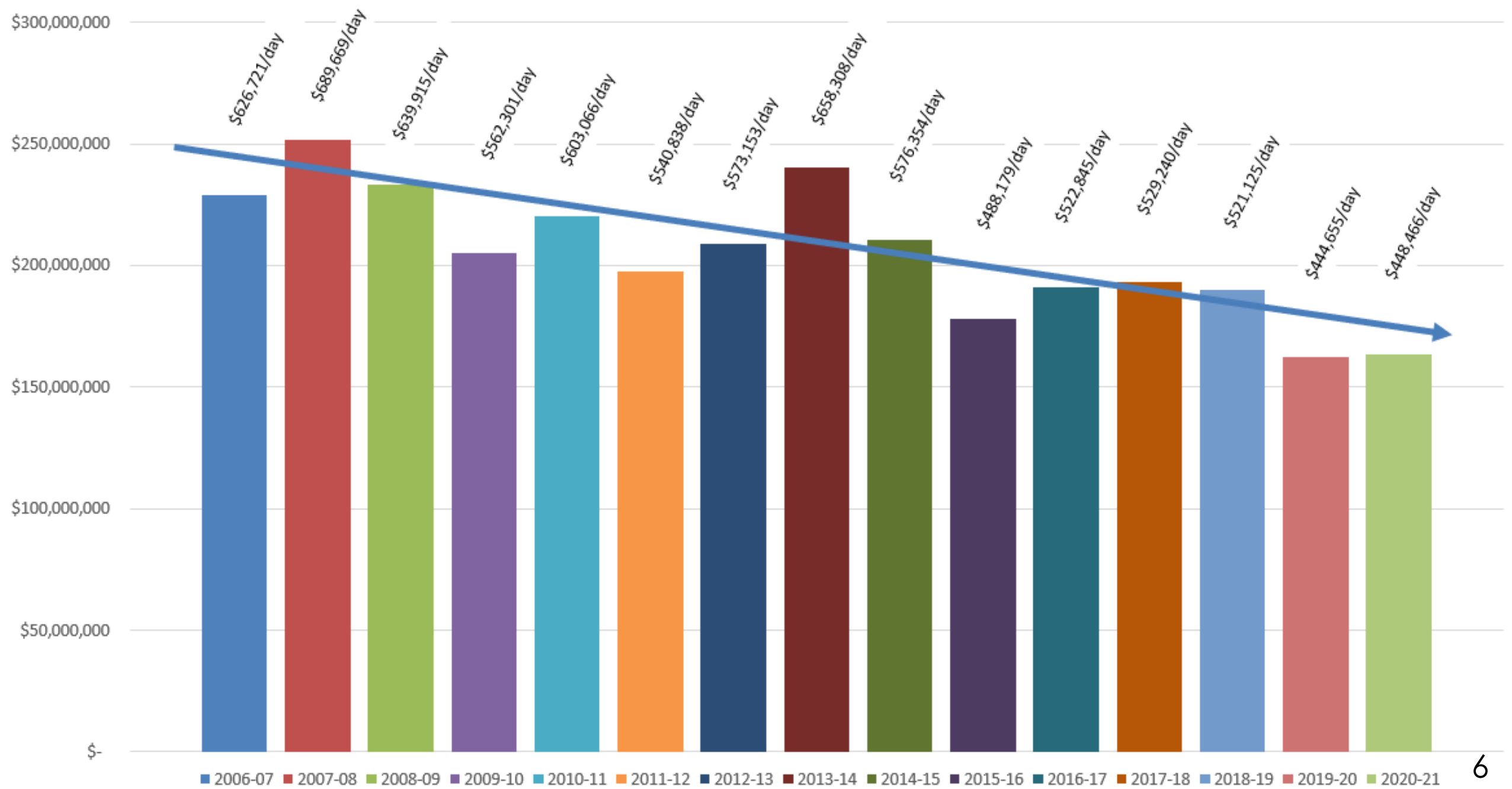
2021 University of Bath Survey

A survey across 10 countries (including the US) led by Bath University, with responses from 10,000 people aged between 16 and 25.

- ✓ Nearly 60% feel very or extremely worried about climate change
- ✓ 45% feel climate affected their daily lives.
- ✓ Three-quarters said the future was frightening.
- ✓ Over half (56%) think humanity is doomed
- ✓ 40% are hesitant to have children because of climate change

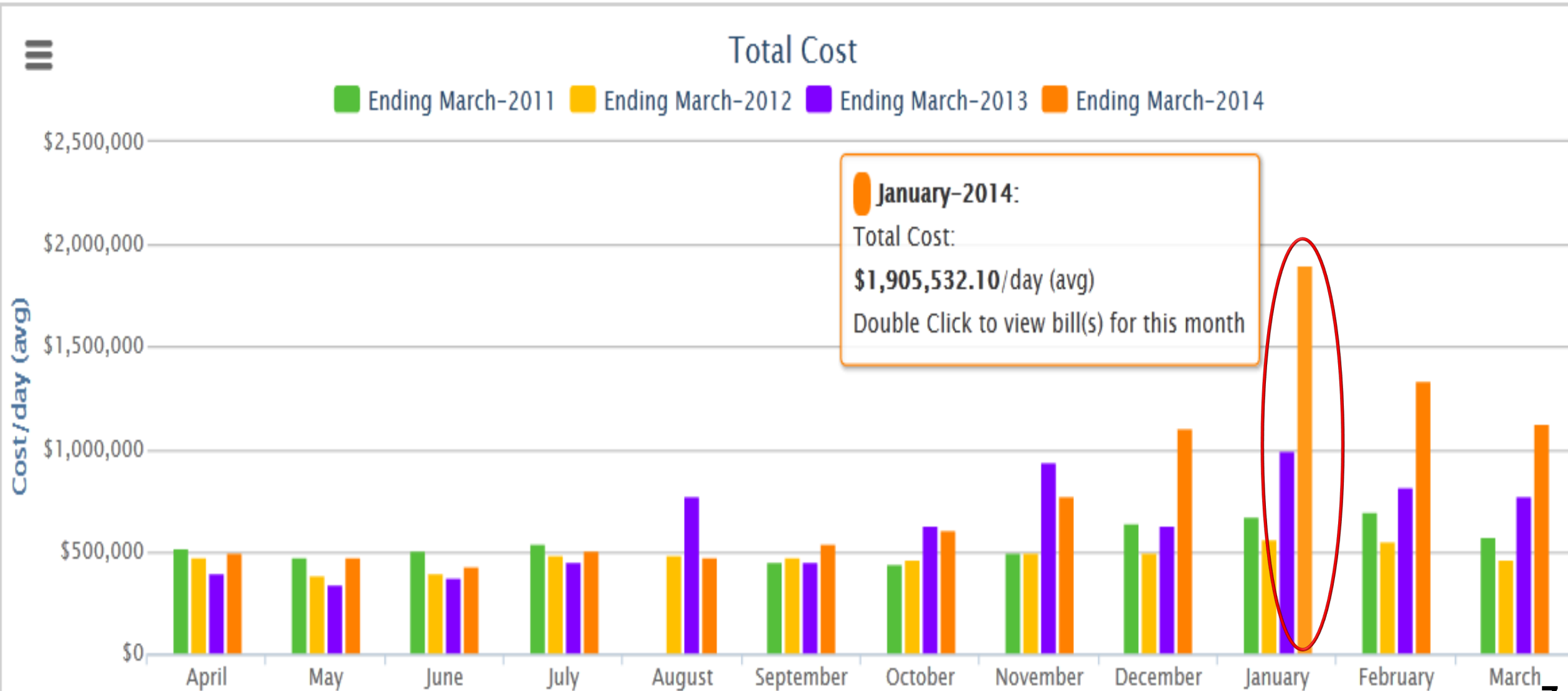
One 16-year-old summed it up well, "*It's different for young people - for us, the destruction of the planet is personal.*"

Total Annual Utility Spend and Average Per Day Spend



January 2014 - Average Daily Cost - \$1.9 Million

Range: Ending: Year(s): Calendar



CONFERENCE OF PARTIES

COP26

- 1992 United Nations Framework Convention on Climate Change (UNFCCC)
- Beginning in 1995 the annual Conference of Parties (COP) began
- COP 21 (the 21st COP) in 2015 in Paris established the Paris Accord

CLIMATE LEADERSHIP & COMMUNITY PROTECTION ACT

- 2019 CLCPA Legislation signed by the Governor
- Climate Action Council (CAC) created 22-members
- CAC draft Scoping Plan Released January 2022
- **Public comment due April 30th**
- Final Scoping Plan to be delivered to Governor and Legislature by Jan 1, 2023
- **DEC to release regulations by 2024**

NEW YORK STATE

- EO 166 – affirms Paris Accord
- New Efficiency: New York - 185 Trillion Btu reduction
- BuildSmart 2025
- Food Donation and Food Scraps Recycling Law
- Renewable Heating and Cooling Framework
- Zero Emission Vehicle MOU
- Waste Management
- Reduction of single use plastics





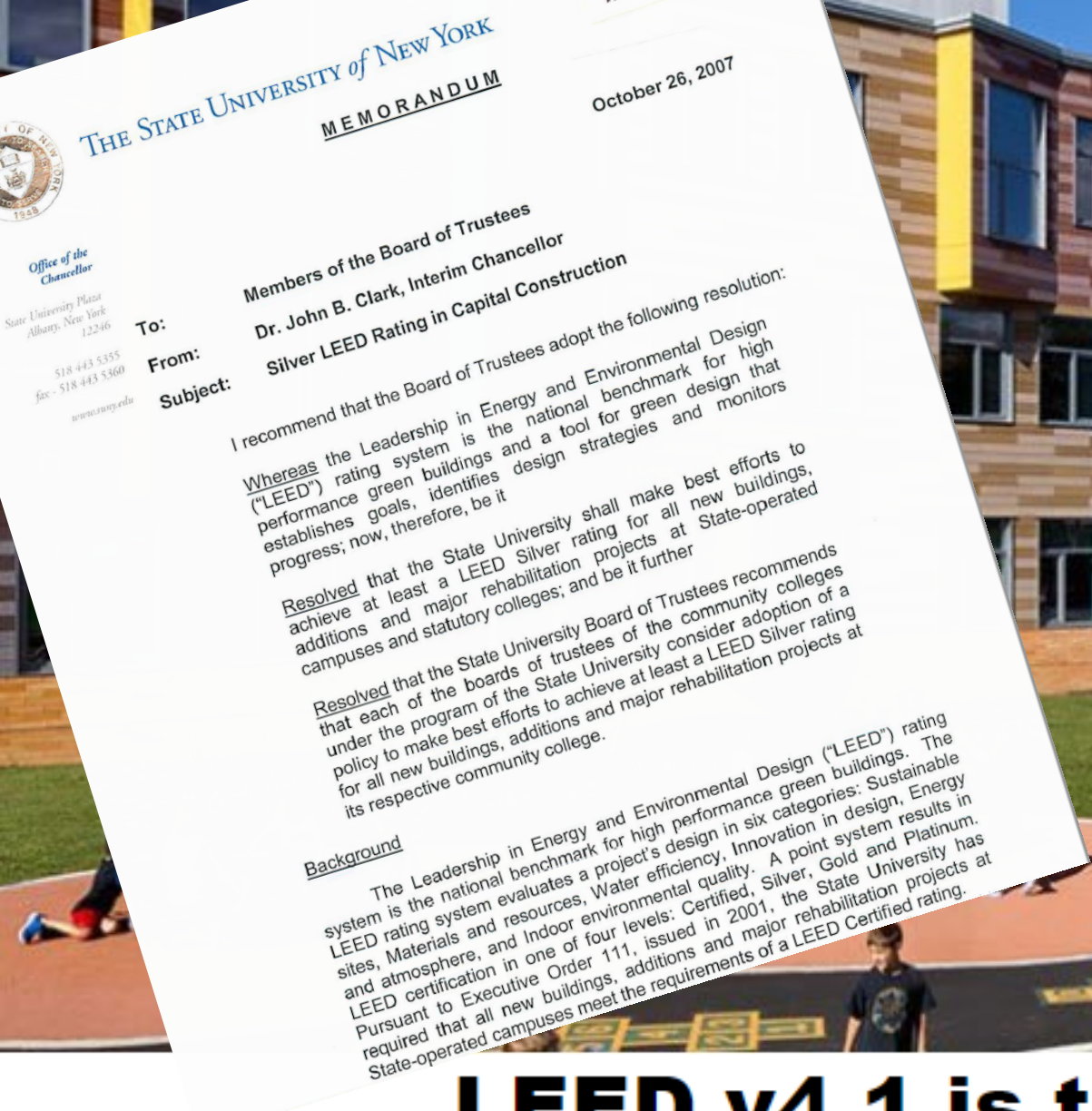
SUNY PAST EFFORTS

2006-07 Energy Strategic Planning Task Force

MISSION/OBJECTIVE: SUNY will assume a national leadership role in energy sustainability, education, technology, economics and public policy through a transformational integration of practice, teaching and research.

GOALS ESTABLISHED BY 2006-07 TASKFORCE

- More Education focused on energy and the environment
- Engage with NYS Public Service Commission (PSC) and Federal Energy Regulatory Commission (FERC)
- Procure energy at lowest possible costs
- Increase use of bio-fuels
- Reduce Greenhouse Gas
- **LEED Silver for all new buildings and major renovations**



THE STATE UNIVERSITY OF NEW YORK
MEMORANDUM

October 26, 2007

Office of the
Chancellor

State University Plaza
Albany, New York
12246

518 443 5355
fax - 518 443 5360
www.sunysu.edu

To: Members of the Board of Trustees
Dr. John B. Clark, Interim Chancellor
From:
Subject: Silver LEED Rating in Capital Construction

I recommend that the Board of Trustees adopt the following resolution:

Whereas the Leadership in Energy and Environmental Design ("LEED") rating system is the national benchmark for high performance green buildings and a tool for green design that establishes goals, identifies design strategies and monitors progress; now, therefore, be it

Resolved that the State University shall make best efforts to achieve at least a LEED Silver rating for all new buildings, additions and major rehabilitation projects at State-operated campuses and statutory colleges; and be it further

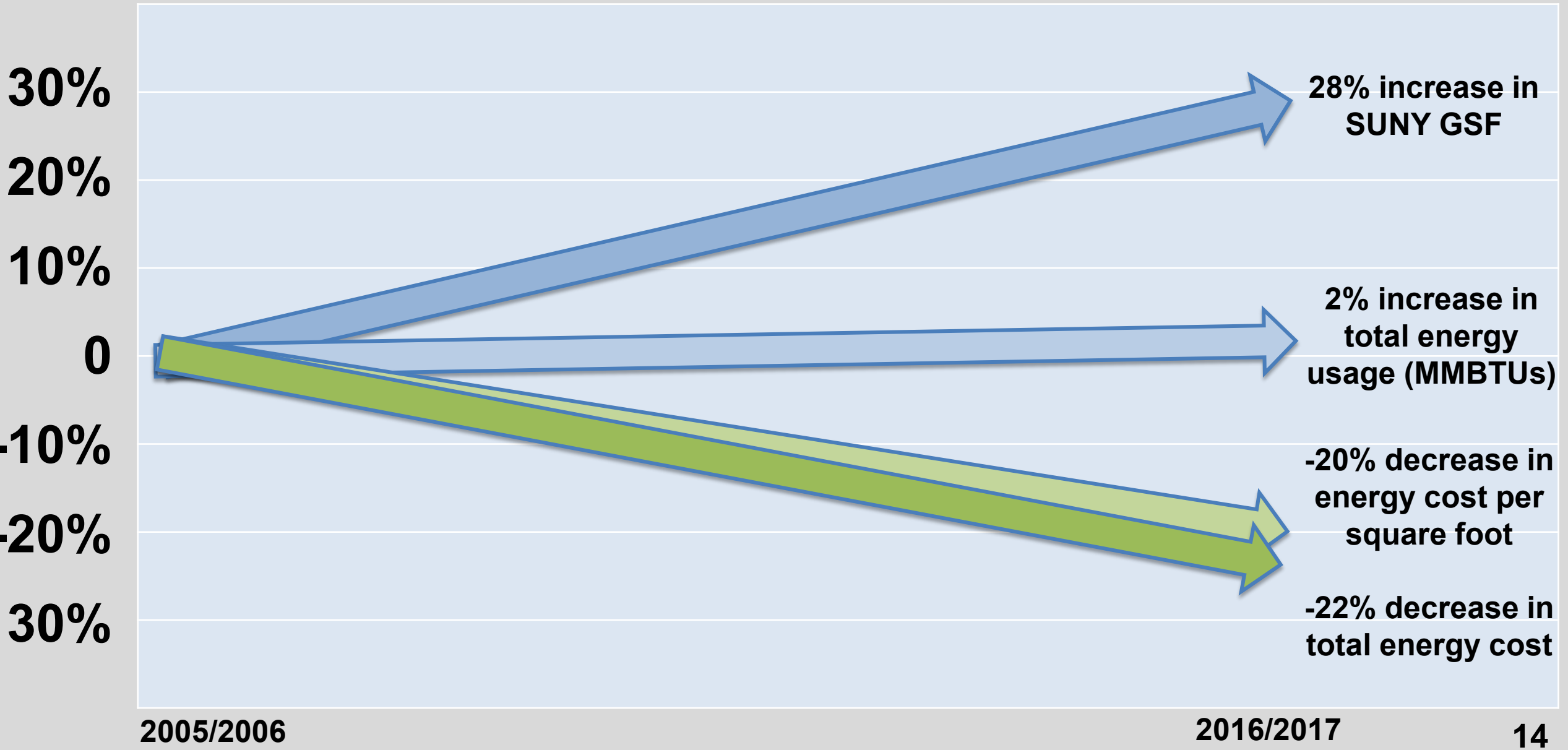
Resolved that the State University Board of Trustees recommends that each of the boards of trustees of the community colleges under the program of the State University consider adoption of a policy to make best efforts to achieve at least a LEED Silver rating for all new buildings, additions and major rehabilitation projects at its respective community college.

Background

The Leadership in Energy and Environmental Design ("LEED") rating system is the national benchmark for high performance green buildings. The LEED rating system evaluates a project's design in six categories: Sustainable sites, Materials and resources, Water efficiency, Innovation in design, Energy and atmosphere, and Indoor environmental quality. A point system results in LEED certification in one of four levels: Certified, Silver, Gold and Platinum. Pursuant to Executive Order 111, issued in 2001, the State University has required that all new buildings, additions and major rehabilitation projects at State-operated campuses meet the requirements of a LEED Certified rating.

LEED v4.1 is the next generation standard for green building design

SUNY ENERGY EFFICIENCY - UPDATE



2005/2006

2016/2017

Six Big Ideas

To revitalize the economy of New York and enhance the quality of life for its citizens, SUNY will commit our energy and resources to the realization of Six Big Ideas:

SUNY and the Entrepreneurial Century

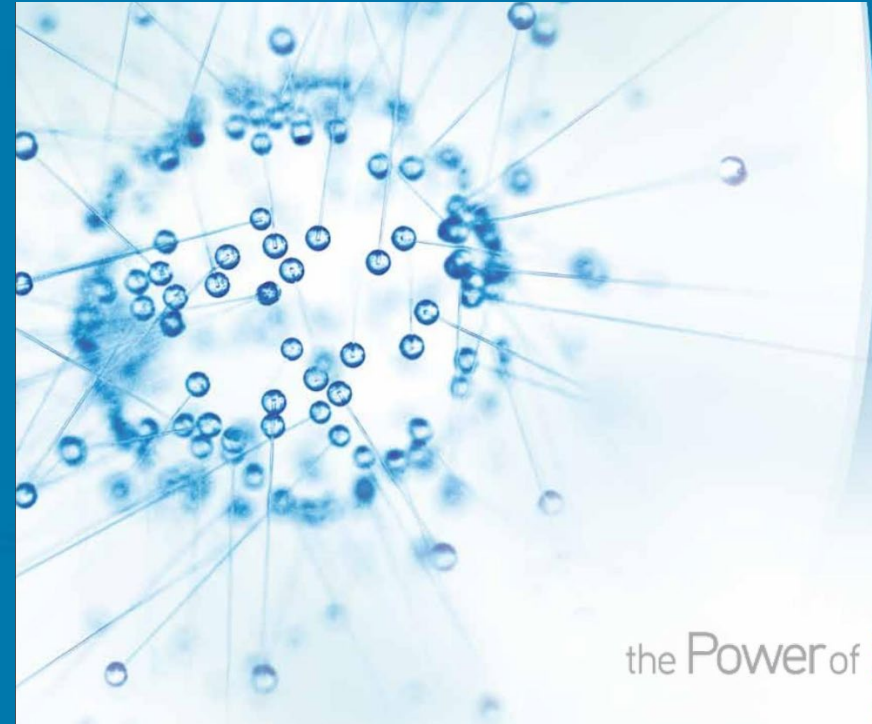
SUNY and the Seamless Education Pipeline

SUNY and a Healthier New York

SUNY and an Energy-Smart New York

SUNY and the Vibrant Community

SUNY and the World



STRATEGIC
PLAN

2010 & BEYOND

the Power of **SUNY**
The State University of New York

SUNY SMART GRID

Incorporating information technology and communication tools, a Smart Grid transforms our existing electricity grid into one that is cleaner, safer, and more reliable and efficient. Among other things, a Smart Grid accepts energy from virtually any fuel source (including solar and wind); allows consumers to tailor their

energy costs
(like price
system over
outages; r
and slows
SUNY is a
State Smart
drive down
costs while

as our own “grid” of colleges and universities reaching every corner of New York, SUNY Smart Grid is uniquely suited to help invent, test, commercialize, train, and educate for this energy revolution, leading the way in making Smart Grid a reality for New York.

NEW YORK AS A GREEN INCUBATOR

When it comes to green energy, SUNY and New York State are already rich in talent and resources. We have an incomparable base of experts in both academia and industry who are researching, analyzing, developing, and commercializing cutting-edge energy initiatives,

will fast-track our strategies, putting us on the leading edge of opportunities. And we will tap into more and different kinds of financing—including venture capital and angel investment funding—to place New York at the forefront of the clean energy economy.

LIVING SMART

With an annual energy bill of about \$280 million, SUNY is among the state’s largest energy consumers—now, we need to be its smartest. While each of our campuses has a sustainability coordinator and committee, and while we’ve established stringent energy standards for new buildings and renovations, we can and must do much more to shrink our carbon footprint.


reduce SUNY’s system-wide energy consumption by at least 30 percent over the decade by becoming the nation’s first of “energy smart” campuses. Our students, meanwhile, represent a critical mass of green thinkers and especially if we offer courses and degrees that equip them with the best thinking practices. And if our campuses get it right, communities will too.

SUNY and An Energy-Smart New York

Achieving sustainability demands action on multiple fronts at once. SUNY’s collective intelligence makes it New York’s renewable resource for ideas.

STRATEGIC PLAN

2010 & BEYOND



Although SUNY's 64 campuses have degree, certificate and non-credit programs related to energy and sustainability, there is no comprehensive inventory or database to guide prospective students, nor any system-wide effort to ensure that SUNY's nearly 465,000 students receive broad/deep academic exposure to energy and sustainability.

SUNY GENERAL EDUCATION REQUIREMENTS

New Framework Highlights

I. **Label:** World History and Global Awareness

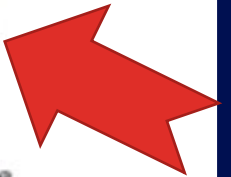
II. **Student Learning Outcomes**

Students will:

- demonstrate knowledge of a broad outline of world history and/or the development of the distinctive features of at least one civilization or culture in relation to other regions of the world; and
- demonstrate an understanding of the structures, systems, and interrelationships among civilizations and cultures within historical and/or contemporary contexts, and their impact on wellbeing and sustainability.

III. **Guidance (draft)**

- *Courses on specialized topics or periods—examples include: classical mythology, the Renaissance, the Bible, French civilization, the history of theater—are approvable so long as the materials demonstrate that the primary focus of the course relates to larger cultural developments of world history. Courses that focus narrowly on particular authors or figures are generally not approvable, even if the authors in question should be very important ones. The operative idea is that the core of the course must be central to world history and global awareness, and the treatment of that core placed in broader cultural perspective so that students gain an acquaintance with world history and not just specialized knowledge of one narrowly defined topic. The study of indigenous populations is approvable in this category.*



Environmental Justice

The CP in the CLCPA is ***Community Protection***

“The Climate Justice Working Group is tasked with establishing criteria for identifying disadvantaged communities for the purposes of co-pollutant reductions, greenhouse gas emissions reductions, regulatory impact statements, and the allocation of investments pursuant to the CLCPA.”

Minimum of 35% to be directed toward disadvantaged communities

NYCSHE, the NY Coalition for Sustainability in Higher Education unites representatives of higher education and supporting organizations with a common interest to promote, sustain and advocate for environmental, economic and social responsibility as envisioned by the United Nations' Sustainable Development Goals.

The SUNY Sustainability Coalition (SSC), a subgroup of NYCSHE, serves as a state forum for sustainability initiatives, bringing together a broad spectrum of SUNY professionals to discuss issues critical to the acceleration, expansion and adoption of sustainable initiatives around curriculum, operations, research and engagement.

Supporting Sustainability in Higher Education Throughout New York State

SUNY'S ACTIVE RESEARCH AND PROGRAMS



Stony Brook Advanced Energy Research and Technology Center



University at Buffalo RENEW Institute

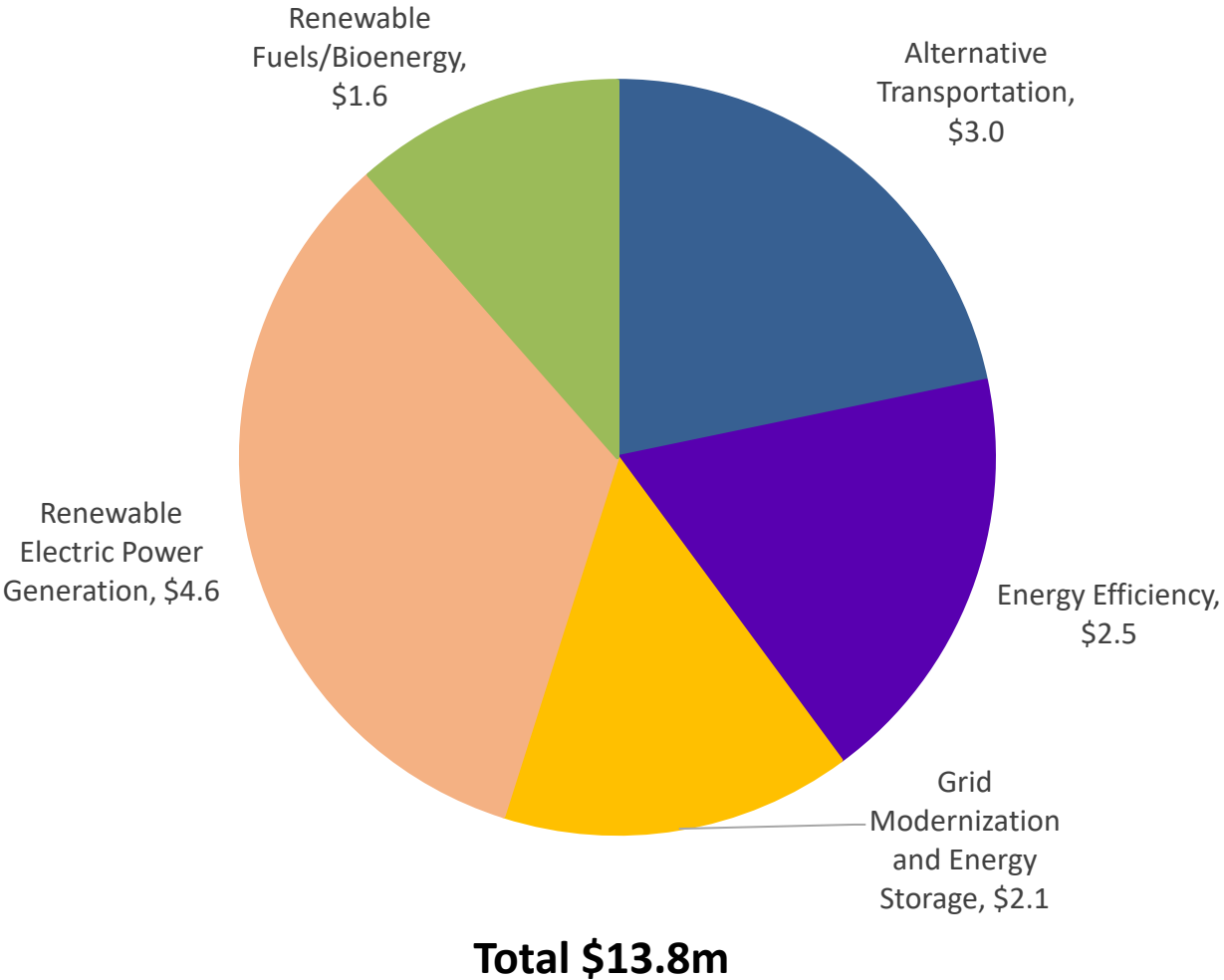


Binghamton Northeast Center for Chemical Energy Storage

Areas of Expertise

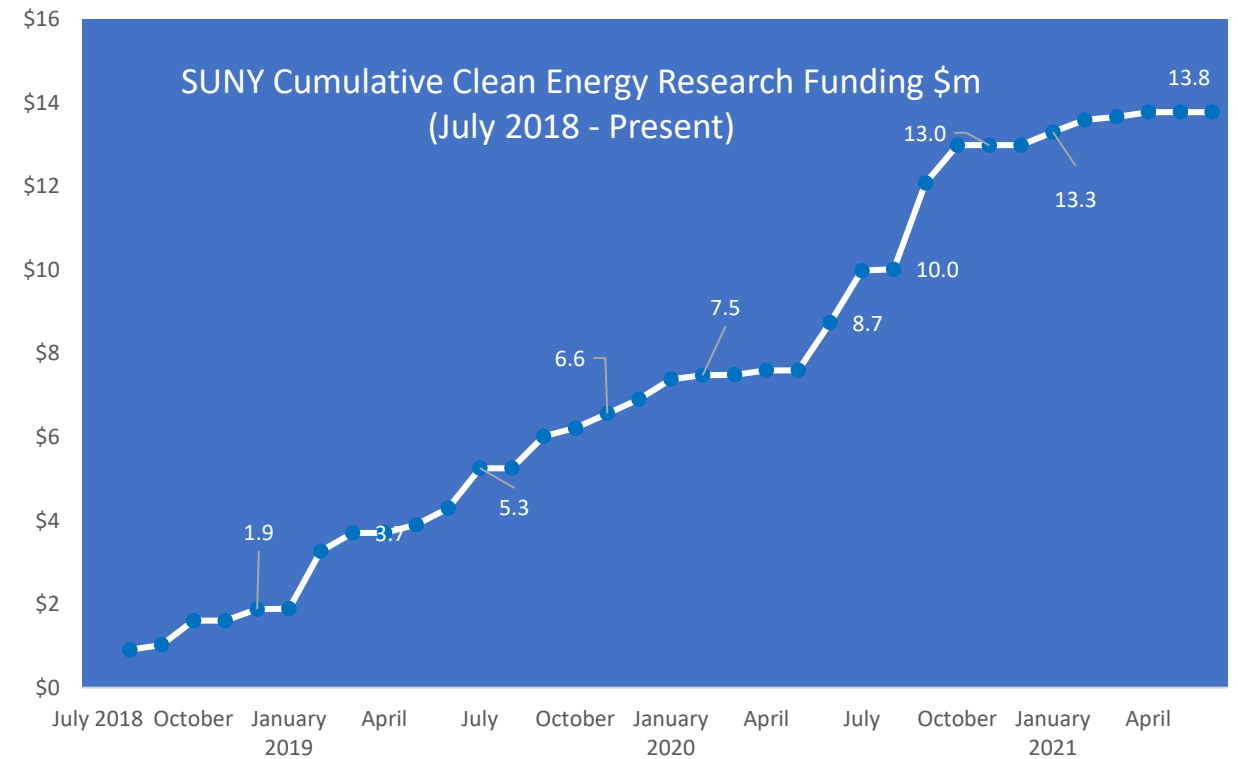
- Off Shore Wind Energy
- Photovoltaics Generation
- Fuel cells, Hydrogen Production
- Energy Storage: Batteries, Supercapacitors
- AI for Energy Optimization
- Energy Efficient Materials, Lighting
- Superconductors
- Smart grid
- Sensors
- Photocatalytic reduction of CO₂ to methanol
- Batteries Recycling Technology
- Clean Energy and Energy Storage Workforce Training Programs

SUNY Clean Energy Sponsored Research* (cumulative as of July 2021)



Other Clean Energy Funding categories (not included here):

- Entrepreneurship (\$6.6m)
- Community Support (\$0.3m)
- Education / Workforce Development (\$0.3m)
- Trial or Demonstration (\$4.4m)



* Amounts shown only include awards processed through the RF

The database of fossil fuel divestment commitments made by institutions worldwide

↓ [VIEW DATABASE](#)



\$39.88 TRILLION

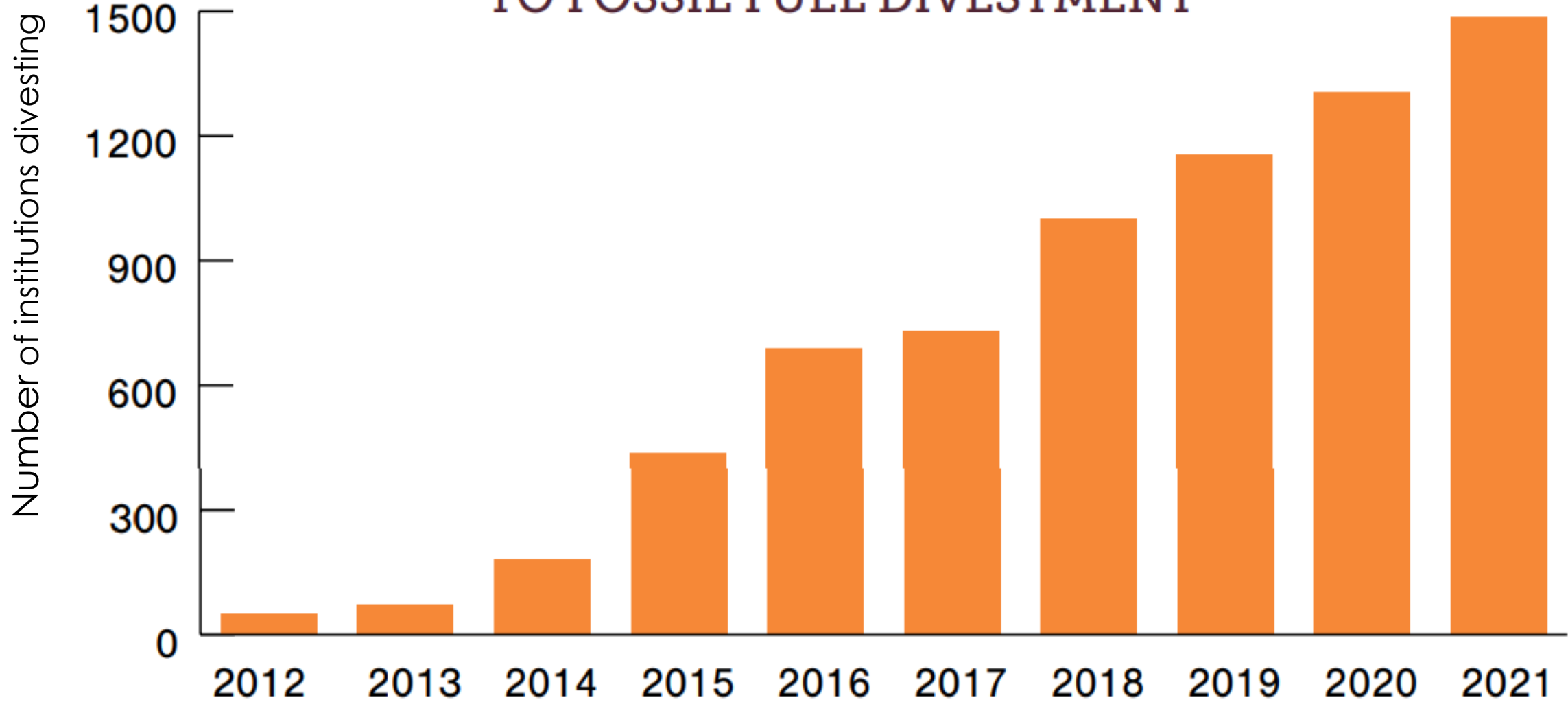
Approximate value of institutions divesting.

1500

Institutions Divesting

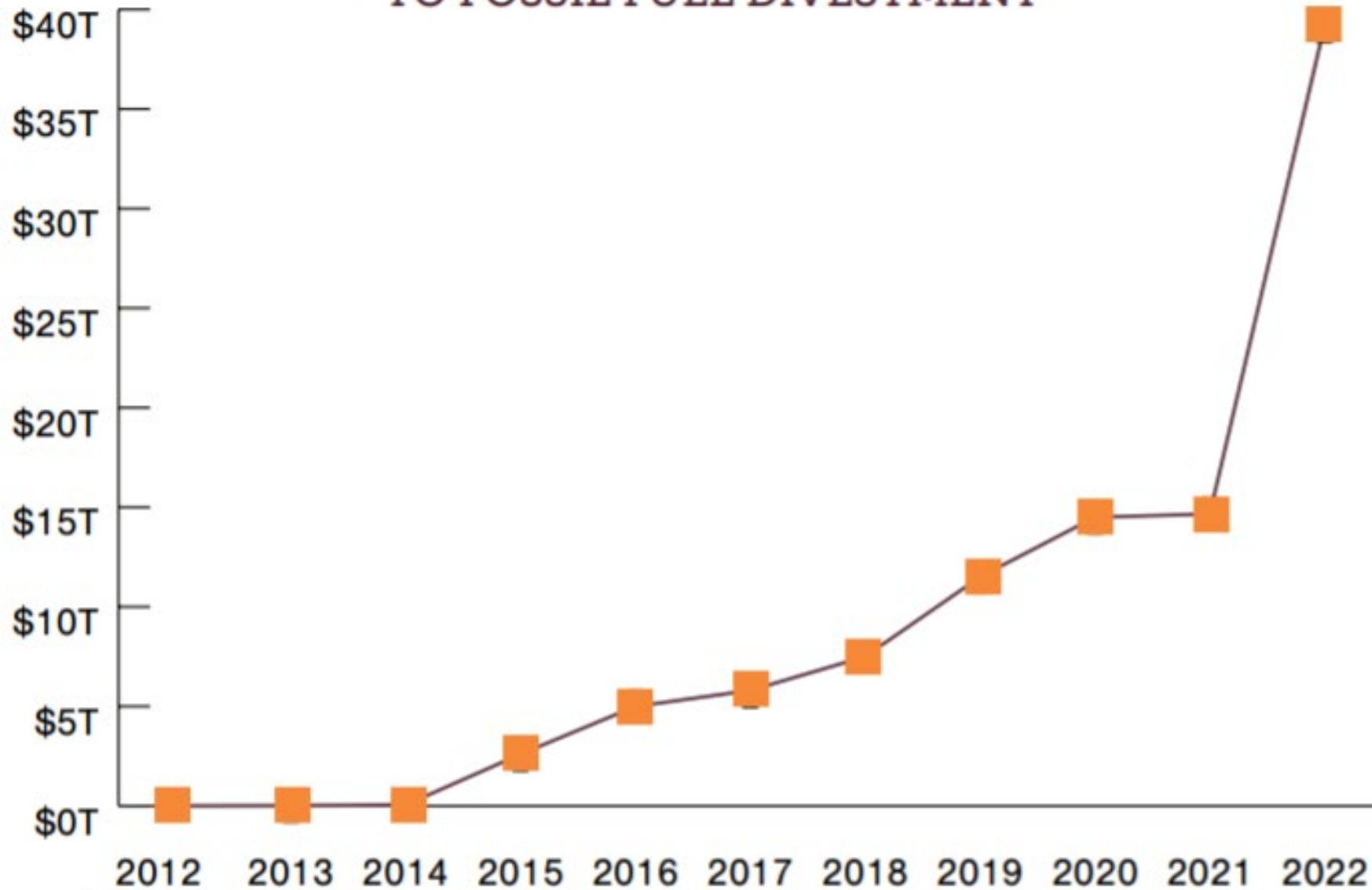
GROWTH IN DIVESTMENT COMMITMENTS

TOTAL PUBLIC INSTITUTIONAL COMMITMENTS TO FOSSIL FUEL DIVESTMENT



Source: Global Divestment Commitments Database

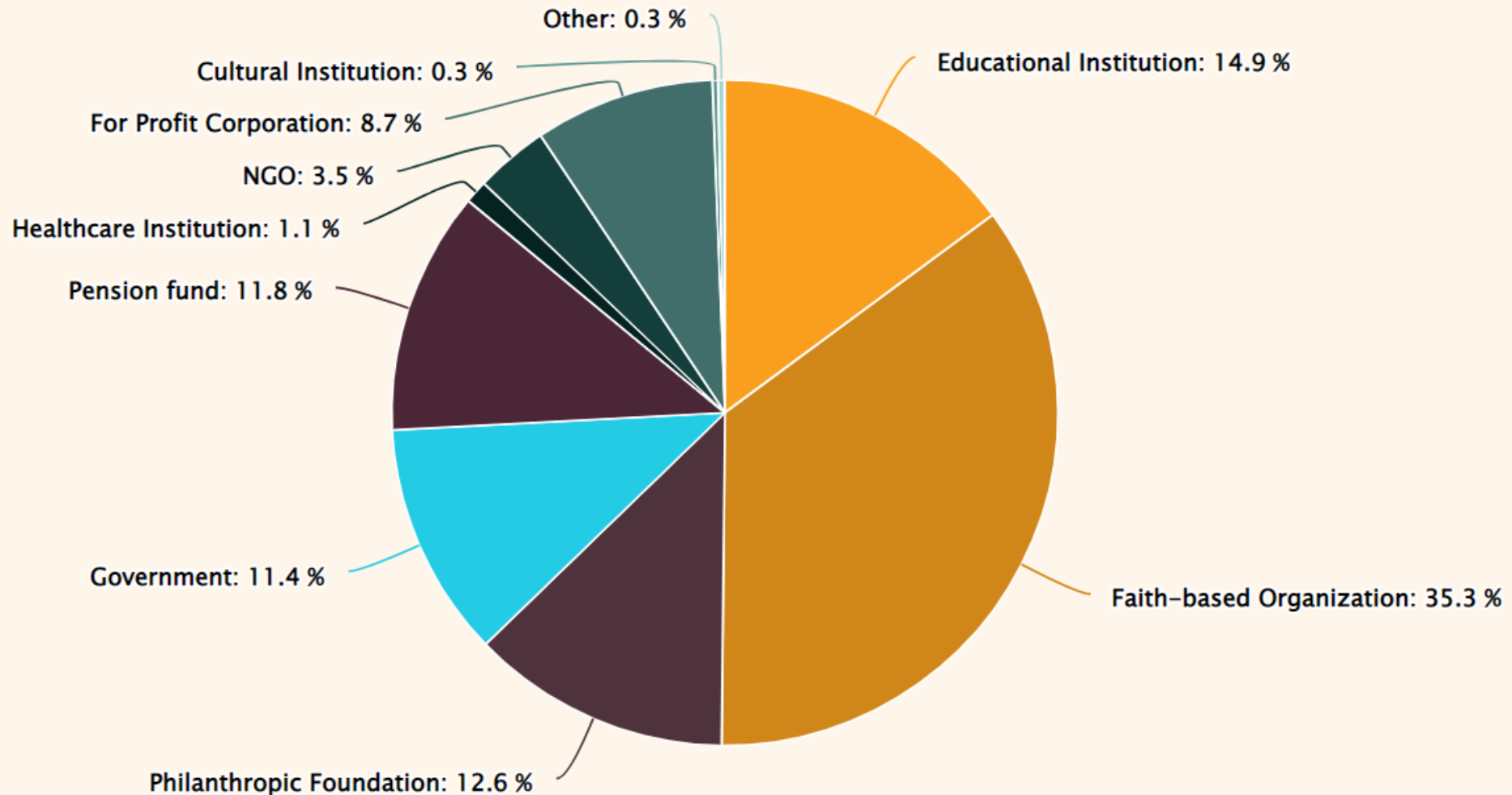
TOTAL ASSETS UNDER MANAGEMENT COMMITTED TO FOSSIL FUEL DIVESTMENT



* 2021 figures represent an update of some institutions' total assets under management. See Methodology section.

Source: Global Divestment Commitments Database

What kinds of institutions are divesting?



Clean Energy Master Plans

Campus Specific Plans

Orbiting Carbon Observatory-2
(OCO-2)

Incorporating facilities master plan needs, critical maintenance needs and a goal to eliminate fossil fuel use, these plans take a long term look at how to get SUNY to a carbon free future.

SHARED GOVERNANCE IN SUSTAINABILITY

The background of the slide is a collage of green-themed images. At the top, there's a grid of various green leaves and plants. Below that, a path winds through a dense forest. At the bottom right, a bird is captured in flight against a green background.

- **How to get better connected?**
- **Increasing engagement across campus sectors**
- **Increasing engagement with our communities**
- **How to better tell the story for all of SUNY?**



Reminder



APRIL 22



The SUNY Footprint and Examples of Sustainable Building Components

Presented to the University Faculty Senate
January 21, 2022

SUNY

THE PRIMARY SUNY CAPITAL PROGRAMS

		Number of Buildings ⁽¹⁾	Square Footage (in millions)	Average Age ⁽²⁾
STATE-OPERATED	Educational Facilities	1,830	63.1	51
	Hospitals	27	5.1	35
	Residence Halls	496	21.5	42
	Community Colleges	535	20.7	46
	TOTALS	2,888	110.4	48

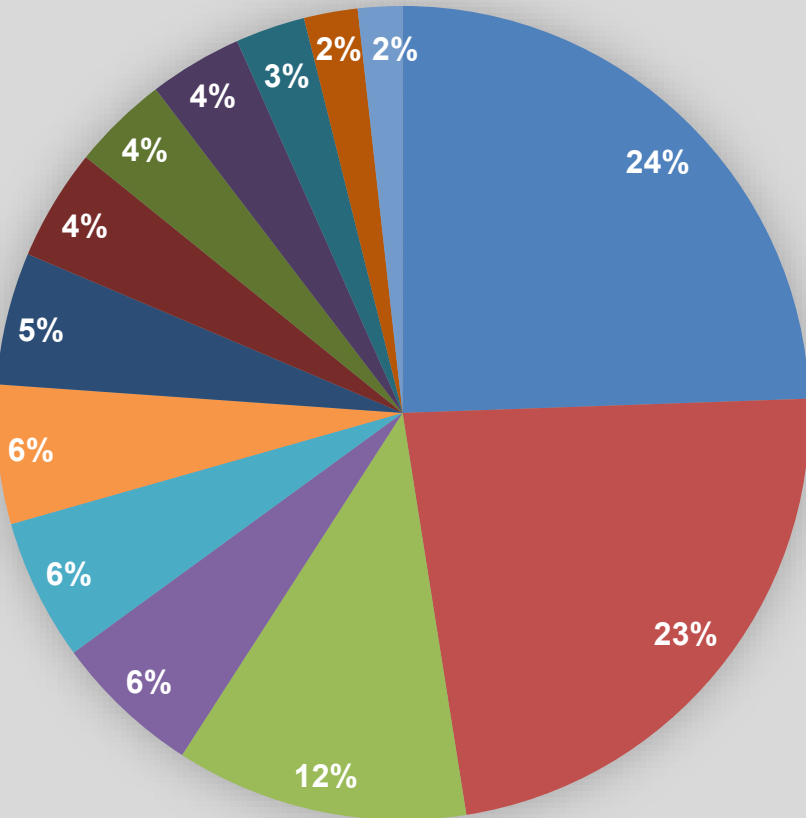
Notes: Data as of August 2021

⁽¹⁾ The SUNY footprint of 29 State-operated campuses, 5 statutory colleges, and 30 community colleges encompasses 2,900 buildings and over 100M square feet of space. The State-operated campus buildings represent more than 40% of all New York State-owned assets. This is second to only the NYS Department of Transportation, which is predominantly infrastructure.

⁽²⁾ Average age (in years) represents the straight average, with no consideration given to the size of buildings or subsequent renovations.

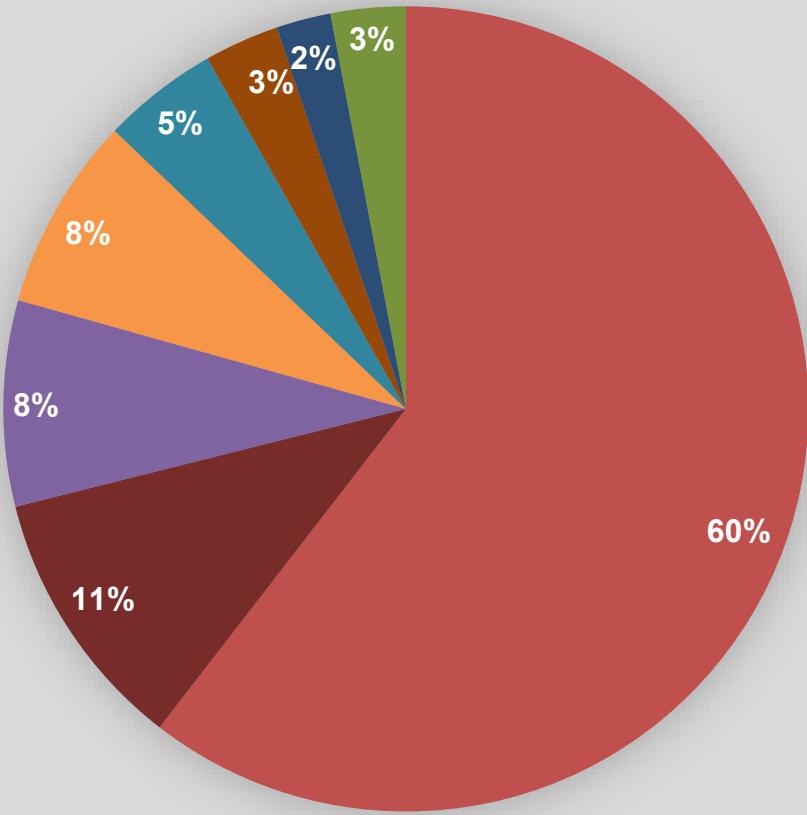
USE OF SPACE, BY GSF AND BY TYPE – UPDATES?

State-operated Campuses
86.8M GSF



- Residence Halls 24%
- Instruction 23%
- Organized Activities 12%
- Library 6%
- Organized Research 6%
- Athletics 6%
- Other 5%
- Student Service 4%
- Hospitals 4%
- Parking Structure 4%
- Administration 3%
- Maintenance 2%
- Dining 2%

Community Colleges
19.9M GSF



- Instruction 60%
- Student Service 11%
- Library 8%
- Athletics 8%
- Administration 5%
- Maintenance 3%
- Other 2%
- Physical Ed 3%

The background of the slide features a collection of architectural blueprints and rolled-up plans. The blueprints are spread out, showing various technical drawings with lines, dimensions, and annotations. Two large rolls of paper are prominently displayed, one in the foreground and another slightly behind it, both partially unrolled. The overall color palette is a light, cool blue, giving the image a professional and technical feel.

EXAMPLES OF SUSTAINABLE BUILDING COMPONENTS ON SUNY STATE-OPERATED CAMPUSES

The image features a background of architectural blueprints and several rolled-up white sheets of paper. The blueprints are filled with technical drawings, including floor plans, elevations, and sections, with various lines, dimensions, and alphanumeric labels. The rolled-up sheets are positioned diagonally across the frame, creating a sense of depth and focus on the design process. The overall color palette is a cool, light blue, which gives the image a professional and technical appearance.

BUILDING ENVELOPE

CURRENT DIRECTIVES & REQUIREMENTS - UPDATE



- NYS Executive Orders

No. 88 – Directed State Agencies and Authorities to Improve the Energy Efficiency of State Buildings

No. 4 - Established a State Green Procurement and Agency Sustainability Program

- SUNY Board of Trustees Requirements

Designing to LEED Silver



Binghamton

Insulated Windows and Improved Envelopes






Brockport

Insulated Roofs





Buffalo State

Green Roofs

Brockport



New Paltz



Solar Shades & Fritted Glass

University at Stony Brook



Spray Foam Insulation

The image shows a top-down view of architectural blueprints spread across a light-colored surface. In the foreground, three blueprints are rolled up into thick cylinders, arranged diagonally from the bottom center towards the top right. The blueprints themselves are filled with intricate technical drawings, including floor plans, sections, and details, with various lines, dimensions, and alphanumeric labels. The overall color palette is a cool, light blue, giving it a professional and technical appearance.

BUILDING SYSTEMS

Environmental Science and Forestry



Airside Energy Recovery





High Efficiency Chillers

Geneseo



Geothermal



Condensing Boiler

Environmental Science and Forestry



Biomass Boiler

Plattsburgh

High Performance Fume Hoods

New Paltz



Rainwater Harvesting

Binghamton



Construction and Demolition Waste Recycling

New Paltz



Interior LED Lighting

Brockport

Exterior LED Lighting

Environmental Science and Forestry



Steam Turbine Generator & Microturbines





Fuel Cell



Solar Domestic Hot Water

Buffalo State



Photovoltaic

Oswego



Wind Turbine

The image features a background of architectural blueprints spread across a surface. In the foreground, two white rolled-up blueprints are positioned diagonally, partially overlapping the background drawings. The blueprints are unrolled at the ends, showing the intricate lines and text of the plans. The overall color palette is a cool, light blue, giving it a professional and technical appearance.

LEED Certifications

Fredonia University Village

LEED PLATINUM



ESF: Gateway Center
Fredonia: University Village (5 Buildings)
Cortland: Dragon Hall



Oswego Tyler Hall

Oswego: Tyler Hall Rehabilitation
Fredonia: Science Technology Center
Albany: Mohawk Tower
Purchase: Humanities Building Renovation
New Paltz: LeFevre Hall Renovation
Oswego: Richard Shineman Center for Innovation
Albany: University Data Center
Binghamton: Dickinson Community
Oswego: Townhouses
Geneseo: Monroe Residence Hall
Brockport: MacVicar Hall Renovation
Brockport: SERC
Stony Brook: Nobel Halls Residence
Orange Newburgh Campus: Kaplan Hall
Brockport: Thompson Hall Renovation
ESF: Student Housing

LEED GOLD




Stony Brook Old Chemistry Building

LEED SILVER

- New Paltz: Old Main Renovation
- Buffalo State: Tower 1 Renovation
- Geneseo: Letchworth Dining Hall Renovation
- Buffalo State: Crossroads Culinary Center
- Albany: Service Building A/Annex
- Broome: Natural Science Center
- Stony Brook: Old Chemistry Building
- Canton: Convocation Athletic Rec Center
- Cobleskill: Frisbie Hall Renovation - Building 1



CHALLENGES

- 
- Affordability of capital in Residence Hall program
 - Lack of training in maintenance employees
 - Civil Service rules not updated to deal with today's technology
 - Community Colleges not controlled by State or by System Administration
 - Inability to include integrated design because of lack of Design-Build and Construction Manager at Risk authority