The University of Houston and the STARS Report: A Comparative Analysis of Reports v2.0 and v2.1

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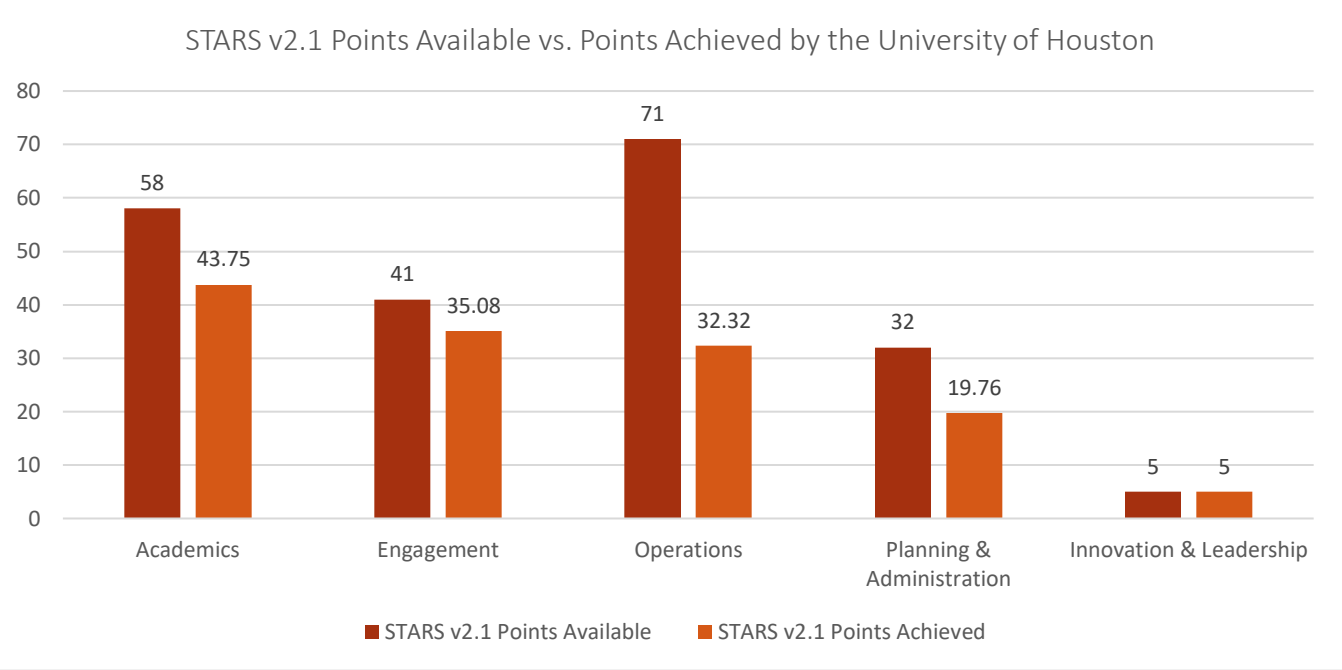
ABSTRACT

Is the University of Houston making progress on sustainability? The University tracks and measures its sustainability through the Sustainability Tracking, Assessment & Rating System (STARS), a self-reporting framework of the Association for the Advancement of Sustainability in Higher Education (AASHE). The latest reports published by the University are its v2.0 and v2.1 Reports. The two most recent STARS reports will be analyzed in a point-by-point manner, comparing both v2.0 and v2.1 by looking at the sections where a university may gain credits.



Most Successful Categories

1. Innovation & Leadership – 5.00/5.00
2. Engagement – 35.08/41.00

Least Successful Categories

1. Operations – 32.32/71.00
2. Planning & Administration – 19.76/32.00

Most Successful Subcategories

- Research – 16.00/18.00
- Public Engagement – 17.83/20.00
- Grounds – 3.00/4.00
- Diversity & Affordability – 9.04/10.00

Least Successful Subcategories

- Curriculum – 27.75/40.00
- Campus Engagement – 17.25/21.00
- Food & Dining – 2.00/8.00
- Investment & Finance – 1.08/7.00

Improvements from Reports v2.0 to v2.1

- The number of sustainability courses offered at the Graduate level increased from 39 to 46. [18% increase]
- The number of courses offered that include sustainability increased at the Undergraduate and Graduate level from 134 to 232 and 128 to 277, respectively. [73% increase, 116% increase]
- The number of academic departments (or the equivalent) that offer at least one sustainability course and/or course that includes sustainability (at any level) increased from 45 to 49. [9% increase] In 2011, this number was 37, when the university had 44 departments which offered courses.
- The AC-6: Sustainability Literacy Assessment section was not filled out in v2.0. In v2.1, the University of Houston pursued this credit by conducting its first Sustainability Literacy Survey.
- The number of academic departments (or the equivalent) that include at least one faculty or staff member that conducts sustainability research increased from 41.20 to 44. [7% increase]
- The number of continuing education courses offered that address sustainability increased from 22 to 166. [655% increase]
- Total third-party certified RECs, GOs and/or similar renewable energy products purchased in v2.0 totaled 83,656.80 MMBtu. This number equaled 171,096.20 MMBtu, in v2.1. [105% increase]
- The total clean and renewable electricity generated on site has increased over the past three reports. In v1.0, 0MMBtu were generated. This number increased to 75.85 MMBtu in v2.0, and again in v2.1, reaching 94.14 MMBtu. [24% increase]
- The number vehicles in the institution's fleet that were 100 percent electric in v2.0 was 102. The number vehicles in the institution's fleet that were 100 percent electric in v2.1 was 103 [1% increase]
- To make its dining operations more sustainable, the university established 4 initiatives in v2.1. These initiatives include a hydroponic garden, a farmers market, a campus kitchen, and a transition to bulk condiments in the dining halls. C

- The total percentage of students (graduate and undergraduate) that use more sustainable commuting options as their primary means of transportation was 45.30 in v2.1. This number is up from 38 percent in v2.0. [19% increase] C
- The total waste generated (and diverted) totaled 4,270.12 Tons in v2.1. 4,460.65 Tons were generated in v2.0. [4% decrease] 16% of the total waste generated in v2.1 was recycled. In v2.0, 17% of the total waste generated was recycled.

ACADEMICS – 43.75/58.00

Curriculum – 27.75/40.00 (**Least Successful Subcategory**) S

AC-1: Academic Courses – 9.10/14.00 R

Number of sustainability courses offered (Undergraduate and Graduate):	
v2.0: 26	v2.1: 20
v2.0: 39	v2.1: 46

The number of sustainability courses offered at the undergraduate level decreased from 26 to 20. [23% decrease] At the graduate level, the number of sustainability courses increased from 39 to 46. [18% increase]

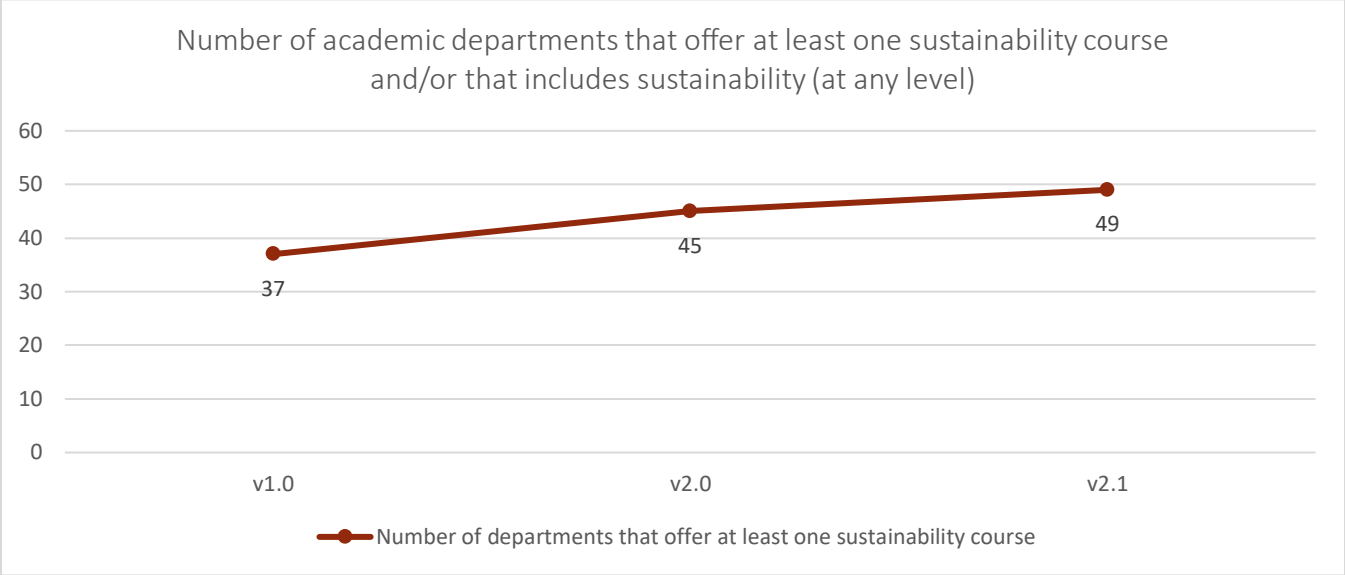
Number of courses offered that include sustainability (Undergraduate and Graduate):	
v2.0: 134	v2.1: 232
v2.0: 128	v2.1: 277

The number of courses offered that include sustainability increased at the Undergraduate and Graduate level from 134 to 232 and 128 to 277, respectively. [73% increase, 116% increase]

Percentage of courses that are sustainability course offerings	
v2.0: 4.16	v2.1: 7.76

Number of academic departments (or the equivalent) that offer at least one sustainability course and/or course that includes sustainability (at any level):	
v2.0: 45/54 (83.33)	v2.1: 49/54 (90.74%)

The number of academic departments (or the equivalent) that offer at least one sustainability course and/or course that includes sustainability (at any level) increased from 45 to 49. [9% increase] In 2011, this number was 37, when the university had 44 departments which offered courses. [See Figure below]



RECOMMENDATIONS: Integrate sustainability into the college curriculum by establishing an evidence-based sustainability curriculum – Promote the use of AASHE's definitions as a framework for creating courses in the future. The identification of a sustainability curriculum should make universities more able to link together existing sustainability courses and create new ones. Otherwise, thoroughly ensure that all courses that meet AASHE's criteria are recognized in the next STARS report (O'Byrne, Dripps, & Nicholas, 2014).

AC-2: Learning Outcomes – 0.65/8.00 R

Percentage of students who graduate from programs that have adopted at least one sustainability learning outcome:	
v2.0: 12.5	v2.1: 8.08

The low score for this credit is a reflection of the percentage of students that graduated from programs without at least one sustainability learning outcome. Hence, a higher score will be achieved when a higher percentage of students graduate from programs with at least one sustainability learning outcome.

The decrease in the percentage of students that graduate from programs which have adopted one sustainability learning outcome extends to the number of students, too. There was a significant decrease in the number of students who graduated from a program with at least one sustainability learning outcome. In v2.0, there were 1,074 students which had graduated from such programs. This number was down to 763 in v2.1. [29% decrease]

RECOMMENDATIONS: Ensure that more students adopt programs that have at least one sustainability learning outcome. The most effective way to do this would be to get the university to adopt an institution-wide sustainability learning outcome, so that all students that graduate will graduate with a sustainability learning outcome.

AC-3: Undergraduate Program – 3.00/3.00

AC-4: Graduate Program – 3.00/3.00

AC-5: Immersive Experience – 2.00/2.00

AC-6: Sustainability Literacy Assessment – 4.00/4.00

This was not filled out in v2.0. In v2.1, the University of Houston pursued this credit by conducting its first Sustainability Literacy Survey.

AC-7: Incentives for Developing Courses – 2.00/2.00

AC-8: Campus as a Living Laboratory – 4.00/4.00

Connections to the United Nations Sustainable Development Goals (SDGs): SDG 4: Quality Education and SDG 13: Climate Action

Research – 16.00/18.00 (**Most Successful Subcategory**) S

AC-9: Research and Scholarship – 12.00/12.00

The number of academic departments (or the equivalent) that include at least one faculty or staff member that conducts sustainability research increased from 41.20 to 44. [7% increase]

The number of the institution's faculty and/or staff engaged in sustainability research was 246 in v2.0, but was down to 148 in v2.1. [40% decrease]

AC-10: Support for Research – 4.00/4.00

AC-11: Open Access to Research – 0.00/2.00 R

The University of Houston does not have an open access policy that meets the criteria specified by the AASHE. However, there is a task force in the Faculty Senate which is developing an open access policy.

RECOMMENDATIONS: Adopt a policy committing the university to open-access research and encouraging self-archiving of scholarly articles in a shared repository service.

Connections to the United Nations Sustainable Development Goals (SDGs): SDG 9: Industry, Innovation and Infrastructure and SDG 16: Peace, Justice and Strong Institutions

ENGAGEMENT – 35.08/41.00 or 85.6%

CAMPUS ENGAGEMENT – 17.25/21.00 (**Least Successful Subcategory**) INC S

EN-1: Student Educators Program – 4.00/4.00 INC

EN-2: Student Orientation – 2.00/2.00 INC

EN-3: Student Life – 2.00/2.00 INC

EN-4: Outreach Materials and Publications – 2.00/2.00 INC

EN-5: Outreach Campaign – 4.00/4.00 C R

Sustainability-related outreach campaigns include involvement with Cougar First Impressions (through the #BYOBottle campaign), RecycleMania, and Cleanup Day

RECOMMENDATIONS: Challenge students to conserve energy in their dorms, as was done in CSU's "Faces of Conservation" campaign.

EN-6: Assessing Sustainability Culture – 1.00/1.00 INC

EN-7: Employee Educators Program – 0.00/3.00 C R

The university did not pursue this credit in both v2.0 and v2.1.

RECOMMENDATIONS: Hire a person to audit buildings and train employees on how to certify or comply with the Office of Sustainability's Green Office Program.

EN-8: Employee Orientation – 1.00/1.00

EN-9: Staff Professional Development – 1.25/2.00 C R

The university made available professional development and training opportunities in sustainability to all staff at least once per year in both v2.0 and v2.1. Estimated percentage of regular staff (full-time and part-time) that participates annually in sustainability professional development and training that is either provided or supported by the institution was between 1-24% in v2.1. Data for this field was not filled out in v2.0.

RECOMMENDATIONS: Develop an online training program to inform faculty and staff about sustainable behavior in the workplace and/or partner with the Wellness Department to incentivize faculty and staff to take the training courses related to each aspect of sustainability.

Connections to the United Nations Sustainable Development Goals (SDGs): SDG 4: Quality Education, SDG 12: Responsible Consumption and Production and SDG 13: Climate Action

PUBLIC ENGAGEMENT – 17.83/20.00 (**Most Successful Subcategory**) C S

EN-10: Community Partnerships – 3.00/3.00 INC

The University of Houston has formal community partnership with Urban Harvest, Citizens Environmental Coalition, and Dress for Success to advance sustainability. All of the partnerships supported focus on at least one dimension of sustainability.

EN-11: Inter-Campus Collaboration – 3.00/3.00 INC

The University of Houston is an active member of the Association for the Advancement of Sustainability in Higher Education (AASHE), the U.S. Green Building Council, and the Forest Stewardship Council

EN-12: Continuing Education – 5.00/5.00 INC

Number of continuing education courses offered that address sustainability:	
v2.0: 22	v2.1: 166

In v2.0, the percentage of continuing education courses that address sustainability was 11.11%. This number increased to 20.72 in v2.1. [86.5% increase]

The number of continuing education courses offered that address sustainability increased from 22 to 166. [655% increase]

EN-13: Community Service – 3.50/5.00 C

Percentage of students engaged in community service:		
v1.0: 38	v2.0: 55	v2.1: 50

EN-14: Participation in Public Policy – 1.33/2.00 C R

The university does not advocate for public policies that support campus sustainability or that otherwise advance sustainability at the municipal/local level nor at the international level. It does, however, advocate for such policies at the state and national level.

RECOMMENDATIONS: At the local level, the University of Houston should advocate for improvements to transportation infrastructure in Houston, as it would increase the use of public transportation and benefit the city as a whole. At the international level, the university should consider sending delegates to one of the many gatherings held by the United Nations. The university could also issue a statement ahead of one these gatherings, urging them to consider some aspect of sustainability.

EN-15: Trademark Licensing – 2.00/2.00 C

The institution is a member to the Worker Rights Consortium but not the Fair Labor Association.

RECOMMENDATIONS: To ensure that apparel bearing the university's logo is made under fair working conditions, and consequently promote health, safety, and secure livelihoods for domestic and global workers, the University of Houston should join the Fair Labor Association.

Connections to the United Nations Sustainable Development Goals (SDGs): SDG 1: No Poverty, SDG 4: Quality Education, SDG 8: Decent Work and Economic Growth, SDG 11: Sustainable Cities and Communities, SDG 12: Responsible Consumption and Production, SDG 16: Peace, Justice and Strong Institutions, and SDG 17: Partnerships for the Goals

OPERATIONS – 32.32/71.00 or 45.5 (**Least Successful Category**)

a. Air & Climate – 4.47/11.00 C S R

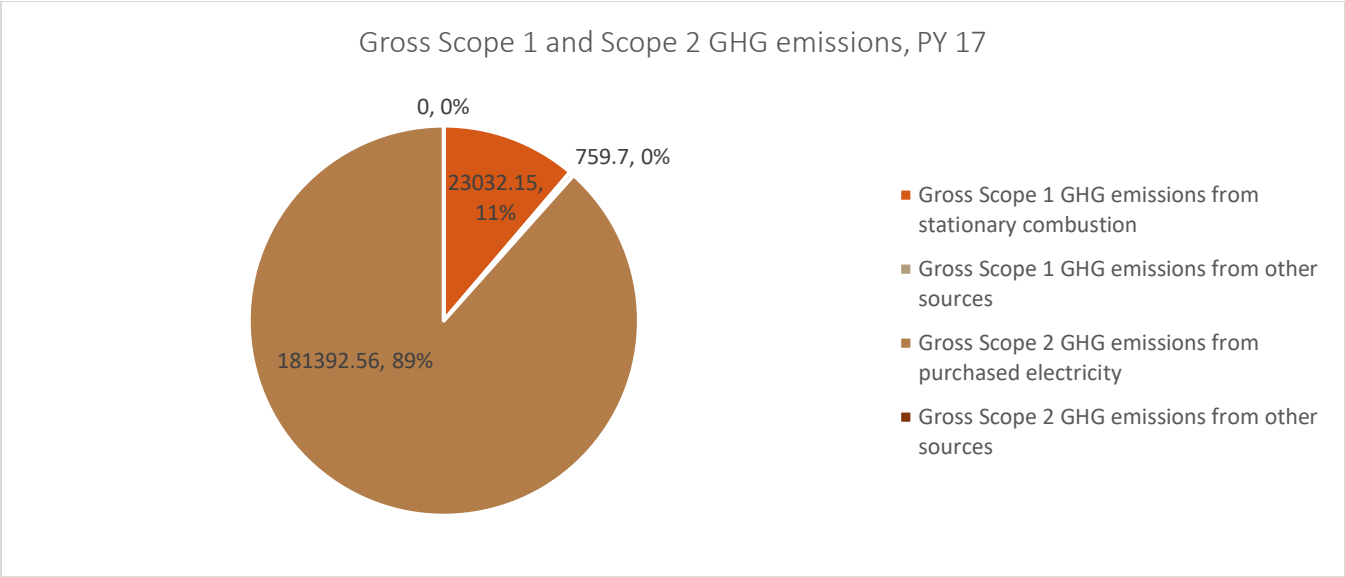
*OP 1: Greenhouse Gas Emissions (*Now *Emissions Inventory and Disclosure)* – 3.47/10.00 (Now 3 points) C R

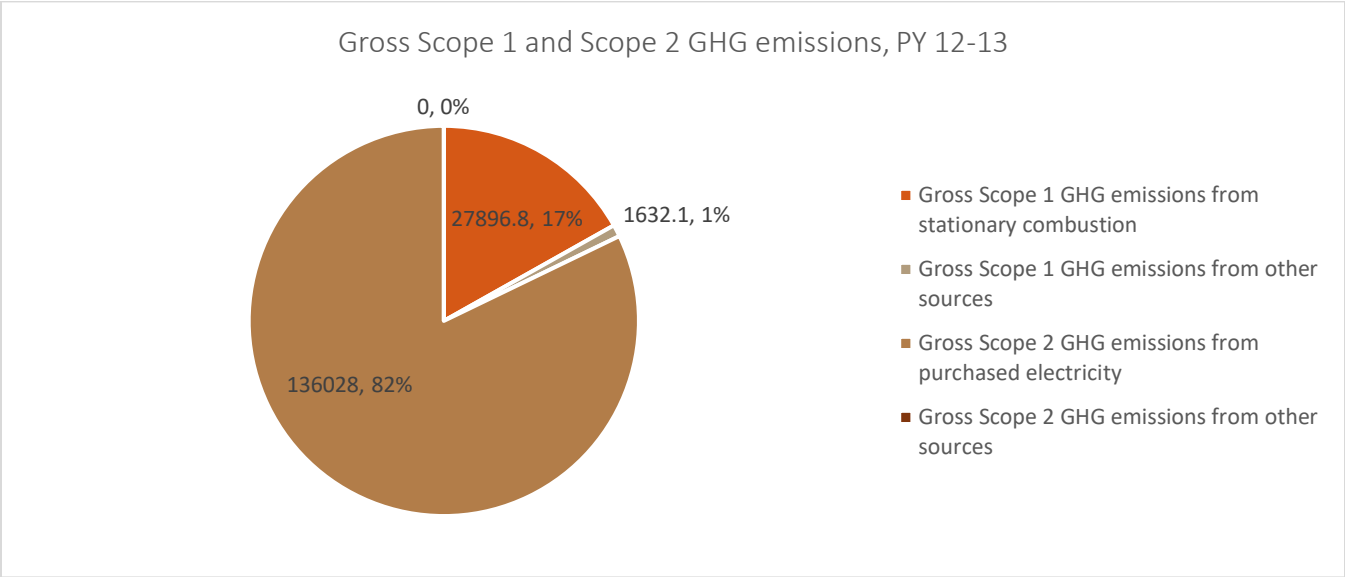
Total GHG emissions (in Metric Tons of C02 Equivalent):	
v2.0 (PY 12-13): 267219.6	v2.1 (PY 17): 316422.21

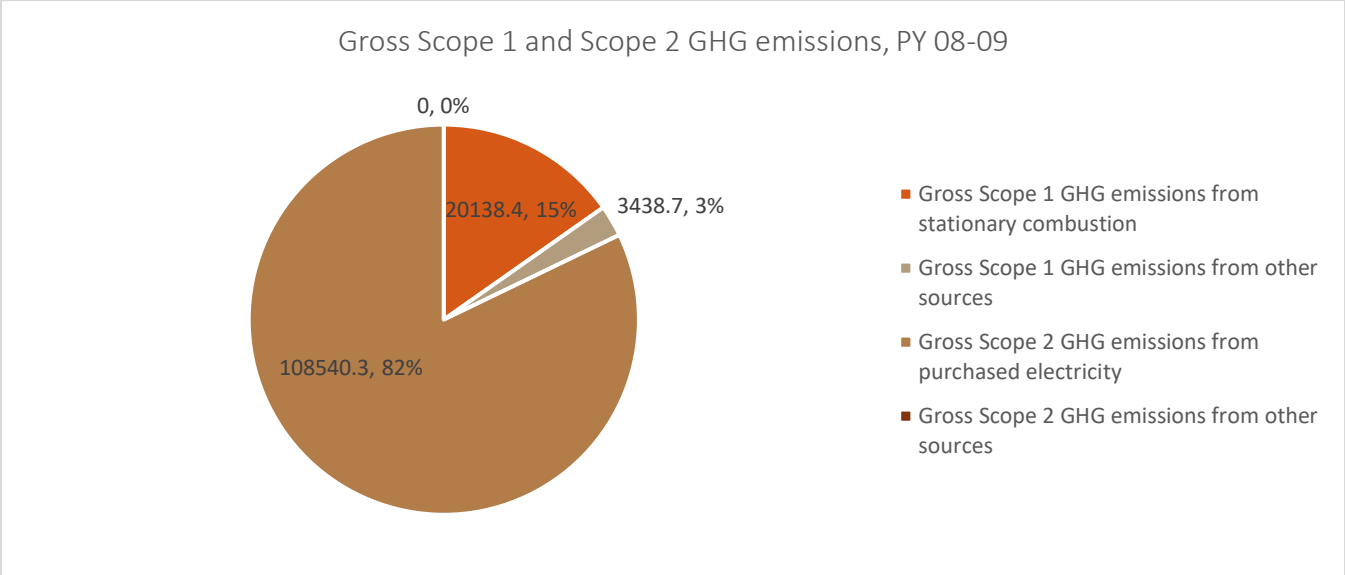
Total GHG emissions for v2.0 totaled 267,219.6 Metric Tons of CO2 Equivalent. Total emissions in v2.1 totaled 316,422.21 MtCO2e. [18% increase]

Gross Scope 1 and Scope 2 GHG emissions (in Metric Tons of C02 Equivalent):		
v1.0 (PY): 140530	v2.0 (PY 12-13): 165556.9	v2.1 (PY 17): 205184.41

Gross Scope 1 and Scope 2 GHG emissions totaled 165,556.9 Metric Tons of CO2 Equivalent in v2.0 and 205,184.41 Metric Tons of CO2 Equivalent in v2.1. [24% increase] The largest share of Gross Scope 1 and Scope 2 GHG emissions belongs to Gross Scope 2 GHG emissions from purchased electricity at 181392.56 Metric Tons of CO2 Equivalent. This is vital data for arguing for solar changeover.

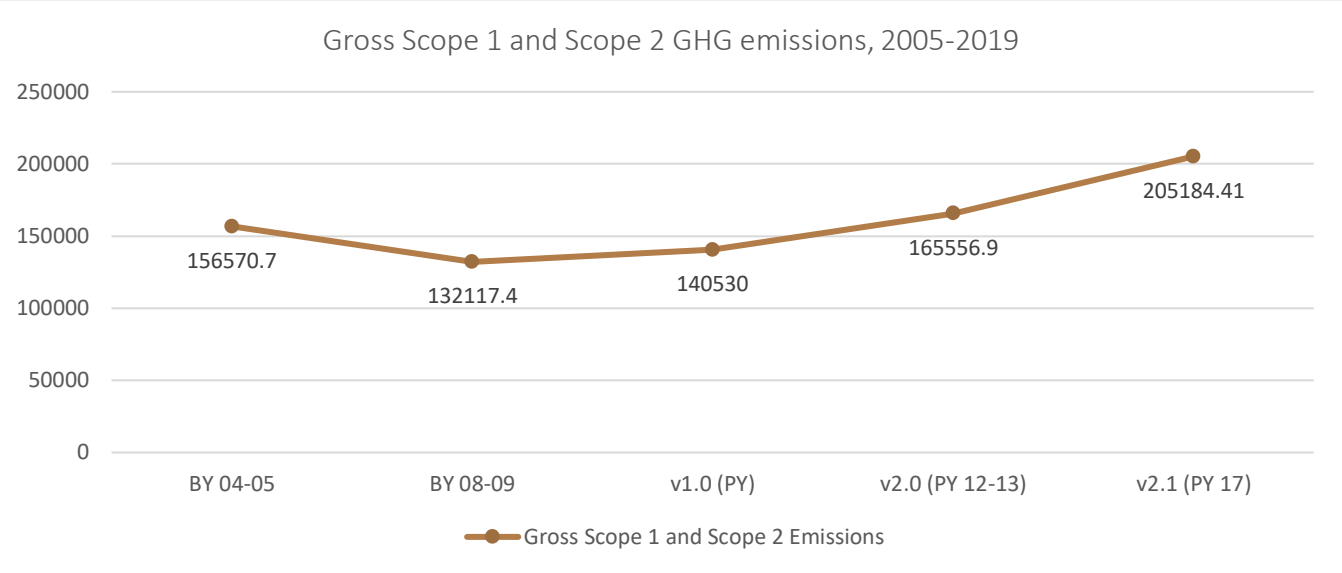






Gross Scope 1 and Scope 2 GHG emissions totaled 132,117.40 Metric Tons of CO2 Equivalent for the Baseline Year (Fiscal Year 2009). In relation to the Baseline Year, this represents a 55% increase in emissions for this category.

Between PY 12-13 to PY 17, Gross Scope 2 GHG emissions from purchased electricity increased its GHG emissions share for Gross Scope 1 and 2 emissions from 82% to 89%. In other words, emissions in this category are increasingly coming from the electricity purchased by the university. However, this increase in share didn't develop until the time between PY 12-13 and PY 17. Between PY 08-09 and PY 12-13, the share of GHG emissions coming from purchased electricity remained the same.

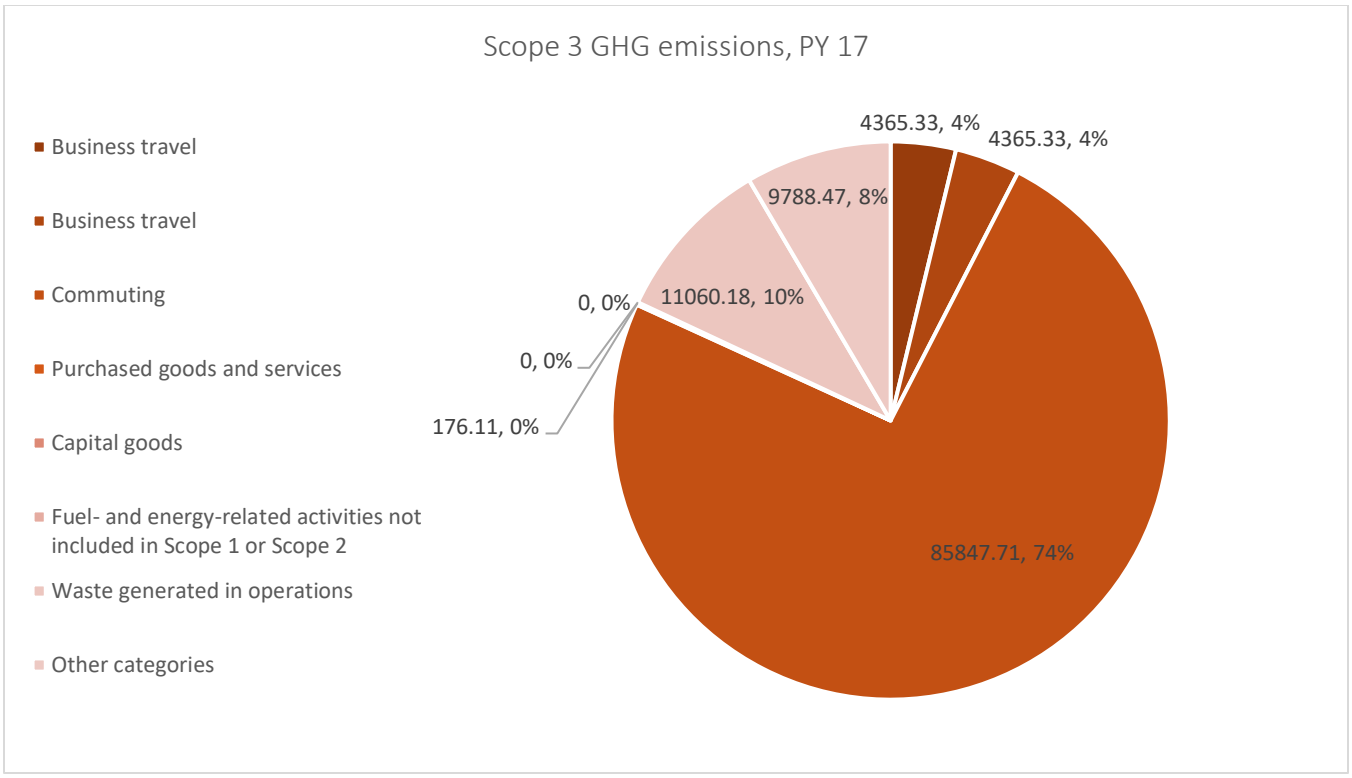


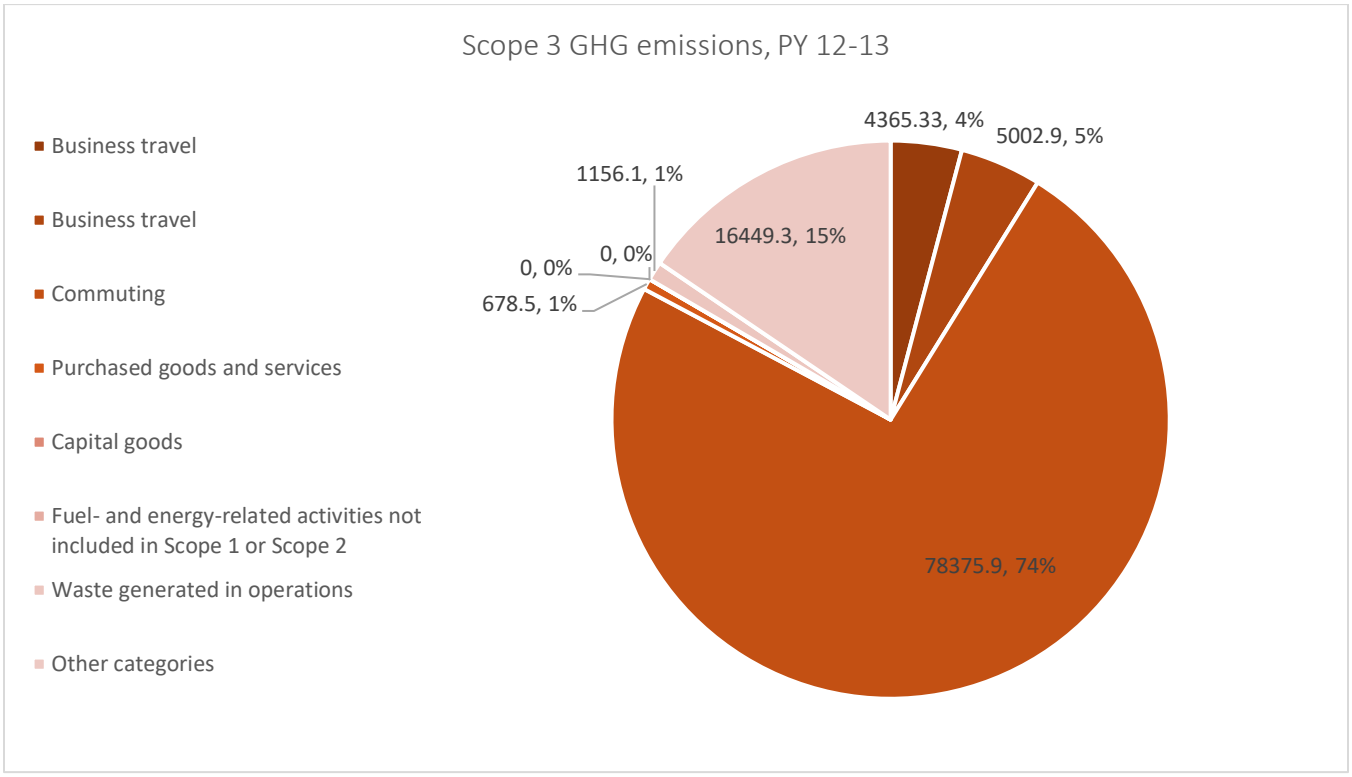
Scope 3 GHG emissions (in Metric Tons of C02 Equivalent):	
v2.0 (PY 12-13): 101,662.7	v2.1 (PY 17): 111,237.8

Scope 3 emissions in v2.1 totaled 111,237.8 MtCO2e but 101,662.7 MtCO2e in v2.0. [9% increase] Although all Scope 1 and 2 emissions were accounted for in v2.0 and v2.1, data for Scope 3 emissions has been lacking. This should be kept in mind, as it presents a limitation on this analysis.

Scope 3 GHG emissions, Purchased goods and services:	
v2.0 (PY 12-13): 678.5	v2.1 (PY 17): 176.11

Purchased goods and services include food, paper, office supplies, furniture, computers, telephones, travel services, outsourced administrative functions, consulting services, and janitorial and landscaping services. GHG emissions from Purchased goods and services significantly decreased, however only "some" emissions were reported for this performance year.


Scope 3 GHG emissions, PY 17
Business travel
Business travel
Commuting
Purchased goods and services
Capital goods
Fuel- and energy-related activities not included in Scope 1 or Scope 2
Waste generated in operations
Other categories
4365.33, 4%
4365.33, 4%
9788.47, 8%
11060.18, 10%
0, 0%
0, 0%
176.11, 0%
85847.71, 74%


Scope 3 GHG emissions, PY 12-13
Business travel
Business travel
Commuting
Purchased goods and services
Capital goods
Fuel- and energy-related activities not included in Scope 1 or Scope 2
Waste generated in operations
Other categories
4365.33, 4%
5002.9, 5%
1156.1, 1%
16449.3, 15%
0, 0%
0, 0%
678.5, 1%
78375.9, 74%

The share of emissions for Commuting in Scope 3 GHG emissions has remained unchanged from v2.0 to v2.1 or from PY 12-13 to PY 17. Overall, Commuting made up 29% of Total emissions in v2.0 and 27% in v2.1.

RECOMMENDATIONS: Adopt a climate action plan and a policy on sustainable practices, which universities like the University of California, Irvine have adopted, to commit the University of Houston to reduce carbon emissions below levels for a chosen baseline year. The university could partner with the City of Houston (who are in the process of developing a climate action plan) and join them in reducing their emissions.

*OP-2: Outdoor Air Quality (*Now *Greenhouse Gas Emissions)* – 1.00/1.00 (Now 8 points) C

Inventory of significant air emissions from stationary campus sources (Nitrogen oxides (NOx)):	
v2.0: 2.10 Tons	v2.1: 2.10 Tons

Air emissions from stationary sources totaled 2.10 Tons of Nitrogen oxides (NOx) in v2.1. Emissions from stationary sources totaled 2.10 Tons of Nitrogen oxides (NOx) in v2.0. [0% change]

NOx is a generic term for the various oxides of nitrogen. NOx emit from combustion-related emissions, such as "fossil fuel combustion in electric utilities, high-temperature operations at other industrial sources, and operation of motor vehicles" (EPA, 2018). The greatest source of anthropogenic NOx emissions in the U.S. is caused by on-road vehicles (EPA, 2018).

Connections to the United Nations Sustainable Development Goals (SDGs): SDG 3: Good Health and Well-Being, SDG 7: Affordable and Clean Energy, SDG 11: Sustainable Cities and Communities, and SDG 13: Climate Action

b. Buildings – 3.25/8.00 C S

OP-3: Building Operations and Maintenance – 2.00/5.00 C R

RECOMMENDATIONS: Create an operations and maintenance program that considers energy use, water use, environmental footprint, waste, indoor environmental quality, materials, and also the well-being of the people that will be using these buildings. The university should pursue LEED certifications of its buildings and/or operate and maintain its buildings according to guidelines and policies which consider criteria such as Indoor air quality (IAQ) management policy or protocol; Green cleaning policy, program or contract; Energy management or benchmarking program; and/or Water management or benchmarking program.

OP-4: Building Design and Construction – 1.25/3.00 C R

RECOMMENDATIONS: Create a policy mandating that buildings designed, built and renovated use a framework which considers both human and environmental health. One effective option would be to integrate sustainability into the university's master plan. The most recent update on the master plan

shows that the university has goals and initiatives to meet those goals, but no comprehensive framework for future development, let alone sustainable development.

Connections to the United Nations Sustainable Development Goals (SDGs): SDG 3: Good Health and Well-Being, SDG 6: Clean Water and Sanitation, SDG 7: Affordable and Clean Energy, SDG 9: Industry, Innovation and Infrastructure, SDG 11: Sustainable Cities and Communities, and SDG 12: Responsible Consumption and Production

c. Energy – 4.29/10.00 S

OP-5: Building Energy Consumption (STARS 2.2: *OP-5: Building Energy Efficiency*) – 3.88/6.00 C

Buildings are usually the largest user of energy and the largest source of greenhouse gas emissions on campuses. In terms of energy, 1 BTU is equal to "the amount of energy in the tip of a match" (Wilcoxen, 2009). A quadrillion BTU is equal to "the amount of energy in 45 million tons of coal, or 1 trillion cubic feet of natural gas, or 170 million barrels of crude oil" (Wilcoxen, 2009).

Total building energy consumption:	
v2.0 (2014): 1,563,649.85 MMBtu	v2.1 (2017): 2,093,971.36 MMBtu

The total building energy consumption by the University of Houston in v2.0 was 1,563,649.85 MMBtu. The total building energy consumption in v2.1 was 2,093,971.36 MMBtu. [34% increase]

For v1.0, this number was 700,189.69 MMBtu. [199% overall increase] This might be due to increased building square footage. Compare these numbers with the square footage included, as we might be decreasing our building energy consumption per square foot.

There are 5.8 MMBtu per bbl (barrel of oil). This means that the total building energy consumption by the University of Houston equaled 361,029.5 barrels of oil in 2017. The amount of CO2 in one barrel of oil is 0.43 metric tons. Thus, if the University of Houston sourced its building energy entirely from oil, it would have contributed 155,242.7 metric tons of CO2 in 2017. Because the university sources some of its building energy (94.14 MMBtu) from on-site renewables, we can decrease this number to 155,235.7 metric tons of CO2.

In total, 29,516 barrels of oil, or 12,692 metric tons of CO2, were avoided because of the renewable energy generated onsite and purchased by the university. For reference, the typical passenger vehicle emits 4.71 metric tons of CO2 annually. This means that the amount of CO2 emissions avoided was equivalent to taking 2,694.63 vehicles off the road.

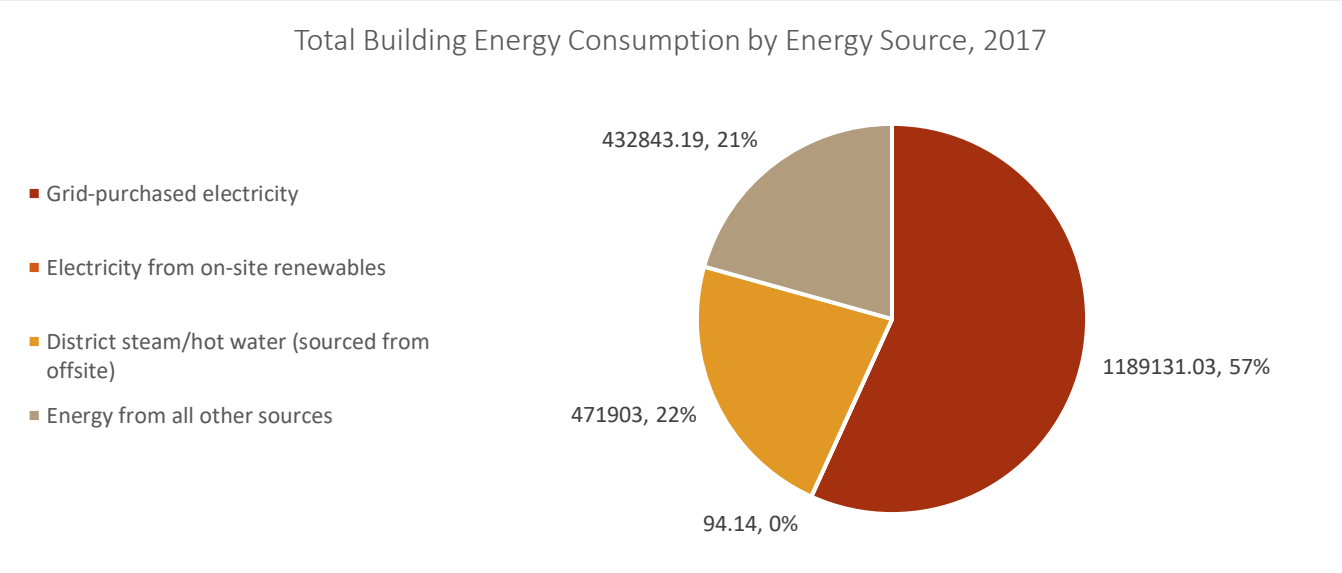
5.80 MMBtu per barrel
0.43 metric tons of CO2/barrel

Total energy consumption = 2,093,971.36 MMBtu
2,093,971.36 MMBtu / 5.8 MMBtu = 361,029.54 barrels of oil
361,029.54 barrels of oil x 0.43 metric tons of CO2 = 155,242.70 metric tons of CO2
Total metric tons of CO2 (if all energy was sourced from oil) = 155,242.70 metric tons of CO2

Total clean and renewable energy = 94.14 (onsite) + 171,096.20 (purchased) = 171,190.34 MMBtu
171,190.34 MMBtu / 5.8 MMBtu = 29,515.58 barrels of oil
29,515.58 barrels of oil x 0.43 metric tons of CO2 = 12,691.70 metric tons of CO2
Total metric tons of CO2 (if all energy was sourced from oil, and if both onsite and purchased clean and renewable energy are accounted for): 12,691.70 metric tons of CO2

4.71 metric tons CO2E/vehicle /year
12,691.70 metric tons of CO2 / 4.71 metric tons CO2E/vehicle /year = 2,694.63 passenger vehicles

Source: (EPA, 2018)

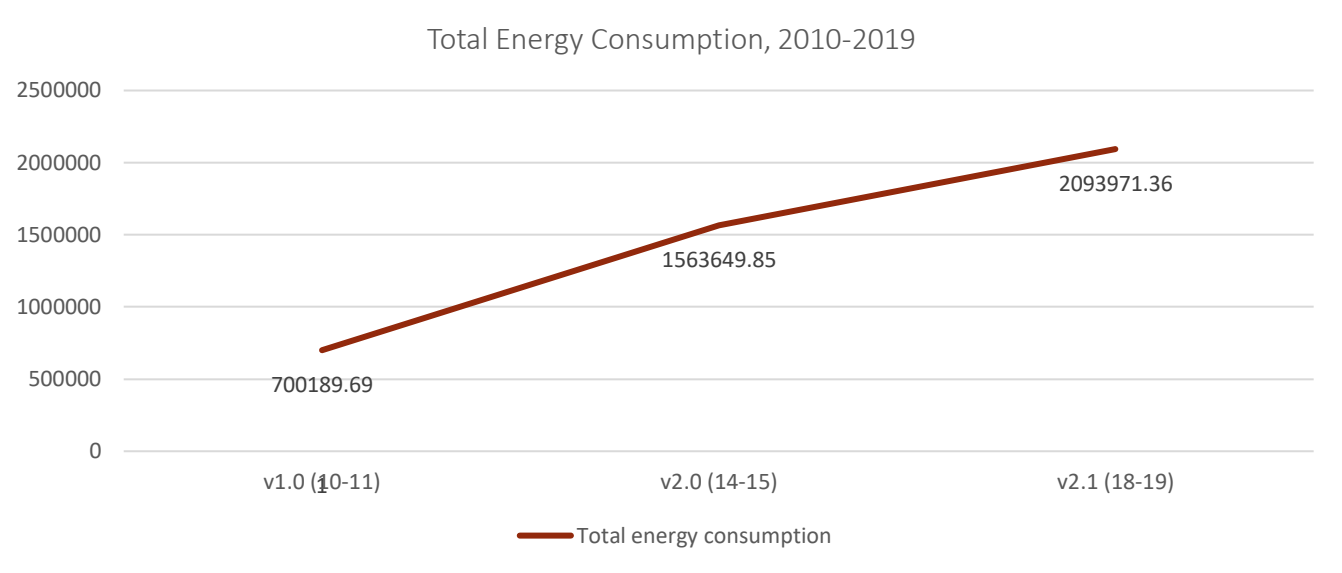


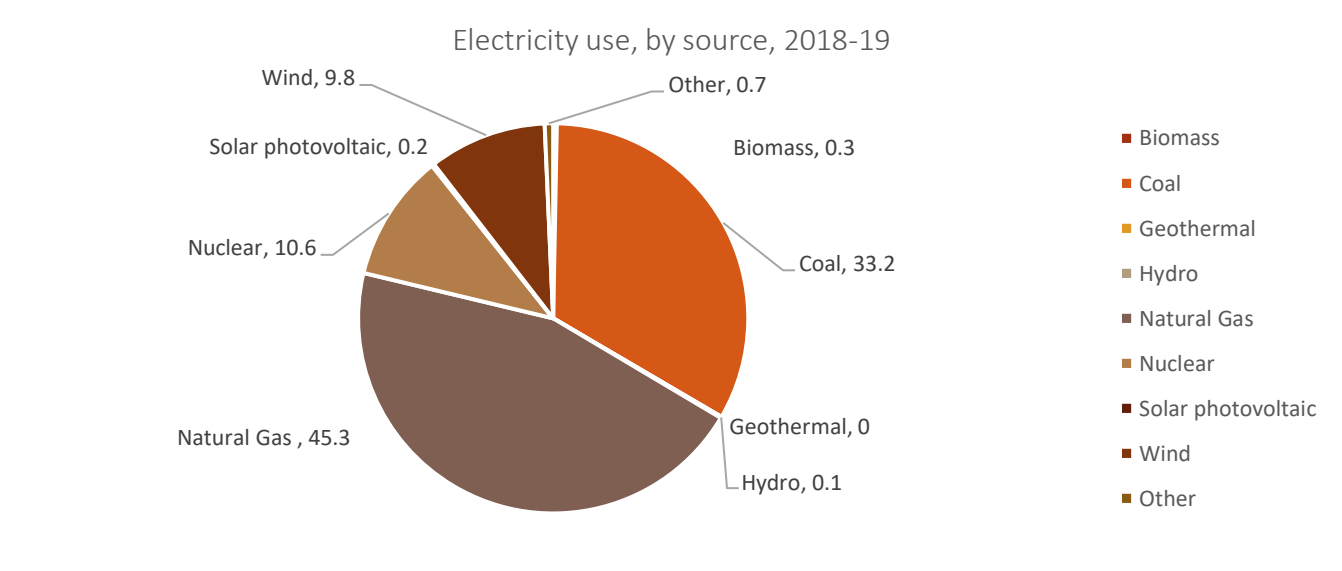
In 2018, total U.S. primary energy consumption per person (or per capita consumption) was about 310 million British thermal units (Btu) (U.S. Energy Information Administration, 2019)

OP-6: Clean and Renewable Energy – 0.41/4.00 (10%)

Total energy consumption (all sources, excluding transportation fuels), performance year :	
v2.0: 1,563,649.85 MMBtu	v2.1: 2,093,971.36 MMBtu

Total energy consumption (all sources, excluding transportation fuels) in v2.1 was 2,093,971.36 MMBtu. This was 1,563,649.85 MMBtu in v2.0. [34% increase] The total energy consumed in v1.0 was 700,189.68 MMBtu.





Percentage of total energy consumption from clean and renewable sources:	
v2.0: 5.4	v2.1: 8.2

The percentage of total energy consumption from clean and renewable sources totaled 8.2 in v2.1. This number totaled 5.4 in v2.0. [52% increase] In both reports, wind has comprised the majority of clean and renewable sources.

Total third-party certified RECs, GOs and/or similar renewable energy products (including renewable electricity purchased through a utility-provided certified green power option) purchased during the performance year:	
v2.0: 83,656.80 MMBtu	v2.1: 171,096.20 MMBtu

Total third-party certified Renewable Energy Certificates (RECs), Guarantee of Origins (GOs) and/or similar renewable energy products purchased in v2.0 totaled 83,656.80 MMBtu. This number amounted to 171,096.20 MMBtu in v2.1. [105% increase]

The total clean and renewable electricity generated on site has increased over the past three reports. In v1.0, 0MMBtu were generated. This number increased to 75.85 MMBtu in v2.0, and again in v2.1, reaching 94.14 MMBtu. [24% increase]

Connections to the United Nations Sustainable Development Goals (SDGs): SDG 7: Affordable and Clean Energy and SDG 13: Climate Action

d. Food & Dining – 2.00/8.00 (**Least Successful Subcategory**, Ranked 190 out of 327)

Food and Beverage Purchasing – 0.00/6.00

The percentage of dining services food and beverage expenditures that are local and community-based and/or third party verified was 16.43 in v2.0. This percentage was down to 0 in v2.1. [100% decrease] What qualified as “Local and Community-Based” changed for v2.1. As a result, the university could no longer qualify for this criteria. [GD]

The percentage of food expenditures that met one or more of the stated criteria for v1.0 was 5%. [100% decrease] See the above comment by GD, to understand this decline.

Sustainable Dining – 2.00/2.00

To make its dining operations more sustainable, the university established 4 initiatives in v2.1. These initiatives include a hydroponic garden, a farmers market, a campus kitchen, and a transition to bulk condiments in the dining halls.

e. Grounds – 3.00/4.00 (**Most Successful Subcategory**)

Landscape Management – 1.00/2.00

Biodiversity – 2.00/2.00

f. Purchasing – 3.78/6.00

Sustainable Procurement – 2.00/3.00

The University of Houston supports and encourages Historically Underutilized Businesses (HUBs). This is stated in the university's System Administrative Memoranda (SAM). Chartwells, the service provider for the University Master Food Service Agreement, has a variety of policies relating to sustainable business practices.

Recommendations: Sustainable Procurement at the university considers disadvantaged businesses and social and environmental responsibilities, but not recycled consumer waste in its procurement. In the future, the university should have a stated preference for preference for post-consumer recycled or bio-based content or to otherwise minimize the negative environmental impacts of products and services. It should employ a Life Cycle Cost Analysis (LCCA) when evaluating energy- and water-using products and systems (e.g., HVAC systems).

Electronics Purchasing – 1.00/1.00

Cleaning and Janitorial Purchasing – 0.63/1.00

OP-14: Office Paper Purchasing – 0.15/1.00

Percentage of expenditures on office paper that is 90-100 percent post-consumer recycled and/or agricultural residue content and/or FSC Recycled label:	
v2.0: 0	v2.1: 8.27

The University of Houston purchases 8.27% of its office paper with post-consumer recycled, agricultural residue, and/or Forest Stewardship Council (FSC) certified content.

Transportation – 3.56/7.00 (Ranked 180 out of 327) R

OP-15: Campus Fleet – 0.21/1.00

Number of vehicles in the institution's fleet that are: 100 percent electric:	
v2.0: 102	v2.1: 103

The number vehicles in the institution's fleet that were 100 percent electric in v2.0 was 102. The number vehicles in the institution's fleet that were 100 percent electric in v2.1 was 103 [1% increase]

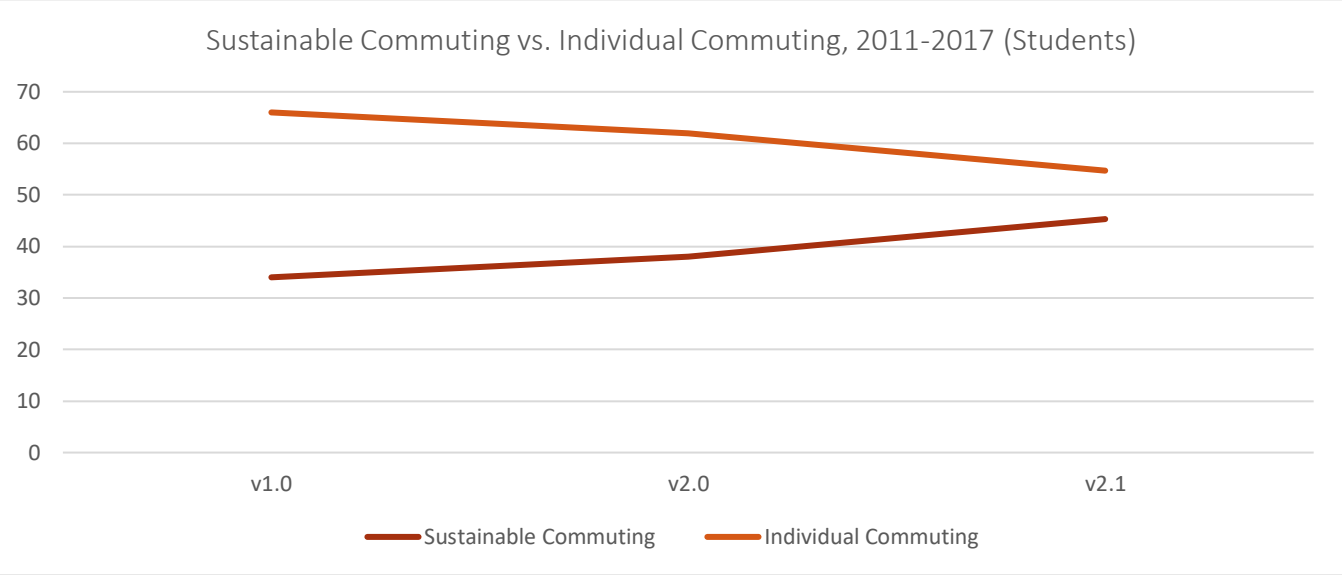
OP-16: Student Commute Modal Split (Now OP-16: Commute Modal Split and worth 5 points) – 0.91/2.00 C

Total percentage of students (graduate and undergraduate) that use more sustainable commuting options as their primary means of transportation:		
v1.0: 34	v2.0: 38	v2.1: 45.3

The total percentage of students (graduate and undergraduate) that use more sustainable commuting options as their primary means of transportation was 45.30 in v2.1. This number is up from 38 percent in v2.0. [19% increase]

The COAST program (which is organized by UH Parking and Transportation Services) may explain this increase. The program was launched in 2016 and was able to sign-up 1,918 students in its first year (UH Parking and Transportation Services, 2017). As of 2018, the program boasts nearly 3,000 members. This has offset the need for at least one future parking garage and means that that university avoids approximately 13,800 metric tons of carbon dioxide annually.

In v1.0, 34% students chose to use more sustainable forms of commuting, as opposed to 66% of students that opted to drive alone as their primary means of transportation.



OP-17: Employee Commute Modal Split (Now OP-16: Commute Modal Split and worth 5 points) – 0.64/2.00

Total percentage of the institution's employees that use more sustainable commuting options as their primary method of transportation:	
v2.0: 47.80	v2.1: 32

OP-18: Support for Sustainable Transportation (Now worth 1 point) – 1.80/2.00

The university has yet to provide secure bicycle storage for bicycle users. It also has yet to provide short-term parking for all occupied buildings and long-term storage for all residential halls. The

institution did, however, recently enter into a partnership with Houston BCycle (a bike share program) in 2018.

RECOMMENDATIONS:

- Establish reimbursement program for bike commuters (University of Pennsylvania)
- Implement zero emissions transit system (University of California, Irvine)
- Offer quarterly or unlimited access to public transit (University of California, Los Angeles)
- Provide no-cost memberships for a bike share program (University of California, Berkeley)
- Decrease business permits (Texas A&M University)
- Increase capacity of on-campus transit system (Texas A&M University)
- Connect Students and Faculty to Park and Ride Systems

Waste – 4.30/10.00

Waste Minimization and Diversion – 2.63/8.00

The total waste generated (and diverted) totaled 4,270.12 Tons in v2.1. 4,460.65 Tons were generated in v2.0. [4% decrease] 16% of the total waste generated in v2.1 was recycled. In v2.0, 17% of the total waste generated was recycled.

3,461.85 Tons of materials (77% of all waste) were disposed of in a solid waste landfill or incinerator in v2.0, as opposed to 3567.80 Tons (84% of all waste) in v2.1. [3% increase]

Construction and Demolition Waste Diversion – 0.67/1.00

Hazardous Waste Management – 1.00/1.00

Water – 3.67/7.00 (Ranked 145 out of 327)

Water Use – 1.67/5.00

Total water use (potable and non-potable combined):	
v2.0 (2014): 411,151,300 Gallons	v2.1 (2015-17): 435,833,016 Gallons

The total water use (potable and non-potable combined) in v2.0 was 411,151,300 gallons. Total water use in v2.1 was 435,833,016 gallons. [6% increase] The increased water use may have to do with the fact that v2.1 accounted for a longer period than v2.0. This increase may relate to the expansion of the campus, as well: more toilets means more water will be used. [GD]

More than 700,000 gallons of water per second pour over Niagara Falls (Delaware North Parks & Resorts, 2019). This means that the total water used by the university could pour over Niagara Falls for 10 minutes.

Potable water use:	
v2.0 (2014): 391,634,000 Gallons	v2.1 (2015-17): 428,655,346 Gallons

Potable water use totaled 428,655,346 Gallons in v2.1 and 391,634,000 Gallons in v2.0. [9% increase]

2.5 points (or half of the points for this credit) would have been earned, if the university had achieved a 15 percent reduction in its potable water use per weighted campus user score (when compared to the baseline year). Unfortunately, there was no decrease in such water use and water use in this category actually increased from the baseline year by 0.6 percent.

The area of vegetated grounds in v2.0 was 416.21 acres. The area of vegetated grounds in v2.1 was 270 acres. [35% decrease]

RECOMMENDATIONS:

Rainwater Management – 2.00/2.00

RECOMMENDATIONS:

PLANNING & ADMINISTRATION – 19.76/32.00 or 61.8%

a. Coordination & Planning – 6.50/8.00

Sustainability Coordination – 1.00/1.00

Sustainability Planning – 4.00/4.00

Participatory Governance – 1.50/3.00

The main reason the university did not receive the maximum points available here is because it does not have written policies and procedures to identify and engage external stakeholders (i.e. local residents) in land use planning, capital investment projects, and other institutional decisions that affect the community. The same applies to the previous STARS report.

b. Diversity & Affordability – 9.04/10.00 (**Most Successful Subcategory**)

Diversity and Equity Coordination – 1.89/2.00

Assessing Diversity and Equity – 1.00/1.00

Support for Underrepresented Groups – 3.00/3.00

Affordability and Access – 3.15/4.00

The graduation/success rate for low-income students (0-100):	
v2.0: ---	v2.1: 51

Data for v2.0 on this indicator would be useful in determining whether or not the graduation/success rate for low-income students is progressing or not.

The percentage of students graduating with no interest-bearing student loan debt or for whom no out-of-pocket tuition is required:	
v2.0: 51	v2.1: 63

The percentage of students graduating with no interest-bearing student loan debt or for whom no out-of-pocket tuition is required was up from 51 in v2.0 to 63 in v2.1. [81% increase]

c. Investment & Finance – 1.08/7.00 (**Least Successful Subcategory**)

Committee on Investor Responsibility – 0.00/2.00

Sustainable Investment – 0.08/4.00

Percentage of the institution's investment pool in positive sustainability investments:	
v2.0: 1.97	v2.1: 1.19

In v2.0, the University invested 6,104,672 US/Canadian $ in one or more sustainability investment funds (e.g. a renewable energy or impact investment fund). In v2.1, the University invested 6,259,224 US/Canadian $. [3% increase]

Percentage of the institution's investment pool in positive sustainability investments:	
v2.0: 0.99	v2.1: 1.19

The university has yet to develop a sustainable investment policy.

Investment Disclosure – 1.00/1.00

d. Wellbeing & Work – 3.14/7.00 (Ranked 176 out of 327)

Employee Compensation – 0.45/3.00

100 percent of the institution’s employees do not receive a living wage, but 90 percent does. In order to receive full credit for Part 1 of the credit’s 0.75 points, 100 percent of employees must earn a living wage. 55 percent of the institution’s employees which have been contracted to work receive a living wage. In v2.0, 100 percent of both employees and contractors were covered by sustainable compensation standards or a living wage.

Assessing Employee Satisfaction – 1.00/1.00

Wellness Program – 1.00/1.00

Workplace Health and Safety – 0.69/2.00

INNOVATION & LEADERSHIP – 5.00/5.00 (**Most Successful Category**)

a. Exemplary Practice – 1.00/1.00

Sustainable Dining Certification – 0.50/0.50

Serving Underrepresented Groups – 0.50/0.50

b. Innovation – 4.00/4.00

Innovation A – 1.00/1.00

Innovation B – 1.00/1.00

Innovation C – 1.00/1.00

Innovation D – 1.00/1.00

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