

Senate Executive Committee Agenda
December 7, 2018 at 2:00 PM in Lib 404

1. Update on curriculum software
2. Drone policy (Eddie Guerra, page 2)
3. Sustainability policies (Jess Everett, separate files)
4. Grant transfer policies (page 6)
5. Proposed changes to Senate Committees (page 9)
6. Verification of Student identity Policy (Monica Kerrigan)

ROWAN UNIVERSITY INTERIM UNMANNED AERIAL SYSTEMS (DRONE) POLICY

Title: Unmanned Aerial System (Drone) Policy—Rowan University

Date: December 6, 2018

Purpose:

Rowan University supports the educational uses of unmanned aerial systems (“drones”) across its campuses and facilities. The University also recognizes the risks posed by drones to students, faculty, staff, the public and property. This policy offers guidance to operators of drone technology on Rowan University campuses and property.

Scope:

This policy applies to all members of the University community, including, but not limited to, faculty, staff, students, clubs, organizations, vendors, and any other individuals who are operating a drone as part of their employment or as part of any university-related research or activity. This policy also applies to any person or entity not affiliated with the university that operates a drone on university property, including recreational and non-recreational drones. This policy does not apply to Public Safety or any government agencies responding to emergency situations.

Federal and State Regulations:

All drone operators must comply with Federal Aviation Administration (“FAA”) regulations governing drone usage. Where applicable under federal law, some drones in a certain weight class must be registered with the FAA. While operating such drones on Rowan University premises, the operator must comply with Part 107 or Section 336 Operating Rules of FAA regulations, located here: https://www.faa.gov/uas/getting_started/part_107/ and https://www.faa.gov/uas/getting_started/model_aircraft/ and possess, if required, the relevant Certificate of Aircraft Registration. Additionally, operators must comply with the requirements of all New Jersey and municipal laws on drone usage. Specifically, N.J.S.A. 2C:40-27, *et seq.* and § 432-2(C)(1)(y) of the Glassboro Municipal Code prohibiting drone usage in the Town Square property.

Indoor Usage:

Indoor uses of small drones are permitted only for research and teaching purposes and must be done with appropriate faculty oversight. Indoor operation is permitted only once responsible faculty have determined that the proposed space is suitable for such experimentation and approval of the Department Chair and Public Safety have been obtained. Operators must exercise reasonable care and safety while operating indoors to ensure the safety of others and protection of property. Students and student groups wishing to operate drones must obtain the sponsorship of a faculty member and the permission of the member’s department chair or head.

Outdoor Usage:

Outdoor uses of drones for research, teaching, or operational activities of the University may be proposed by members of the University community but operators must receive advance written permission from their respective Department Chairs and Public Safety. Additionally, Public Safety must be notified of any instance of drone operation *prior to the operation of same*. All outdoor drone operations must comply with FAA flight regulations for drones, such as flying under height ceilings, flying within a visual line-of-sight, flying in clear visibility, and flying in a manner that does not endanger the safety of others or property. Students and student groups wishing to operate drones must obtain the sponsorship of a faculty member and the permission of the member's department chair or head.

Review/Permitting Process:

All outdoor and indoor uses of drones must be reviewed and approved by Deans, Department Chair or Head, and Public Safety. Requests can be submitted for single-time operations or reoccurring operations of drones. All operators wishing to operate drones on Rowan University property complete the Rowan University Unmanned Aerial System (Drone) Permission Request Form which is available from Reed Layton, Senior Director of Public Safety, at LaytonR@rowan.edu, (856) 256-4506. Permission will be granted at the discretion of the above-described approval authorities and Public Safety, taking into consideration safety concerns and all other appropriate factors. Approval of all operation requests will be reviewed in a timely manner.

No Drone Zones:

- No operator is to operate a drone over any University-controlled sporting facility or event while the facility is being used, including, but not limited to, the Richard Wackar Football Stadium and the Baseball Fields, the Soccer Fields, and the Tennis Courts, except by advance written permission from Public Safety.
- Drones outfitted with cameras are not to be operated in or around any University-controlled housing, including student dorms and apartments without advance written permission from Public Safety.
- Drones shall not be operated in a manner to harass, annoy, or pester any individual on Rowan University premises.

Unauthorized Use:

Failure to comply with federal and state regulations and this policy may result in disciplinary action and could additionally lead to local, state, and federal civil and criminal penalties. In New Jersey, it is a criminal offense to operate a drone while intoxicated. N.J.S.A. 2C:40-28(e). It is also a criminal offense to operate a drone in a manner that interferes with a first responder's responsibilities. N.J.S.A. 2C:40-28(c). Unauthorized drone operation on University property may result in appropriate student or faculty discipline.

Updates to Policy:

This policy may be updated in writing as necessary or appropriate in light of institutional experience and external regulatory changes.

Applicant:

Name: _____
Telephone: _____
Email: _____

Flight Information:

Date(s)/Time: _____
Location¹: _____
Purpose: _____

Drone Information:

Size of Drone: _____
Description: _____

Comments:

Faculty Sponsor:

Email: _____

Name: _____

Department: _____

Email: _____

Department Chair/Approval Authority:

Name: _____

Signature: _____

¹ No drone flight will be authorized over a University-controlled sporting facility while the facility is in use for sporting or other university-related activities including, but not limited to, Commencement events. Additionally, drone flights will not be authorized in or around any University-controlled housing.

All questions should be directed to Reed Layton, Senior Director of Public Safety at LaytonR@rowan.edu, (856) 256-4506.

Division of University Research – Office of Sponsored Programs

Grant Transfer Overview

Grant awards are made to institutions and not directly to Principal Investigators. When a Principal Investigator (PI) moves from one institution to another with active grants, the relinquishing institution must agree to the transfer and follow any specific terms of the grant agreement regarding transfer of said grant to a different institution. Any PIs transferring grants to Rowan or from Rowan to another institution should contact the Office of Sponsored Programs (OSP) as soon as possible, ideally 90 days prior to the move to the new institution. Normally any equipment purchased using grant funding will transfer to the new institution at the cost of the new institution. Any university funds used as matching to purchase equipment should be evaluated for current value and cost should be covered by new institution if being transferred.

Transfers to Rowan University

PIs transferring to Rowan University should provide the OSP a listing of all grants they intend to transfer to Rowan University along with any equipment, subawards, transfer of personnel, etc. At this point, the PI should have notified the OSP at their current institution, along with their department chairs and granting agency and received approval of the transfer. The PI should provide Rowan's OSP contact information for the OSP at their former institution. The two offices will then work together to complete the transfer. Depending on the sponsoring agency, certain forms and processes may be required of each institution. For instance, a relinquishing statement will likely be required from the former institution and an updated budget and other documentation (for instance new subaward agreements if applicable) will need to be completed by Rowan. Upon completion of the documentation, the sponsor (according to their policy) will generally issue a new Notice of Award to Rowan which will indicate the direct and indirect costs remaining on the award that will transfer to Rowan, the start date of the award at Rowan, and other terms and conditions of the award. Once the documentation and approvals are complete, the transferred equipment is now considered owned by Rowan.

All research funded equipment transferring to Rowan that requires network connectivity (i.e. requires an IP address) must adhere to all Rowan technology policies and will need to be checked in with the campus Information Resources & Technology (IRT) department so the appropriate network configuration and software (e.g. antivirus, encryption) can be installed. This is the responsibility of the PI.

Transfers from Rowan University

When a PI leaves Rowan University to another institution, they should obtain approval from their Program Officer for the transfer along with the department chair and dean and notify the OSP. The PI must work with their department administration and OSP to formally request a transfer, list any equipment, and for NIH grants, complete form PHS 3734. If equipment includes licensed software provided by Rowan, Information Resources & Technology (IRT) will reimaging the system to ensure all Rowan licensed software and security technologies (e.g. antivirus, encryption) are removed prior to the transfer of equipment to the new institution. The PI is responsible for backing up their research data and working with the vendor or new institution to reinstall any software

required for use with the grant. When a PI moves to another institution and requests transfer of equipment to the new institution, the following standards will apply:

- Equipment purchased with federal funds may not be transferred to a for-profit institution
- If an active grant is being transferred to another academic institution, equipment purchased on that grant may be transferred to the new institution in accordance with the terms of the grant.
- Equipment purchased with federal funds on a grant that is no longer active will be released only if the department chair certifies that the equipment is not useful to the other investigators in the department.

The PI and department administration must identify, list, and categorize research materials, including location of research materials, and then the PI should certify the statement in writing. PI should provide Rowan's OSP contact information at the new institution. Rowan OSP will prepare appropriate relinquishment document and get appropriate approvals according to the terms of the grant agreement, including details of direct costs, equipment, etc. that will be transferred to the new institution. Sponsor will likely provide confirmation of close out with Rowan and new Notice of Award to new institution.

It is the responsibility of the PI, in conjunction with Department Administration, OSP and Grants and Contracts Accounting, to ensure the following is reviewed, identified, and completed as required:

- NIH grants only – Form PHS 3734
- Adhering to Sponsor Guidelines, Policies and Procedures
- Obtaining Sponsor Approvals, if necessary
- Financial Close-Out of Grant Funds, Cost Transfers, and Payroll Reallocations
- Subaward Management, Reporting, Agreement Modification or Termination, and Disposition of Staff
- Personnel Management
- Equipment List related to Grant or Grants to be transferred
- Research Materials, defined as the record of data and/or results that embody the scientific investigation, regardless if electronic or physical include the following:
 - Research proposals, protocols, grant applications, progress reports
 - Laboratory notebooks, records, clinical trial records, emails and computer files
 - Cell lines, chemical compositions, specimens, and animals
 - Publication materials
- All and any research materials must be reviewed by the Office of Technology Commercialization to protect any patent filings that have been derived from the research
- Any research materials that include Protected Health Information (PHI) must be reviewed by the Cooper Medical School at Rowan University's and School of

Osteopathic Medicine's respective departments who are responsible for use and access to PHI records and data

- Intellectual Property Management, Final Invention Statements, Material Transfer Agreements, Licensing, and Research materials need for Patents and Patent Filings, in conjunction with Office of Technology Commercialization must be completed
- Hazardous Materials, in conjunction with Division of Facilities, Planning & Operations and Office of Research Compliance must be identified and listed
- Research and Teaching Animals, in conjunction with Division of Facilities, Planning & Operations and Office of Research Compliance, must be identified and listed
- Human Subjects, in conjunction with Office of Research Compliance, must be identified and listed

Proposed Changes to Senate Committees

Note: Most of the changes here formalize the addition of CMSRU faculty on committees on which they have been serving, and add representatives from the School of Earth and Environment and the School of Health Professions.

Academic Integrity

Currently: *9 Faculty (to include at least 1 representative from each College) and 2 from the College of Humanities & Social Sciences and 1 from the College of Science & Mathematics.*

Proposed:

12 Faculty (to include 1 representative from each College and the Schools of both Earth and Environment and Health Professions, and 2 representatives from the College of Humanities & Social Sciences)

Academic Policies and Procedures

Currently: *8 Faculty (to include 1 representative from each College)*

Proposed: *11 Faculty (to include 1 representative from each College and the Schools of both Earth and Environment and Health Professions)*

Campus Aesthetics and Environmental Concerns

Currently: *8 Faculty
 2 Professional Staff
 1 Administrator
 3 Additional Faculty and/or 3 Professional Staff
 1 CWA Rep
 1 IFPTE#195 Rep
 1 AFT Rep
 3 SGA Reps*

Proposed: *11 Faculty
 2 Professional Staff
 1 Administrator
 3 Additional Faculty and/or 3 Professional Staff
 1 CWA Rep
 1 IFPTE#195 Rep
 1 AFT Rep
 3 SGA Reps*

Career Development

Currently: *8 Faculty (one from each College)
 1 Librarian
 1 AFT Rep
 1 Professional Staff*

Proposed: 11 Faculty (one from each College and the Schools of both Earth and Environment and Health Professions)
1 Librarian
1 AFT Rep
1 Professional Staff

Committee on Committees

Currently: 5 Faculty and/or 5 Professional Staff
1 AFT Rep

Proposed: No changes

Curriculum

Currently: 2 Business Faculty
2 Engineering Faculty
2 Performing Arts Faculty
2 Communication & Creative Arts Faculty
2 Education Faculty
2 Science/Math Faculty
3 Humanities & Social Sciences Faculty
1 Professional Staff
1 AFT Rep
4 SGA Reps
1 Librarian

Proposed: 2 Business Faculty
2 Engineering Faculty
2 Performing Arts Faculty
2 Communication & Creative Arts Faculty
2 Education Faculty
2 Science/Math Faculty
3 Humanities & Social Sciences Faculty
2 Earth and Environment Faculty
2 Health Professions Faculty
1 Professional Staff
1 AFT Rep
4 SGA Reps
1 Librarian

Graduate Education and Global Learning and Partnerships

Currently: 8 faculty (to include at least 1 representative from each College)
2 Professional Staff
2 SGA Reps
2 Graduate Students
1 Rowan Global Rep
1 AFT Rep

Proposed: 11 Faculty (one from each College and the Schools of both Earth and Environment and Health Professions)

2 Professional Staff
2 SGA Reps
2 Graduate Students
1 Rowan Global Rep
1 AFT Rep

Diversity

Currently: 10 Faculty, Librarians and/or Professional Staff
1 Central Administrator
1 AFT Representative
1 CWA Representative
1 IFPTE #195 Representative
3 SGA Representatives

Proposed: 12 Faculty, Librarians and/or Professional Staff
1 Central Administrator
1 AFT Representative
1 CWA Representative
1 IFPTE #195 Representative
3 SGA Representatives

Intercollegiate Athletics

Currently: *Co-Chairs: 1 appointed by Senate
1 appointed by University President
4 Administrators (one is Co-Chair)
8 Faculty (one from each college)
1 Director of Athletics
2 Professional Staff
2 SGA Reps
1 AFT Rep*

Proposed: *Co-Chairs: 1 appointed by Senate
1 appointed by University President
4 Administrators (one is Co-Chair)
11 Faculty (one from each College and the Schools of both Earth and Environment and Health Professions)
Director of Athletics
2 Professional Staff
2 SGA Reps
1 AFT Rep*

Learning Outcomes Assessment

Currently: *Note: Committee **Chair is not calculated in committee total.**
8 Faculty (one from each College)
1 Curriculum Committee Rep
1 Institutional Research (non-voting) Rep
1 AFT Rep
1 Professional Staff
1 Academic Policies/Procedures Committee Rep
2 SGA Reps*

Proposed: *Note: Committee **Chair is not calculated in committee total.***
11 Faculty (one from each College and the Schools of both Earth and Environment and Health Professions)
1 Curriculum Committee Rep
1 Institutional Research (non-voting) Rep
1 AFT Rep
1 Professional Staff
1 Academic Policies/Procedures Committee Rep
2 SGA Reps

Professional Ethics and Welfare

Currently: *10 Faculty and/or 10 Professional Staff*
1 AFT Rep

Proposed: No changes

Promotion

Currently: *8 Teaching Faculty (one from each College)*
1 AFT Rep

Proposed: *11 Faculty (one from each College and the Schools of both Earth and Environment and Health Professions)*

Recruitment, Admission, and Retention

Currently: *15 Faculty and/or 15 Professional Staff*

Proposed: No changes

Research

Currently: *8 Faculty (1 from each college)*
5 additional Faculty from any college
3 Professional Staff
1 Librarian
1 AFT Rep
1 SGA Rep

Proposed: *11 Faculty (one from each College and the Schools of both Earth and Environment and Health Professions)*
5 additional Faculty from any college
3 Professional Staff
1 Librarian
1 AFT Rep
1 SGA Rep

Rowan Core

Currently: *Note: Committee Chair is not calculated in committee total.*
2 College of Business faculty
2 College of Communication and Creative Arts faculty
2 College of Education faculty
2 College of Engineering faculty
2 College of Performing Arts faculty
2 College of Humanities and Social Sciences faculty
2 College of Science and Mathematics faculty
1 School of Earth and the Environment faculty
2 SGA Reps
2 Professional Staff Advisors
1 AFT Rep
1 Librarian

Proposed: *11 Faculty (one from each College and the Schools of both Earth and Environment and Health Professions)*
2 Professional Staff Advisor
1 Librarian (1 member).
1 AFT Representative
2 additional faculty members (any college)

Sabbatical Leave

Currently: *8 Faculty and/or Professional Staff*
3 Faculty or Librarian
1 AFT Rep

Proposed: *11 Faculty (one from each College and the Schools of both Earth and Environment and Health Professions)*
1 AFT Rep

Student Relations

Currently: *10 Faculty and/or 10 Professional Staff*
1 AFT Rep
1 CWA Rep
5 SGA Reps

Proposed: No changes

Technological Resources

Currently: *8 Faculty (1 from each college)*
5 additional Faculty from any college
3 Professional Staff
1 Librarian
1 AFT Rep
1 SGA Rep

Proposed: *11 Faculty (one from each College and the Schools of both Earth and Environment and Health Professions)*
3 Professional Staff
1 Librarian

5 additional faculty, librarians, or professional staff
1 AFT Rep
1 SGA Rep

Tenure and Recontracting

Currently: 16 Tenured Faculty (at least one from each College)
1 Librarian
3 Professional Staff
1 AFT Rep

Proposed: 18 Tenured Faculty (at least one from College and the Schools of both Earth and Environment and Health Professions)
1 Librarian
3 Professional Staff
1 AFT Rep

University Budget and Planning

Currently: 1 Executive Director of Budget & Planning serves as Co-Chair
1 Vice President of the Senate is required to serve on this committee
(Membership Resolution #871204-3 & #890517-23)
*Committee co-chairs are not included in committee total
1 VP Administration/Finance
3 Professional Staff
9 Faculty –1 from each College, 1 additional faculty
1 Librarian
1 CWA Rep
1 IFPTE#195 Rep
1 AFT Rep
1 SGA Rep

Proposed 1 Executive Director of Budget & Planning serves as Co-Chair
1 Vice President of the Senate is required to serve on this committee
(Membership Resolution #871204-3 & #890517-23)
*Committee co-chairs are not included in committee total
1 VP Administration/Finance
3 Professional Staff
9 Faculty –1 from each College, 1 additional faculty
1 Librarian
1 CWA Rep
1 IFPTE#195 Rep
1 AFT Rep
1 SGA Rep

Carbon Neutrality Action Plan – Executive Summary

The purpose of this document is to present an Executive Summary version of a viable action plan for achieving climate neutrality at Rowan University (RU) by 2029. The document has been divided into 4 sections. Section 1 provides an introduction and overview of a proposed schedule for implementing key policy, tactical and strategic actions that will enable the campus to become climate neutral with respect to carbon dioxide impacts. It also includes a growing student population consistent with the student population found in the RU Campus Master Plan. We have provided an estimated equivalent kWh/student use in the years in which new key actions are implemented. Kilowatthours (kWh) are the metric for energy use employed in this proposal. Section 2 provides calculated estimates what the University's predicted carbon emissions would be in 2029, if no climate neutrality actions take place (A business as usual scenario). This section can be used to identify the present and future sources of the University's carbon emissions. Section 3 provides a summary of how reductions in carbon emissions are planned to be achieved between the present and 2029, assuming the schedule described in section 1 is adopted by the campus and administration and is followed. The section provides an overview of key measures whereby carbon reductions may be obtained. The final section is provided as a summary list of key parameters, estimates, and assumptions used to generate the values in this plan and the underlying modeling it represents. All energy and carbon estimates are based on the best available information, including a recently completed carbon inventory, standard engineering calculation methods and future estimates based upon available University documents (e.g., the master plan).

This action plan is part of the President's Climate Commitment (<http://www.presidentsclimatecommitment.org>). President Farish was the first university president to sign the Climate Commitment in State of New Jersey. The ultimate result of the commitment will be to make RU climate neutral (i.e., zero net carbon emissions) in the not too distant future. The commitment involves:

1. Establishing an institutional structure to oversee the development and implementation of a climate action program;
2. Completing an emissions inventory within one year;
3. Establishing a climate action plan that includes a target date and interim milestones for becoming climate neutral within two years;
4. Taking immediate steps to reduce greenhouse gas emissions by implementing at least two of a list of seven tangible actions while the climate action plan is being developed;
5. Establishing a plan for integrating sustainability into the curriculum and making it a part of the educational experience; and
6. Making the inventory, climate action plan, and progress reports publicly available.

Items 1, 2, and 4 above have been completed. Items 3 and 5 are due on September 15, 2009. The purpose of this document is to provide our preliminary recommendations regarding item 3, and provide a framework for the continued development and refinement of an economically

achievable climate neutrality action plan for RU. Faculty, staff, and student comments and suggestions will be gathered for the rest of this semester and until the end of May in order to inform the initial draft plan that will be submitted in September. That revised plan will be submitted September 15 and will represent a serious commitment on the part of our University. However, it is understood that such an aggressive and ambitious set of actions will inevitably be modified over time in response to faculty, staff, and student input and changing environmental, economic and technologic conditions (e.g., in climate science and energy/control technologies).

1. Carbon Neutrality Actions and Year(s) Implemented

Table 1 shown on the following page represents a proposed scenario of thirty aggressive measures that, if implemented, can achieve carbon neutrality for RU. For each carbon neutrality (CN) action an estimated date for implementation (a future year) as well as estimated impacts that these proposed activities would have on our carbon footprint (represented as equivalent kWh per student). Some of these activities and policies are self explanatory but we have provided a brief summary description of each in the Appendix to this proposed plan. In essence the plan represents the total elimination of carbon emissions from all campus facilities (buildings, energy usage, transport on and off campus – including commuters and employee travel, etc.). The plan calls for recognition of the major efforts we have already taken to reduce our emissions and improve our efficient use of energy by keeping the new cogeneration facility in operation until the end of its service life and gradually improving the efficiency of all new and existing buildings. As shown below in measures 4, 8, 11, 19, 21, 24 and 29 we present a systematic improvement in building energy utilization efficiency with some measures attacking existing buildings and others targeted at the new buildings associated with the campus expansion needed to accommodate a growing student and faculty population. These measures move aggressively from the current building policy that all new buildings are LEED certified (at the Silver level) to Gold (2015), then Platinum (2020), then to carbon neutral (2025) and finally carbon negative (2029). This includes conversion of our entire fleet of buildings (old and new) ultimately to geothermal HVAC powered by renewable energy sources. Similar measures are proposed for our energy supply, ultimately moving off of natural gas in 2029 as we become entirely dependent upon renewable energy sources and the grid. It is recognized in the plan that it may be impossible to totally free ourselves from carbon generation in the next two decades based upon potential limitations in technology and or economics of alternatives, so we have proposed REC trading and arbitrage from our campus PV systems to secure carbon offsets for commuters, faculty and staff to assure we will achieve our goal even if carbon neutral transport does not become a reality over this planning horizon. The current plan includes the construction of a 30 MW Photovoltaic power plant on the West Campus and involvement in an NJHEPS offshore wind consortium for the purchase of additional renewable energy generated

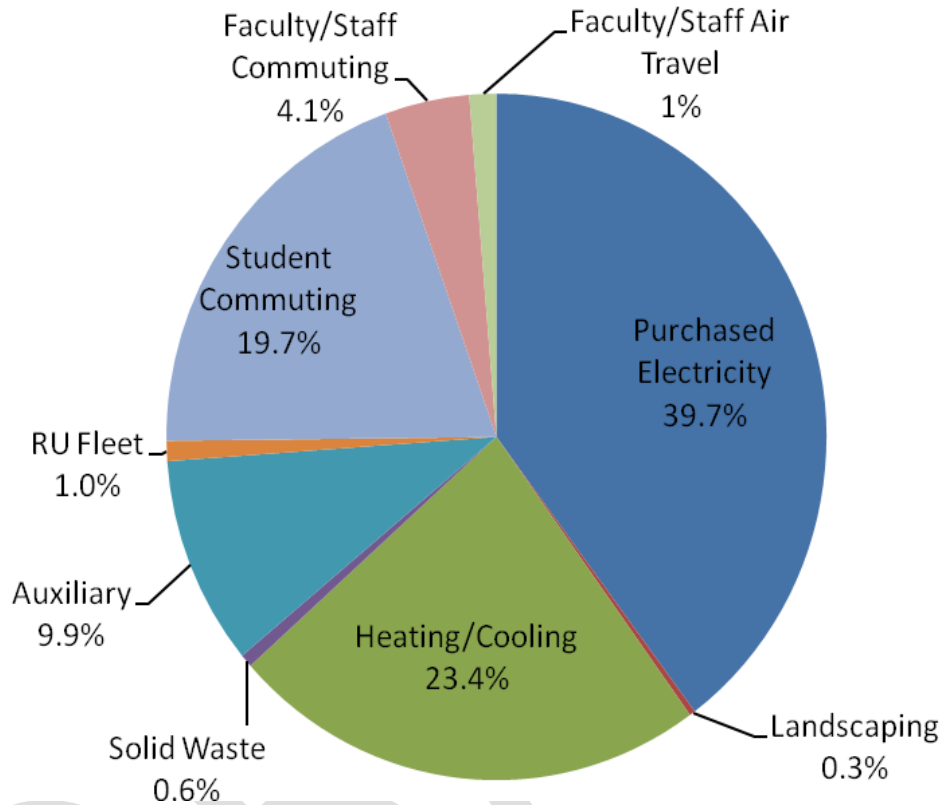
electricity. Please consult the appendix for a more detailed description of the proposed measures in the plan.

Table 1 – Carbon Neutrality Plan Measures

CN Measures	Year Implemented	Student Population (FTE)	Total Energy* / Student (kWh/student)
1. Wind Renewable Credits	2009	9,212	18027
2. Building Metering and Energy Audits	2011	10,291	13945
3. Integrating sustainability into curriculum			
4. Increase Energy Efficiency of old buildings	2012	10,831	10605
5. PV system on West Campus 10 MW			
6. Recycling on Campus (1 st Phase)			
7. Buying offsets for air travel and rental cars	2013	11,370	10636
8. LEED Gold Certification for new buildings	2015	12,449	7509
9. All students to live on or near campus			
10. Students/faculty/staff buy offsets to cover commuting			
11. New buildings geothermal HVAC	2016	12,988	7664
12. Initial Conversion Rowan University Fleet			
13. Replanting of forests			
14. Recycling on Campus (2 nd Phase)	2017	13,527	5589
15. NJHEPS Wind Consortium 25 MW	2018	14,067	4205
16. LEDs for all Campus lighting	2019	14,606	4464
17. Promoting alternative vehicles and transportation on campus			
18. Recycling on Campus (3 rd Phase)	2020	15,146	3732
19. LEED Platinum Certification for all new buildings			
20. PV system on West Campus next 10 MW			
21. Begin refit old buildings with Geothermal	2021	15,685	3990
22. Begin Phase out Co-gen plant	2024	17,303	4667
23. Recycling on Campus (4 th Phase)			
24. All new buildings are zero emission	2025	17,842	3872
25. West Campus Composting Facility	2026	18,382	4088
26. Close-to-Zero Waste Campus	2028	19,461	3868
27. PV system on West Campus next 10 MW			
28. Co-gen Plant is Phased out of service	2029	20,000	0
29. All new buildings have Negative Carbon Footprint			
30. Geothermal HVAC for all RU Buildings			

2. FY2029 Estimates for Emissions and Campus Information (No Action) - These graphs illustrate a business as usual scenario if we follow current strategies with proposed expansion.

FY2029 Emissions from Source (No-Action)

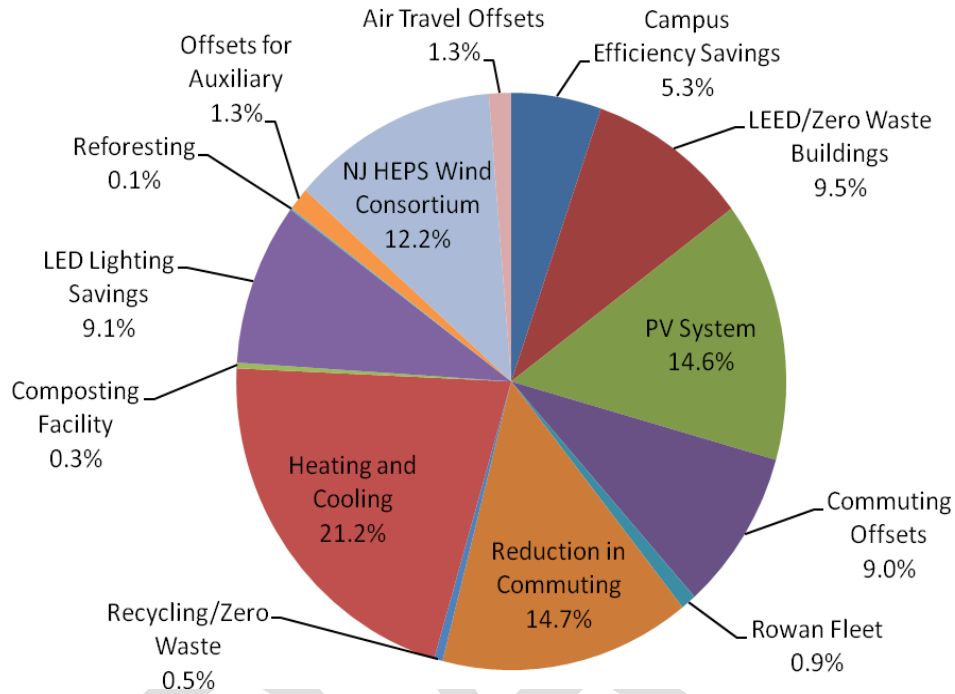


FY2029 Emissions and Percentages		
Item	Emissions MT Co2	%
Purchased Electricity	61431	39.7
Landscaping	434	0.3
Heating/Cooling	36107	23.4
Solid Waste	949	0.6
Auxiliary	15249	9.9
RU Fleet	1471	1.0
Student Commuting	30498	19.7
Faculty/Staff Commuting	6386	4.1
Faculty/Staff Air Travel	2032	1.3
Total	154559	100.0

FY2029 Campus Information	
Students (FTE)	20000
Students	23306
Faculty + Staff	3356
Faculty	1372
Staff	1984
Facilities	
Vehicles	220
Building (ft^2)	4395050

3. FY2029 Estimate for Emissions Reductions by Carbon Neutrality Actions - These graphs illustrate the reductions in carbon emissions (by measure) that would be achieved if we implement the proposed climate neutrality plan in this document.

FY2029 Emissions Reductions by Source



FY2029 Emissions Reductions and Percentages		
Item	Emissions MT CO2	%
Efficiency Savings	8207	5.29
LEED/Zero Waste Buildings	14747	9.50
PV System	22651	14.59
Commuting Offsets	14011	9.02
Rowan Fleet	1398	0.90
Reduction in Commuting	22874	14.73
Recycling/Zero Waste	768	0.49
Heating and Cooling	32924	21.21
Composting Facility	490	0.32
LED Lighting Savings	14165	9.12
Reforestation	140	0.09
Offsets for Auxiliary	1982	1.28
NJHEPS Wind Consortium	18876	12.16
Air Travel Offsets	2032	1.31
Total	155265	100.00

4. Parameters, Estimates, and Assumptions – In this section we provide the starting year inputs and ending year targets for key parameters. In addition, we have listed key assumptions so that these can be reviewed and critiqued by the broader campus community.

	Item	FY2008	FY2029
Units are MT of CO2	Purchased Electricity	26598	61431
	Heating/Cooling	0	36107
	Auxiliary	18778	15249
	RU Fleet	837	1471
	Student Commuting	13205	30498
	Faculty/Staff Commuting	2765	6386
	Faculty/Staff Air Travel	880	2032
	Landscaping	247	434
	Solid Waste	411	949
	Renewable Credits	8310	0
	Total	55411	154559
Units Vary	Students (FTE)	8673	20000
	Students	10091	23306.25
	Faculty + Staff	1453	3356
	Faculty	594	1372
	Staff	859	1984
	Facilities Vehicles	125	220
	Building ft^2	2500000	4395050

Assumptions Inherent in Model Calculations for the Base Case Reduction Scenario

- Student Enrollment will reach 20,000 FTE in FY2029 (FTE is Full-Time-Equivalents)
- Building Area will continue to grow at the rate specified in the 2007 Master Plan estimates for 2015
- Lighting demand makes up approximately 40% of purchased electricity on campus
- Old buildings on campus will not be replaced
- A West Campus PV system and/or wind power will cover all of the electricity needs for campus by 2029
- All students and faculty will either live on/near campus or pay for commuting offsets by 2029
- The Co-gen will continue to run at full capacity and the boilers will run to accommodate new buildings on campus until Geothermal is installed
- The electricity provided by Atlantic City Electric will remain at the same fuel mix as it was in FY2008 and will not continue to get greener

- Geothermal heating and cooling will provided 5 units of heating for every one unit of electricity
- Recycling on campus will continue to increase until the campus is near zero waste

Appendix

1. Wind renewable energy credits – The purchase of wind renewable energy credits is currently being undertaken by Rowan University. Rowan has purchased these credits in varying amounts for several years (amount varies due to market for these credits) and has been recognized by the EPA for the past three years for our purchases.
2. Building metering and energy audits – This measure involves installing energy meters in buildings where none currently exist and monitoring data concerning the energy uses of buildings on campus. Data will be utilized to develop energy profiles and energy audits will be conducted to identify energy conservation measures that can be utilized and carbon reduction opportunities for the current buildings on campus.
3. Incorporating sustainability into the curriculum – Recently an Ad Hoc Senate committee was created to develop recommendations for incorporating sustainability into the curriculum for all students on campus. This measure is still being discussed and planned but already has strong support from many faculty on campus. This measure will give students a better understanding of sustainability and current/future developments in sustainability while at Rowan University and perhaps students will put into practice what they have learned.
4. Increase energy efficiency of old buildings – This measure is the continuation of the buildings metering and energy audits. After analyzing the collected data and energy profiles, actions will be taken to make the current buildings on campus more energy efficient and reduce carbon emissions.
5. PV system on West Campus 10 MW (1) – This measure is the first of three installments of photovoltaic's on West Campus. As Rowan Campus and enrollments grow more energy will be required. West Campus presents an opportunity for green energy in the form of solar energy due to the space available for a photovoltaic system and then two later upgrades/additions to the system as needed.
6. Recycling on campus (1) – This measure is the first of four increases to the recycling efforts at Rowan University. By increasing/augmenting the recycling on campus, the carbon emissions associated with landfilling or incinerating the waste produced by Rowan University will decrease over the course of the 4 recycling measures.
7. Buying offsets for air travel and rental cars – The carbon emissions associated with airline travel and rental car usage by faculty and staff at Rowan University can be negated by buying offsets when these methods of transportation are used. A little extra cost and the participation of the faculty and staff would be required to make this measure effective.

8. LEED Gold Certification for all new buildings – Two buildings at Rowan University already have LEED Certification. The first building is the Education Building which is LEED Certified and the second is the Samuel H. Jones Innovation Center at the South Jersey Technology Park which is LEED Silver Certified. By continuing this trend and setting a standard for all new buildings at Rowan University to be LEED Gold, the carbon emissions associated with new buildings will be much lower than with buildings that are not LEED Certified.
9. All students to live on or near campus – With the completion of the Rowan Boulevard Project and other future projects concerning student housing, more students than ever before will be able to live on or close to campus. By encouraging and making it possible for students to live closer to campus, the carbon emissions for student commuting will decrease.
10. Student/Faculty/Staff buy offsets to cover commuting – To compensate for the carbon emission of commuting students/faculty/staff, which encompass a fairly large portion of the total carbon emissions for Rowan University, offsets will be purchased by students, faculty, and staff to cover the carbon emissions associated with their vehicle and travel distance.
11. All new buildings geothermal heating/cooling – To reach the goal of carbon neutrality, Rowan University needs to find a better way to heat and cool its buildings. By implementing geothermal heating/cooling for new buildings on campus, the Co-gen plant will not need to be expanded in the future. Geothermal heating/cooling will use electricity instead of natural gas to heat and cool buildings more efficiently. The electricity usage will be green because of the implementation of PV systems on West Campus and a possible offshore wind consortium.
12. Initial conversion of Rowan University fleet (1) – This measure is the first of two which will seek to purchase greener vehicles as the current Rowan University fleet becomes obsolete.
13. Replanting of forests – With the decrease of commuters, and the future building of parking garages on campus, many parking lots on campus will no longer be required. These lots can be removed and new trees planted to provide a small offset of carbon emissions.
14. Recycling on campus (2) – This is the second of four measures to increase recycling efforts on campus.
15. NJ HEPs offshore wind consortium (25 MW) – This measure involves the possibility of forming a consortium of Universities to build offshore wind turbines and purchase the electricity produced from the wind turbines at a set price.
16. LEDs for all campus lighting – This measure involves the replacing all of the lighting on campus with LEDs which would have significant carbon emission savings for campus.
17. Promoting alternative vehicles and transportation on campus (2) – This measure is the second of two measures, the first being the initial conversion of the Rowan fleet. With this measure, the rest of the Rowan University fleet will be replaced with greener vehicles and at this time Rowan Campus will have better facilities to accommodate greener modes of transportation.
18. Recycling on campus (3) – This is the third of four measures to increase recycling efforts on campus.

19. LEED Platinum Certification for all new buildings – By raising the standard on campus from LEED Gold to LEED Platinum for all new buildings, the carbon emission associated with new buildings will keep decreasing.
20. PV system on West Campus additional 10 MW (2) – This measure is the second of three measures for implementing and expanding PV on West Campus. The current system will be increased by 10 MWs.
21. Begin refitting old buildings with geothermal heating/cooling – With all of the new buildings using geothermal heating/cooling; the old buildings on campus (which use the Co-gen) will undergo retrofit to use geothermal for their heating and cooling needs.
22. Phase out of Co-gen plant – Once the retrofitting of the old buildings commences the phasing out of the Co-gen plant will begin.
23. Recycling on campus (4) – This is the fourth of four measures to increase recycling efforts on campus.
24. All new buildings are Zero Emission Buildings – By raising the standard on campus from LEED Platinum to Zero Emission Buildings, new buildings on campus will not produce any additional carbon emissions.
25. West Campus composting facility – This measure involves the construction of a composting facility on West Campus that will take in food waste from the Students Center and yard waste from landscaping to produce compost that can be used on Rowan Campus or sold.
26. Close-to-zero waste campus – After increasing recycling efforts on campus and installing a composting facility, Rowan University will become a close-to-zero waste campus. This means that the University will have 90% or more of its generated waste not end up at an incinerator or landfill.
27. PV system on West Campus additional 10 MW (3) – This measure is the third of three measures for implementing and expanding PV on West Campus. The current system will be increased by an additional 10 MWs.
28. Co-gen Plant is phased out – At the time this measure is implemented, the Co-gen plant will have reached its expected lifespan and Rowan University will be switching to geothermal heating/cooling for its buildings.
29. All new buildings are Negative Carbon Footprint – This measure raises building standards on Rowan Campus from Zero Emission Buildings to Negative Carbon Footprint buildings. New buildings will not only have zero carbon emissions but actually help reduce the carbon emissions on campus by producing more clean energy than they use.
30. Geothermal heating/cooling for all buildings on campus – By the end of the expected lifespan of the Co-gen plant, the plant will be retired and geothermal heating/cooling will be used for all buildings on Rowan Campus. At this time Rowan University will have met the expectations of the Presidents Climate Commitment and become a carbon neutral campus.



RESOLUTION-POLICY

X	Action Item
	For Information Only

From: Dr. Eric Milou, Rowan University Senate President

To: Dr. Ali Houshmand, Provost

Date: 3/14/11

RE: Senate Resolution **110311-2**

Resolution to Recommend Recognition of Sustainability as an Institutional Learning Objective

WHEREAS, in 2004, the University Senate unanimously passed an Environmental Resolution calling for Rowan University to make a commitment to environmental responsibility;

WHEREAS, in 2007, President Donald Farish (and over 650 other presidents and chancellors to date) signed the American College and University Presidents' Climate Commitment, a pledge to reach climate neutrality in our campus operations (and which requires Rowan University to establish a plan for integrating sustainability into the curriculum and make it a part of the educational experience);

WHEREAS, the Senate formed an Ad Hoc Committee on Integrating Sustainability into the Rowan Curriculum in order to further build a culture of sustainability on our campus;

And WHEREAS, sustainability, defined as "meeting the needs of the present without compromising the ability of future generations to meet their own needs" (World Commission on Environment and Development 1987) and "the ability of an ecosystem to maintain ecological processes, functions, biodiversity and productivity into the future" (US Regional Ecosystem Office 2009), is a global value as well as a complex and difficult challenge;

THEREFORE BE IT RESOLVED that the Rowan University Senate recognizes the importance of producing graduates with knowledge, skills, and dispositions that will prepare them to fulfill their civic, professional, and personal responsibilities regarding sustainability and recommends that sustainability be designated as an Institutional Learning Objective for all students and formally integrated into the curriculum.

Further details regarding the goals and rationale for recognizing sustainability as an institutional learning objective are described in the report below from the Ad Hoc Committee on Integrating Sustainability into the Rowan Curriculum.

Sustainability in the Curriculum

Goal

Rowan University undergraduates shall be exposed to environmental, social, and economic aspects of

sustainability. Sustainability is can be defined as "meeting the needs of the present without compromising the ability of future generations to meet their own needs" (World Commission on Environment and Development 1987). In an ecological context, sustainability can be defined as the ability of an ecosystem to maintain ecological processes, functions, biodiversity and productivity into the future (US Regional Ecosystem Office 2009). For Rowan's purposes, using a combination of these two definitions focuses educational efforts both on the sustainability of human life on earth and on the sustainability of earth's ecosystems under human impact. As such, sustainability requires taking account of the triple bottom-line, i.e., economic, environmental (ecological), and social performance. Sustainable activities work within acceptable economic and social systems and do not degrade the environment to a level unable to support future generations or ecosystems. Programs may vary the emphasis placed on each aspect, e.g., biology may focus more on environmental aspects, sociology on social, or business on economic. Sustainability shall be incorporated into the Rowan University curriculum as an Institutional Learning Objective, similar to the Multicultural & Global requirement.

Recommended Educational Objectives

Although the specific implementation of this recommendation will need to be developed within the needs and constraints of the general education and programmatic curricula, a minimum level of competence should include understanding of:

- The current situation regarding sustainability, such as human-caused climate change, population growth, biodiversity loss, pollution, etc.
- The human causes of non-sustainability, including individual and institutional contributions
- The best proposed solutions to return to sustainability
- The relationship between sustainability and the triple bottom line (environment, society, and economics issues)

Rationale

Rowan Students will be faced with significant challenges during their lifetimes. The current world population is part of a grand and novel experiment: "What happens when more than six billion people live on the Earth?" Past population crises have been avoided through technological advances, e.g., the green revolution of the mid 20th century; however, population can grow beyond the possibility of terrestrial technological solutions. Estimates of how many people can be sustained by the Earth vary greatly, and include values both below and above our current population. The possibility that we have already exceeded the Earth's carrying capacity is a prime reason to include sustainability in the curriculum.

While there is some upper theoretical limit to the Earth's carrying capacity, practical limits depend on how we choose to live, how we let other species live (or die), how we maintain the Earth's environment, and the technologies we employ in the pursuit of these objectives. Managing these issues will have significant social and economic impacts. Currently, the USA comprises approximately 5% of the World population, but accounts for 20-25% of the resources consumed annually. Most estimates indicate that it would take approximately five Earths to sustain the entire Earth's population in the manner of the average USA citizen. The populations of emerging economies, such as China, India, and Brazil, are looking to take back some or all of the excess resources we consume. Our students must be prepared for the coming environmental, social, and economic challenges by including sustainability in the Rowan University curriculum.

The Earth is in the midst of an anthropogenic extinction event. Extinction rates are many times higher than

the background extinction rate, with the current rate reported to be as high as 140,000 species per year. There are many reasons, both self serving and altruistic, for students to understand the link between choices we make and the well-being of other species.

Major environmental challenges face us, such as human caused climate change. There is scientific consensus that human caused climate change will have significant effects on sea level, storm intensity, flooding and drought, and agriculture. This scientific consensus is clearly demonstrated in the reports of the Intergovernmental Panel on Climate Change; however, many students do not understand the scientific process well enough to adequately process common misinterpretations promoted by their friends and family, the media, and politicians. Other environmental challenges that need to be understood to be an intelligent actor in our society include depletion of easily obtainable energy sources, access to clean water, and toxins in air, water and soil.

Just maintaining the current world population will require changes in lifestyle and improvements in technology. Buildings and travel must become more efficient. Clean energy must become more prevalent. Individuals may need to make lifestyle changes, such as living in smaller houses, living closer to work, or using public transportation. Students that understand sustainability will be better able to both influence and adapt to the environmental, social, and economic challenges of the future.

Acceptance:

I give my approval. I have forwarded this item to _____ for implementation.

No approval is actually needed. I have forwarded this item to the following individual or office for informational purposes only:

ADDITIONAL REVIEW NEEDED:

I am willing to give approval if the following modification(s) are made:

Before I can approve or reject this item, I need clarification on the following:

I have forwarded this item to the following individual or office for further consideration and consultation.

Rejection:

I decline acceptance of this item for the following reason:

Please Return this Copy to the University Senate President ~ Retain a Copy for Your Records