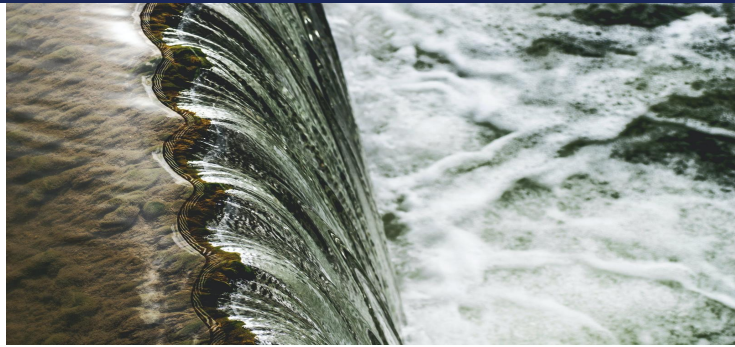


RENEWABLE ENERGY PURCHASE AGREEMENT (CRP)



PROJECT DESCRIPTION

Producing electricity is responsible for 27.5% of the United States greenhouse gas emissions. These greenhouse gases come specifically from burning fossil fuels for power. Reducing Villanova's fossil fuel consumption will significantly reduce the greenhouse gas emissions from electricity production. Villanova will begin to draw at least 25% of electricity from renewable energy sources by 2021, and 100% by 2030. This will help reduce energy impact and Scope 2 emissions.

PROJECT UPDATES

Villanova University entered a renewable energy contract and is currently powered by 50% hydropower, working towards the goal of 100% renewable energy by 2030.

PROJECT OUTCOMES

- Eliminate Scope 2 Emissions.
- Maintain competitive attractiveness to sustainably minded applicants.

AFFECTED METRICS



Metric	Metric Description	2021 Key Results
7.1	Renewable energy share in the total campus energy consumption (Scope 1 and 2).	Buy at least 10% of electricity from renewable sources.
7.3	University investment (% of investments) in support of clean energy research, development, and renewable energy implementation on campus.	
9.2	Scope 1 and 2 net greenhouse gas emissions	
13.1	Scope 1 and 2 net greenhouse gas emissions	Develop a plan to reduce Scope 1 and 2 emissions to meet 1.5 IPCC report by 2030. Buy at least 10% of electricity from renewable sources.

GREEN OFFICE AND LAB PROGRAM (CRP)

PROJECT DESCRIPTION



The green lab program will be further developed, and a corresponding green office program for staff and faculty will be initiated. This includes reducing office generated waste, switching to paper with higher recycled content, encouraging reusable solutions, reducing office energy consumption, and laboratory water consumption. This program will increase visibility of sustainability and foster a sustainable ethos in offices and labs across campus.

PROJECT UPDATES

N/A

PROJECT OUTCOMES

- Increase number of labs participating in the green lab program by 10%.
- Develop a green office program based on peer institutions, tailored to Villanova's office/department structure.
- Test the green office program on 2-3 willing departments.

AFFECTED METRICS



Metric	Metric Description	2021 Key Results
6.1	Total potable water use per year.	Sub-meter the potable water consumption of the ten highest consumption buildings on campus.
7.2	Campus's energy intensity (site energy)	Develop a plan to reduce energy intensity.
9.2	Scope 1 and 2 net greenhouse gas emissions.	
9.3	Percentage of campus buildings built and certified to current sustainable standards (AASHE and LEED as of 2019)	Develop a plan to reduce Scope 1 and 2 emissions to meet the 1.5 IPCC report by 2050.
12.1	Proportion of total waste disposed of in a non-circular manner	Conduct a waste audit and develop an action plan.
13.1	Scope 1 and 2 net greenhouse gas emissions.	Develop a plan to reduce scope 1 and 2 emissions to meet the 1.5 IPCC report by 2030. Buy at least 10% of electricity from renewable sources

COMMUTING EMISSIONS REDUCTIONS (CRP)

PROJECT DESCRIPTION



In 2017, transportation accounted for 28.9% of the United States' greenhouse gas emissions. Villanova hopes to reduce this by increasing the cost of parking to encourage students, faculty, and staff to not drive to campus. The reduction of people on the road will help to loosen vehicle facilities in addition to reduce the greenhouse gas emissions produced from gasoline powered cars. Villanova will work with Septa to lower the cost of monthly train passes for students, faculty, and staff to incentivize public transportation. This provides individuals with an alternative that reduces commuting emissions and strengthens a trend in everyone. With the number of cars being driven to Villanova, it could significantly reduce Scope 3 emissions. Additional funds can be used to promote discounted SEPTA tickets, EV parking spots, carpool discounts, electric campus shuttle, covered bike storage, etc.

PROJECT UPDATES

N/A

PROJECT OUTCOMES

- Estimate costs of alternative transportation incentives.
- Base the increased parking fee on incentive cost.
- Reduce Scope 3 emissions from commuting.
- Reduce traffic around campus.
- Reduce parking stress on campus.

AFFECTED METRICS



Metric	Metric Description	2021 Key Results
9.1	Net carbon emissions emitted by student faculty, and staff commuters	Develop comprehensive plan to reduce commuting related carbon emissions.
11.5	Incentives for faculty across all disciplines to	Develop a plan to reduce commuting miles by car.
13.2	Percentage of students who graduate from	Conduct a comprehensive Scope 3 emissions inventory.

CAMPUS-WIDE ENERGY EFFICIENCY (CRP)



PROJECT DESCRIPTION

The United States uses more energy per capita than any other country in the world. This problem cannot only be solved by switching to renewable energy but must also be addressed by reducing Villanova's energy impact. An energy audit will be conducted on campus and adjustments will be made to decrease energy intensity. All campus lighting will be updated to LEDs and occupancy sensors will be installed to further reduce lighting loads. HVAC and building envelopes will be evaluated and requisite improvements will be completed. These improvements will save the university money by reducing energy needed and decrease energy impact and greenhouse gas emissions.

PROJECT UPDATES

N/A

PROJECT OUTCOMES

- Install campus wide meters, see "campus wide smart meter project".
- Plan for building level LED lighting replacements based on planned upgrades to buildings.
- Improve the energy efficiency of equipment.
- Reduce energy intensity HVAC.

AFFECTED METRICS



Metric	Metric Description	2021 Key Results
7.2	Campus's energy intensity (site energy).	Develop a plan to reduce energy intensity.
9.2	Scope 1 and 2 net greenhouse gas emissions.	
13.1	Scope 1 and 2 net greenhouse gas emissions.	Develop a plan to reduce Scope 1 and 2 emissions to meet the 1.5 IPCC report by 2030. Buy at least 10% of electricity from renewable sources.

CAMPUS-WIDE SMART METERING PROGRAM (CRP)

PROJECT DESCRIPTION



Water scarcity affects more than 40% of the world's population. In addition, 14% of the world's population did not have access to electricity in 2017 (according to the EPA). Villanova has the ability to use electricity and run water whenever needed. Villanova's usage will be better understood with the installation of electric and water smart meters on campus to track utility usage more granularly and use this information to improve efficiency and install greener technologies. This project will help Villanova understand and reduce its water usage impact.

PROJECT UPDATES

N/A

PROJECT OUTCOMES

- Install campus wide meters, see "campus wide smart meter project".
- Plan for building LED lighting replacements based on planned upgrades to buildings.
- Improve the energy efficiency of equipment.
- Reduce energy intensity from HVAC.

AFFECTED METRICS



Metric	Metric Description	2021 Key Results
6.1	Campus's energy intensity (site energy).	Sub-meter the potable water consumption of the ten highest consumption buildings on campus.
7.2	Campus's energy intensity (site energy).	Develop a plan to reduce energy intensity.
9.2	Scope 1 and 2 net greenhouse gas emissions.	
13.1	Scope 1 and 2 net greenhouse gas emissions.	Develop a plan to reduce Scope 1 and 2 emissions to meet the 1.5 IPCC report by 2030. Buy at least 10% electricity from renewable sources.

REWARDS FOR TAKING PUBLIC TRANSPORT TO VILLANOVA EVENTS



PROJECT DESCRIPTION

Encourage people coming to sporting and theatrical events to take SEPTA by giving either a discount on tickets or a free voucher for food and drinks at the game. People will be incentivized to choose sustainable transportation and support Villanova activities. Public transportation lowers carbon emissions and creates a social opportunity in which fans can travel together. This will help create a united community that supports sustainable transportation.

PROJECT UPDATES

N/A

PROJECT OUTCOMES

- Reduce commuting miles to sports games.
- Reduce Scope 3 carbon emissions.
- Reduce parking load on campus during events.

AFFECTED METRICS



Metric	Metric Description	2021 Key Results
9.1	Net carbon emissions emitted by student, faculty, and staff commuters.	Develop comprehensive plan to reduce commuting related carbon emissions.
11.5	Proportion of commuter miles traveled using low carbon transportation (public transit, carpooling, walking, biking, and electric vehicles).	Develop a plan to reduce commuting miles by car.
13.2	Scope 3 net greenhouse gas emissions.	Conduct a comprehensive Scope 3 emissions inventory.

UNIVERSITY VEHICLE EMISSION TRACKING

PROJECT DESCRIPTION



Standardize a way to track University vehicle emissions. This includes standardizing how to track gallons of fuel bought and miles traveled.

PROJECT UPDATES

N/A

PROJECT OUTCOMES

- Identify all departments that purchase fuel, or whose operations required direct non-university usage.
- Use existing documentation to identify possible fuel tracking mechanisms.

AFFECTED METRICS



Metric	Metric Description	2021 Key Results
7.4	Equivalent Gallons of fossil fuel burned (gasoline, diesel) per mile traversed by university vehicles	
9.2	Scope 1 and 2 net greenhouse gas emissions.	
13.1	Scope 1 and 2 net greenhouses gas emissions	Develop a plan to reduce Scope 1 and 2 emissions to meet the 1.5 IPCC report by 2030. Buy at least 10% of electricity from renewable sources.

PROMOTION OF REUSABLE WATER BOTTLES



PROJECT DESCRIPTION

Install more water bottle filling stations as well as coffee mug cleaning stations near every coffee shop on campus to promote the use of reusable mugs and bottles. The use of reusable water bottles will eliminate the need for single-use plastic water bottles. People will be able to find filling stations and cleaning stations for their reusable beverage containers throughout campus. Reusable bottles will decrease the amount of waste produced, while increasing awareness and sustainable lifestyles on campus.

PROJECT UPDATES

N/A

PROJECT OUTCOMES

- Identify high traffic areas that do not currently have a hydration station. Set up a two-year plan to install new stations.
- Develop a capstone project for mechanical engineering students to design a mug cleaning station

AFFECTED METRICS



Metric	Metric Description	2021 Key Results
6.1	Total potable water used per year	Sub-meter the potable water consumption of the ten highest consumption buildings on campus.
6.4	Mass of plastic due to water and beverage consumption sold on Villanova's campus (soda, sports drinks, water, coffee, etc.).	Reduce the sale and availability of single use plastics by 50%.
12.1	Proportion of total waste disposed of in a non-circular manner.	Conduct a waste audit and develop an action plan.
14.2	Percent of unrecycled plastic waste produced on campus	Conduct a waste audit and develop an action plan.

WASTE DISPOSAL UNIFORMITY

PROJECT DESCRIPTION

Restructure the bin system on campus so it is more uniform and educational. Work with the student life committee to make informative signs that best depicts and encourages proper waste separation. Set up the system to allow space to add compost bins in the future. A uniform waste disposal system will make it clear what waste goes where, increase recycling, and reduce contamination of the waste stream.

PROJECT UPDATES

N/A

PROJECT OUTCOMES

- Complete a waste audit to identify areas of inconsistency and contamination in our waste stream (see waste audit project).
- Assess peer institution waste stream systems
- Test out a new waste bin solution in select areas and assess its effectiveness over the current system.
- Implement the new waste bin and signage system

AFFECTED METRICS



Metric	Metric Description	2021 Key Result
2.3	Percentage of food disposed of in a non circular manner.	Assess the adequacy of family leave policy for faculty and staff.
12.1	Proportion of total waste disposed of in a non-circular manner.	Conduct a waste audit and develop an action plan.
12.2	Percentage of food disposed of in a non circular manner.	Divert 100% of pre-consumer food waste from landfill or incineration.
12.3	Campus recycling rate.	Conduct a waste audit and develop an action plan.
14.2	Percent of unrecycled plastic waste produced on campus.	Conduct a waste audit and develop an action plan.

DINING SERVICES SUSTAINABILITY

PROJECT DESCRIPTION

Collaborate with student life to change student behavior towards food. Work towards using compostable packaging and post-consumer composting. Apply a surcharge for plastic packaging and display more signage about eating sustainably. Provide nutrition and sourcing information for food served and how it compares to other foods and diets. Integrate what it means to have a truly sustainable diet nutritionally, ethically, and environmentally. Continue to provide access to dining options for members of the community with dietary restrictions. This project will encourage students to think more sustainably about food and choose options with greater nutrition and less environmental impact.

PROJECT UPDATES

N/A

PROJECT OUTCOMES

- Reduce food waste
- Reduce packaging waste
- Improve nutrition
- Reduce environmental impact of Villanovans' diets
- Ensure access to food for all diets

AFFECTED METRICS



Metric	Metric Description	2021 Key Result
2.2	Proportion of students, faculty, and staff that are meeting their caloric and nutritional needs without consuming in excess.	Measure the nutritional health of Villanova's population and assess the needs of those with restricted diets due to allergies, religious restrictions, or other dietary restrictions.
2.3	Percentage of food disposed of in a non circular manner.	Divert 100% of pre-consumer food waste from landfill or incineration.
6.4	Mass of plastic due to water and beverage consumption sold on Villanova's campus (soda, sports drinks, water, coffee, etc.)	Reduce the sale and availability of single use plastics by 50%.
9.2	Scope 1 and 2 net greenhouse gas emissions.	
13.1	Scope 1 and 2 net greenhouse gas emissions.	Develop a plan to reduce scope 1 and 2 emissions to meet the 1.5 IPCC report by 2030. Buy at least 10% of electricity from renewable sources.
14.2	Percent of unrecycled plastic waste produced on campus.	Conduct a waste audit and develop an action plan.

WASTE AUDIT AND ACTION PLAN

PROJECT DESCRIPTION

Everyday items that could be recycled or composted are being thrown in the trash. This greatly increases the volume of waste going to landfills. When landfills fill up, additional land is used that could otherwise be utilized for different purposes. Villanova strives to lessen its contribution to the local landfills by conducting a waste audit to calculate how much recyclable material is misplaced, how much total waste is in each stream, and the amount of post-consumer organic waste is going to the landfill. Auditing waste also helps identify other problem areas and could help avoid hindering the health of marine ecosystems and promote better food management.

PROJECT UPDATES

N/A

PROJECT OUTCOMES

- Understand campus recycling rate, contamination rate, and waste habits
- Develop an RFI for third party waste audit managers to conduct a campus wide waste audit
- Contract for a campus wide waste audit in Fall 2020

AFFECTED METRICS



Metric	Metric Description	2021 Key Result
2.3	Percentage of food disposed of in a non circular manner.	Divert 100% of pre-consumer food waste from landfill or incineration.
6.1	Mass of plastic due to water and beverage consumption sold on Villanova's campus (soda, sports drinks, water, coffee, etc.)	Reduce the sale and availability of single use plastics by 50%.
12.1	Proportion of total waste disposed of in a non-circular manner.	Conduct a waste audit and develop an action plan.
12.2	Percentage of food disposed of in a non circular manner.	Divert 100% of pre-consumer food waste from landfill or incineration.
12.3	Campus recycling rate.	Conduct a waste audit and develop an action plan.
14.2	Percent of unrecycled plastic waste produced on campus.	Conduct a waste audit and develop an action plan.