Obtaining RECs for UVM Net Zero Energy

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Our group is working on understanding the process of obtaining Renewable Energy Certificates for the renewable solar energy produced by the four solar arrays that will hopefully be used by the Rubenstein School of Environment and Natural Resources (RSENR) at the University of Vermont (UVM) as part of their plan to become Net Zero Energy. After this process is done, we will design a plan to most effectively apply these certificates to the different buildings of the Rubenstein School. This would allow us to claim the electricity used in these buildings is mitigated by the on-site renewable solar energy produced by the solar arrays. We are also working on a strategy to use Renewable Identification Numbers, or RINs, to mitigate the thermal energy requirements of these buildings. The goal of this project is to finally be able to claim RSENR as a net zero energy school.

Renewable energy certificates, or RECs, are essentially an accounting system capable of keeping track of renewable energy producers and consumers. It is critical that RECs are able to do this because any electricity produced, be it from renewable or fossil fuels, cannot be traced once it has entered the grid. For example, UVM has 550,000 kWh of solar being produced by four solar arrays, which translates to 550 RECs as each REC is 1,000 kWh. These RECs, however, have not been certified. To be able to utilize a REC it needs to first be certified by a third-party organization. This requires at least 6 months of data on energy production to verify that the claimed energy production is being met. We are currently quantifying that data to determine exactly how many RECs the Rubenstein School will have to use to mitigate energy use on our school.

RINs work in almost the same way, except that they apply to renewable sources of biogas. This can include sources like landfills, composting, or digesters.

While our group is not directly reducing energy usage within RSENR, the project we are tackling is a crucial step required to officially declare Rubenstein School buildings as net zero energy. Already, we have learned a great deal about how RECs and RINs work and the framework in which they function.

We have also learned about Burlington's public utility commission and the UVM commission and how they are deciding to which colleges the RECs will be assigned. We have worked with both organizations outside of class to achieve our goal.

At the end of this semester, we hope to all have a healthy understanding of how RECs and RINs are produced, as well as the legal steps necessary to legitimize them. In doing so, we hope to officially declare several RSENR buildings as net zero energy!