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T306: Abstract

Leon County is facing concerns about rising energy use. The county has set a goal of reducing their greenhouse gas emissions by 30 percent by 2030. Leon County commits to decreasing the impacts of climate change. They are teaming up with us to explore how renewable technology helps the public and the environment. There are many ways to meet their goals. However, all had required a feasibility study, analysis, and simulation. Solar technology was chosen to be the focus for our project as it was the best fit based off of Leon County's goals.

This project has three different stages. Using different software and tools, we have built models that showed the overall performance from adding solar generation. This provided a look at how such equipment fits into their renewable energy goals. In the economic stage of the project, research was done into costs of various systems. Additionally, tax requirements, funding opportunities as well as the return on investment were analyzed. This provides Leon County with a snapshot of their costs and returns given the different options. The final stage provides a set of designs with which Leon County can build. We determined that the best way to use the available resources was to build solar charging stations for parks. The station results in low running costs, low maintenance, and a reduction on the load power for conventional grids.

The result of this project is both a detailed analysis and design. This provides many beneficial options to be considered for the Leon County's Office of Resource Stewardship to choose from. As time progresses, the County can use any number of our options given their available funding.