Can Juneau Sustain a Complete Transition to Green Technology?

Williams, Annabella (School: Thunder Mountain High School)

Though acquiring about 99% of its yearly electrical energy from hydropower plants, Juneau is nearing its consuming capacity. As global warming advances, more and more people are switching to green technology in hopes of counteracting the effects of a changing climate. This study aims to prove that Juneau needs to start looking into more electrical energy sources to keep up with a citizen-wide switch to a sustainable lifestyle. The technology focused on in this study includes heat pumps, electric vehicles, and shore power ports. To test the hypothesis that all of Juneau's implementing heat pumps, electric vehicles, and shore power ports would lead to an energy deficit, I first researched what Juneau's current energy situation was. I then used various public data sources to compile an estimate on how much energy it would take to support personal electric vehicles and heat pumps, along with powering docked cruise ships during cruise ship season. Once putting all of this together, I found that Juneau would be exceeding the yearly average of electrical generation by about 116 GWh. These results show that Juneau is nearing its capacity. If it wants to support a greener and more sustainable future, then the city needs to look into more sources of electrical energy.

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