Every year Burning Man Festival brings a temporary population of almost 80,000 people to the middle of the Nevada desert. Construction and maintenance of an entire city over the course of the week long festival requires a large amount of energy in a short period of time. With all of the renewable energy sources available on the Fly Ranch site, there is more than enough energy available to power Burning Man Festival, however, without a battery, these energy sources cannot be regulated to be available when they are needed. When used in conjunction with other renewable energy designs, *Grounded* provides an energy storage solution, allowing the abundance of renewable energy on the site to be stored and released for human use. It balances the steady input of energy from natural resources with the annually fluctuating human population, creating a buffer to mitigate the strain of a temporary population influx on the natural environment.

GROUNDED

Although there is a variety of renewable energy sources on the site, solar energy is by far the most abundant. Using this as an example, we can calculate the annual solar energy potential in the combined area of the low and high impact zones

(2, 741,514 m^2) x (191.8 W/mm^2) x (24h/day) x (365 days/year) =

+4,606,204 MWh

Even with the 25% efficiency of most solar power generating technologies, just the sun on the site produces enough energy to power Black Rock City.

Carbon emissions analyses from 2006, when Black Rock City's population was half its current size, show 8.19 million pounds of CO_2 being produced solely from on-site activities. Adjusting for today's population of almost 80,000, Black Rock City's residents in one week consume

(8,190,000 lbs CO_2/40,000 people) x (80,000 people) x (1MWh/1558.8 lbs CO_2) =

-10,508 MWh

Currently this energy mostly comes from generators. Despite many of these generators using greener bio-diesel fuels, they still produce significant amounts of carbon emissions.