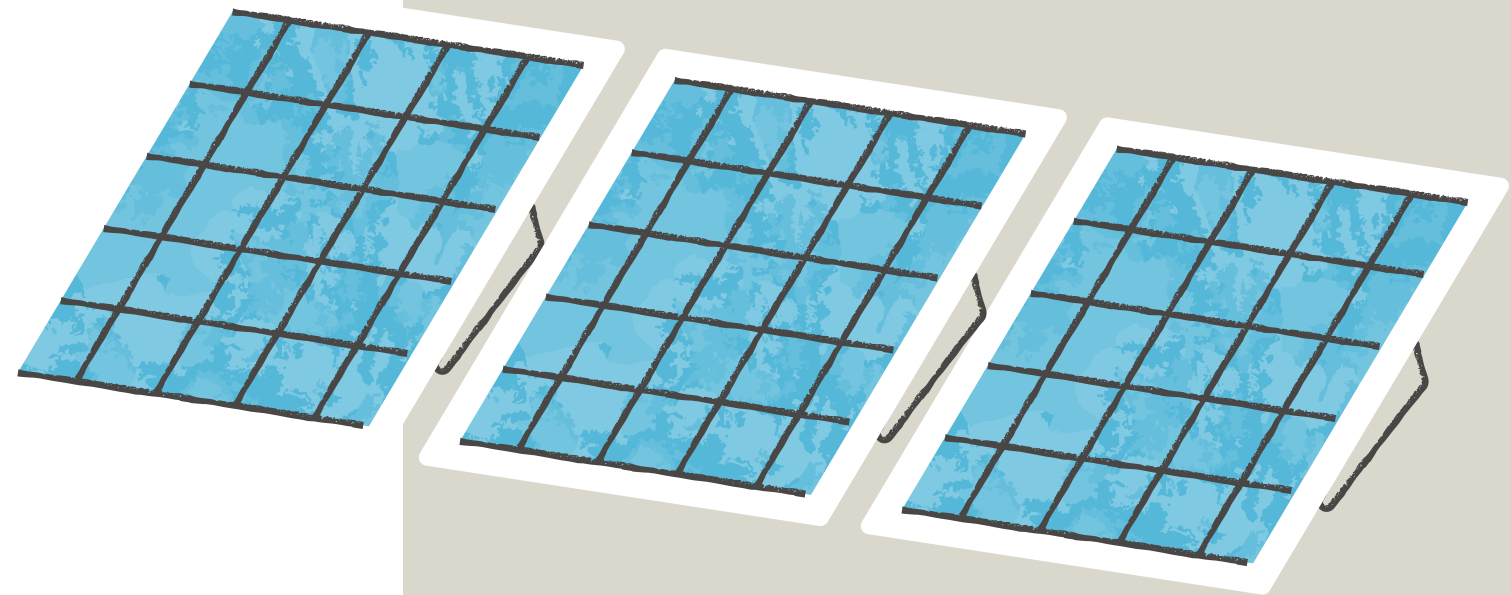


# Sustainable Energy Inc.

An Iowa Corporation



Capital cost is a barrier to decarbonizing before total climate collapse. I calculated from NREL data in its 1H 2018 benchmark study encompassing ingot formation to modules that it cost 405 to 505 million dollars per Gigawatt of annual capacity for the set of factories used to make solar panels. That means at least 350 billion dollars for the 875 GW/year of factories to do solar PV for 8 billion people at 10 kilowatts each by 2030. That's a big barrier to ramping fast enough to meet the science deadline!