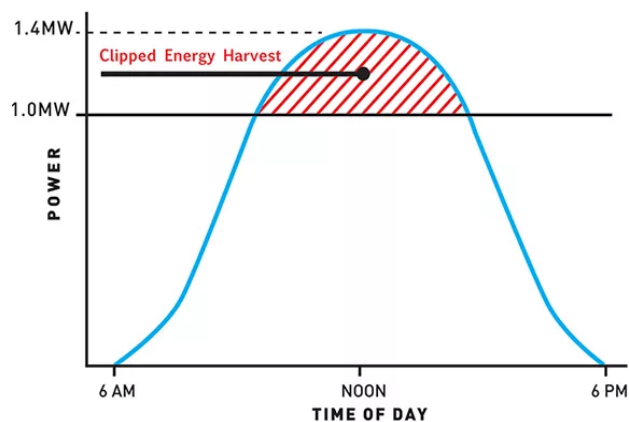


BATTERY ENERGY STORAGE SYSTEM (BESS)

A Battery Energy Storage System (BESS) is a fully contained unit that will sit within the center of the project fence. The BESS will be able to store and unload electricity to the distribution electrical grid at any time of day. Solar+Storage, although this is a newer concept in the solar industry, integrating storage into our solar projects is something US Solar is not just proposing but constructing and putting in operation. Stand-alone solar only generates power to the electric grid during daytime hours. Though most individuals use a majority of their daily electricity when we first get up and between getting home from work and going to bed. Most of this time the sun is lower on the horizon or completely down.

The current grid operates where if there is not enough energy being produced in an area that needs it most, the electrical company will have to transmit power. Possibly from hundreds of miles away. Solar + Storage allows energy to be produced, stored, and used within the distribution area (typically a few miles radius). The BESS allows for energy shifting to take advantage of peak rate periods or to allow utilities to address daily peak demand that falls outside periods of solar generation. Then when energy is most needed, the BESS can be discharged to the grid for the neighboring homes, businesses, stadiums, etc. to use. Essentially creating a microgrid with a more resilient infrastructure.

In Illinois, US Solar is using a DC (Direct Current) Coupled Battery Systems. This means that electricity generated by the solar panels will only have to be inverted once. Eliminating a 2%-4% system loss from an AC (Alternating Current) – Coupled Battery System. The solar garden will be overbuilt, and the overbuilt portion will be clipped and used to charge the BESS, all while the system is exporting the full AC capacity onto the grid. The energy may then be exported from the BESS whenever it is needed. The DC Coupled BESS is unidirectional, meaning it cannot import power from the grid and will only be charged from the solar panels. There will never be an opportunity for an electricity to flow opposite direction and be charged by the ComEd grid.



The safety of the system is our number one priority. The system will be remotely operated 24/7 and can be shut down by a click of a button. Under normal operating conditions there will be no noise or leaching of any materials. The BESS is installed in a fully sealed cabinet that is then placed in a large containment cabinet. The large containment cabinet will hold multiple battery cabinets. The cabinets are fully enclosed and weather and dust resistant. In a thermal event (fire) the cabinet would be flooded with water, or a dry chemical fire suppression system. In our experience, local first departments have taken their own approach to response protocols. Eneon ES (BESS Designer) can provide all battery-related information including training on the fire safety system that comes standard with detailed design. We recommend that when we go in for our building permit that our plans be reviewed by the jurisdictional Fire Chief for any questions. The batteries and all materials brought onsite are tested to the highest UL Standards.

Ultimately, the goal is to produce clean power and use clean power where and when it is most needed. This will reduce energy emissions and electrical costs for you and your neighbors.