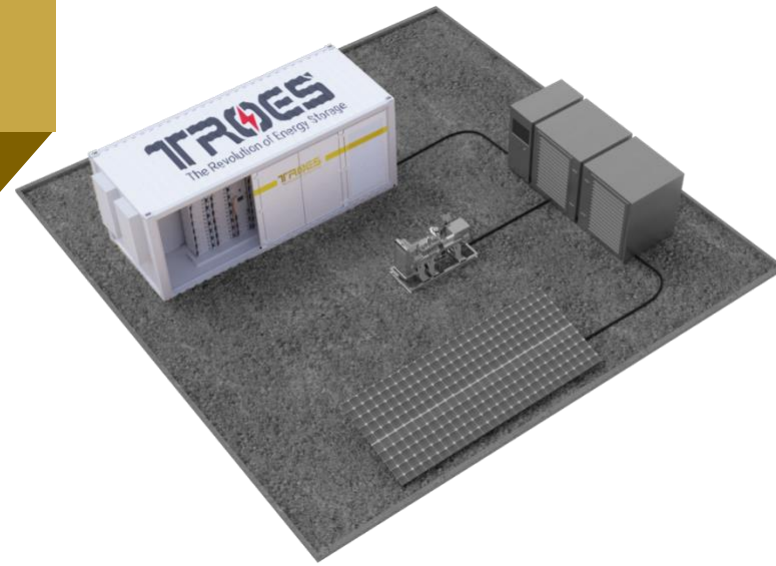


## MICROGRID

### Off-Grid Microgrid Solar PV with Battery Energy Storage System



#### CLIENT CHALLENGE

A client located in an off-grid location relies 100% on fuel generators to power. The load is unpredictable so the generator cannot operate at peak efficiency. Meanwhile, fuel prices continue to increase.

TROES' Battery Energy Storage System connected to the generators with solar PV integration will reduce fuel dependency throughout the year. Such integration will allow the generators to operate at optimum frequencies, reduce operation hours, and curb emissions.

#### FINANCIALS & BENEFITS

A modeling was done based on existing load profile where an 85kW solar PV system and a 100kW BESS was integrated to the client's 100kW diesel generator. This installation results in reducing annual fuel dependency by 40% without solar, and completely reduces fuel dependency with solar during the summer months. This configuration also allows the generators to operate at their optimal frequency, thus reducing annual O&M costs along with noise and emission levels.

#### RESULTS



**US\$200,000**  
Initial Cost



**5 Hours**  
Daily Usage



**40%-100%\***  
Fuel Reduction

\*Without and with solar PV