

# EmpowerGrid

Many workers at the city's indoor agriculture farms have RVs and campers on their properties, and 90% operate on diesel generators.

Economically and socially, the high costs of diesel impose significant burdens on LMI families, contributing to energy insecurity and impeding local economic development.

The team at EmpowerGrid is active building microgrids with over 3.8GW of projects under contract and has the #1 downloaded white paper in 2020 on Nanogrids.

Located in the Mojave Desert, California City, CA, is the third-largest city in California based on geographical size, with less than 15,000 residents. The city is trying to grow, but it is power-constrained because the utility can't give it the power it needs.

**ELECTRIFICATION**

**HOW THE SYSTEM WORKS**  
Optimization and delivery of green power in off-grid communities with cloud connected electronic switch technology.  
1kW de-centralized autonomous operating system to power up to 8 homes.

**POWER PANEL**  
The power configuration, which plugs into the power panel, consists of:  
A) (2) 545-watt PV Panels  
B) (4) 12-volt, 100 AH Gel batteries

4G Network connection to cloud for remote access and control of all circuits.  
(B) electronic switches (see next page for details) powers up to (B) homes  
4G Network Outlet  
Each home receives 48 VDC from Smart Energy Router. Outputs 12 VDC for TV, Fridge/Lights and USB ports.

**io nanogrid**  
All of the loads plug into the 4G network outlet

**Electronic Switch Technology**  
Limits to milliseconds (0.00001) of a second.  
Limits inrush current  
Eliminates arcing  
Limits short circuit current

Speed and Safety of Electronic Switch Technology allow the creation of DC power equipment that wasn't possible before

Proprietary Electronic Switch PCBAs  
WiFi enabled communications for monitoring and recording energy usage and energy quality data

12 Volt Direct Current Loads	Power Usage, Wattage	Quantity	Total
Refrigerator, 118 Liter	85	1	85
Outdoor Light	30	1	30
Indoor Strip Light	9	2	18
Round Ceiling Light	18	1	18
Indoor Table Lamp	15	1	15
32" Television	38	1	38
Free Standing Fan	23	1	23

Total Maximum wattage per home... 227