Electrification Factsheet
Azraq Camp - Jordan
July 2019

UNHCR and the IKEA Foundation have created the first refugee camp in the world powered by renewable energy. A medium- and low-voltage power network funded by the Saudi Fund for Development connected the IKEA Foundation Solar Plant to refugee shelters, formal and informal businesses, offices and utilities, providing year-round electricity in the camp.

Electricity Access

9,177 shelters
connected to the grid

Average of 84 kWh per month per household or 2.7 kWh per day

16
hours of electricity provided daily to shelters

NGO 22
organizations and operational facilities supplied with electricity

Solar Plants Environmental Impacts

8,000 MWh's of clean energy
produced every year

6,300 tons per year reduction of CO2

- 1,250 US passenger car emissions for a year
- The burning of 2,900 metric tons of coal

Solar Plants Cost Savings

$2.75M
million of annual reduction in electricity bills

The construction cost of approximately $1.49/Watt

Anticipated return on investment within 3 years
after the completion of the project

Azraq Electrical Network Physical Facts

The Solar Plant uses **7,788 (phase I), 5,280 (phase II)** and **3,550 (phase III)** solar PV panels with a lifespan of 25 years. This is the equivalent size of **13** football fields

19 km's of medium voltage cables and **2,700** low voltage poles connect shelters and operational facilities to the local electrical grid.

Improved Lighting

16,950
solar lanterns distributed to households

472
solar street lights installed in the camp

424
LED street lights installed in the camp

14,735
Energy Efficient Lightbulbs (LED) distributed

Livelihood Opportunities

200 refugees
employed in the solar plant construction

250+ refugees
employed in the construction of the electrical network

234 shops
connected in the 2 marketplaces

10 trained refugee 'electricians'
support UNHCR electrical activities in the camp

IKEA Foundation Renewable Energy Phases
Azraq Camp - Jordan
July 2019

The Azraq Camp Solar Project was implemented over three concurrent phases. By mid-2019 all three phases of PV solar infrastructure were completed. By October 2018, connections to village 2 and 5 were finalized. With the completion of phase III in August 2019, overall Azraq Camp is approximately 70% powered by renewable energy.

Phase 1 | 2 MWp on grid
Completed in June 2017
Connected to Villages 3 and 6

0% 100%

Covers up to 35-40% of camp's electrical needs including:

4,903 total shelters
+ **22** organizations & operational facilities
+ **2** marketplaces

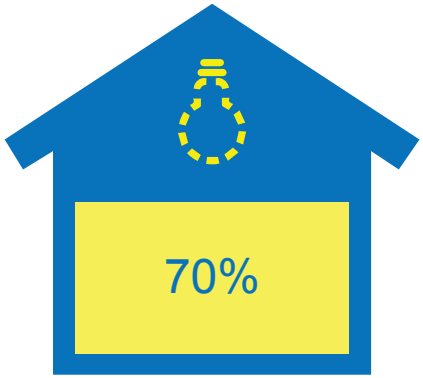
Phase 2 | 2 MWp + 1.5 MWp on grid
Completed in October 2018
Connected to Villages 2, 3, 5 and 6

0% 100%

Will cover up to 55% of camp's electrical needs including:

Up to **10,470** total shelters
+ **22** organizations & operational facilities
+ **4** marketplaces

Phase 3 | 3.5 MWp on grid + additional 1.5 MWp off grid
Completed in August 2019



Connected to Villages 2, 3, 5 and 6

0% 100%

Will cover up to 70% of camp's electrical needs including:

Up to **10,470** total shelters
+ **22** organizations & operational facilities
+ **4** marketplaces

How the 2.7 kWh's in Azraq compares to average daily household consumption around the world:

Source: World Energy Council 2014