Manama solar industry

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Gain comprehensive insights into the statistics and metrics surrounding the solar production industry in Bahrain

Bahrain enjoys over 3,350 hours of sunshine annually.1 Daylight hours in Manama fluctuate between 10.5 and 13.8 hours, with sunshine durations ranging from 7.3 to 11.3 hours.2

A domestic rooftop PV system study in Bahrain recorded a maximum daily specific yield of 6.12 kWh/kWp under optimal conditions. 3 On average, the annual yield is estimated to be 1,600-1,700 kWh per kWp installed.4

In Bahrain, electricity costs about $0.042 per kilowatt-hour (kWh) for homes and $0.077 per kWh for businesses (for usage over 5,000 kWh). However, the government provides a subsidy for Bahraini households, which means they pay as little as $0.008 per kWh for the first 3,000 kWh they use each month.5

Bahrain’s electrical grid is generally reliable. The country generates approximately 36 billion kWh of electricity annually, exceeding its consumption of 34.52 billion kWh, signifying a generation capacity covering 103% of the national demand.6

The Electricity and Water Authority (EWA) has also implemented a grid modernization program, leading to a 5% reduction in power outages.7

As of June 2023, Bahrain’s installed solar power capacity is 57 MW.8

Bahrain’s National Renewable Energy Action Plan (NREAP) targets 200 MW of installed solar capacity by 2025 and 400 MW by 2035. These goals aim to achieve 5% and 20% of total electricity from renewables, respectively.9

Representing over 99% of Bahrain’s electricity generation,12 the levelized cost of electricity (LCOE) for natural gas in Bahrain is approximately $0.074 per kWh.10

The LCOE for solar PV is projected to be $0.049-$0.063/kWh in 2025 and $0.036-$0.055/kWh by 2035. This is significantly lower than the actual cost of electricity from conventional sources.11

The average LCOE for offshore wind farms in Bahrain is estimated at $0.12/kWh in 2019.11

As of 2022, natural gas constitutes 99.97% of Bahrain’s electricity generation. Solar energy contributes only 0.03% but is expected to increase significantly with new projects.12

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