

MGM Resorts International



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The high-energy vibe of Las Vegas continues to provide a shining example of the power of renewable energy. MGM Resorts International and NRG’s business solutions and renewables teams have completed phases I and II on what has become the world’s second-largest rooftop solar photovoltaic array at the Mandalay Bay Resort Convention Center.

Combined, the two-phased project is predicted to deliver 8.3 MW DC (5 MW AC). Phase I was completed in October 2014; Phase II in June 2016.

At full production, the rooftop installation is expected to produce 25 percent of Mandalay Bay’s power demand, taking full advantage of the sunny, desert climate of Las Vegas.

This, in turn, will also lower demand on the southern Nevada electricity grid at the hottest time of the day. The project diminishes the need to import energy from outside the local energy system and reduces energy costs for the entire Las Vegas system.

MGM Resorts made the strategic decision to utilize solar at the Mandalay Bay Resort Conference and Convention center because of its large, sun-oriented rooftop space. Mandalay Bay buys the energy created by the array through a power purchase agreement.

The company has made it a point of emphasis to reduce its natural resource consumption through various sustainability initiatives. Over the past five years, the company has reduced its energy intensity by more than 12 percent and has saved more than 2.5 billion gallons of water.

The two-phased approach allowed the NRG team to deliver a solution both quickly and in a manner that could accommodate the ever-evolving level of solar technology.

Specifically, phase II incorporates Ten K Solar’s “tenK” REFLECT system, a technology designed to help increase efficiency and production of solar arrays. The end result is a second solar installation that delivers an additional 1.9 MW of capacity in an innovative, efficient manner through:

- A high energy-density design - with 20% more kWh per area, an important factor considering the limited roof space available
- More productivity from each solar panel
- Greater temperature tolerance - especially important given the Las Vegas location
- A shade tolerant design - with parallel cell and module connections allowing a greater area of the rooftop to be filled with panels
- Enhanced safety - 60V DC, Class A fire rating
- Long-term durability - redundant design with lowest available degradation: 0.2%/year



Quick Facts



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| Project | MGM Resorts International |
| Location | Las Vegas, NV |
| Project Size | 8.3 MW DC (6.5 MW AC) |
| Phase I Completion | October 2014 |
| Phase II Completion | June 2016 |