



Solar Energy Solutions for Telecom



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To serve the insatiable global demand for connectivity, telecom providers are continuing to expand their networks while looking to cut costs and become better eco-citizens.

Stay on top of energy trends

As the cost of operating and maintaining access sites continues to rise, renewable energy offers a way to minimize the burden. Leveraging solar as the primary or supporting source of energy enables operators to divert precious OPEX dollars towards other critical maintenance functions. Concurrently, they can operate in a manner that reduces their carbon footprint and makes them better corporate citizens.

Adopt integrated energy solutions

Intelligent technologies that minimize the use of expensive energy and enable flexible, yet reliable power delivery are available now. Optimal energy use with high availability requires integrated managed site solutions designed to adapt to the power demands of the network and the local conditions at the site.

The smart path to success

Vertiv believes the path to profitability involves a fully integrated solar solution that is:

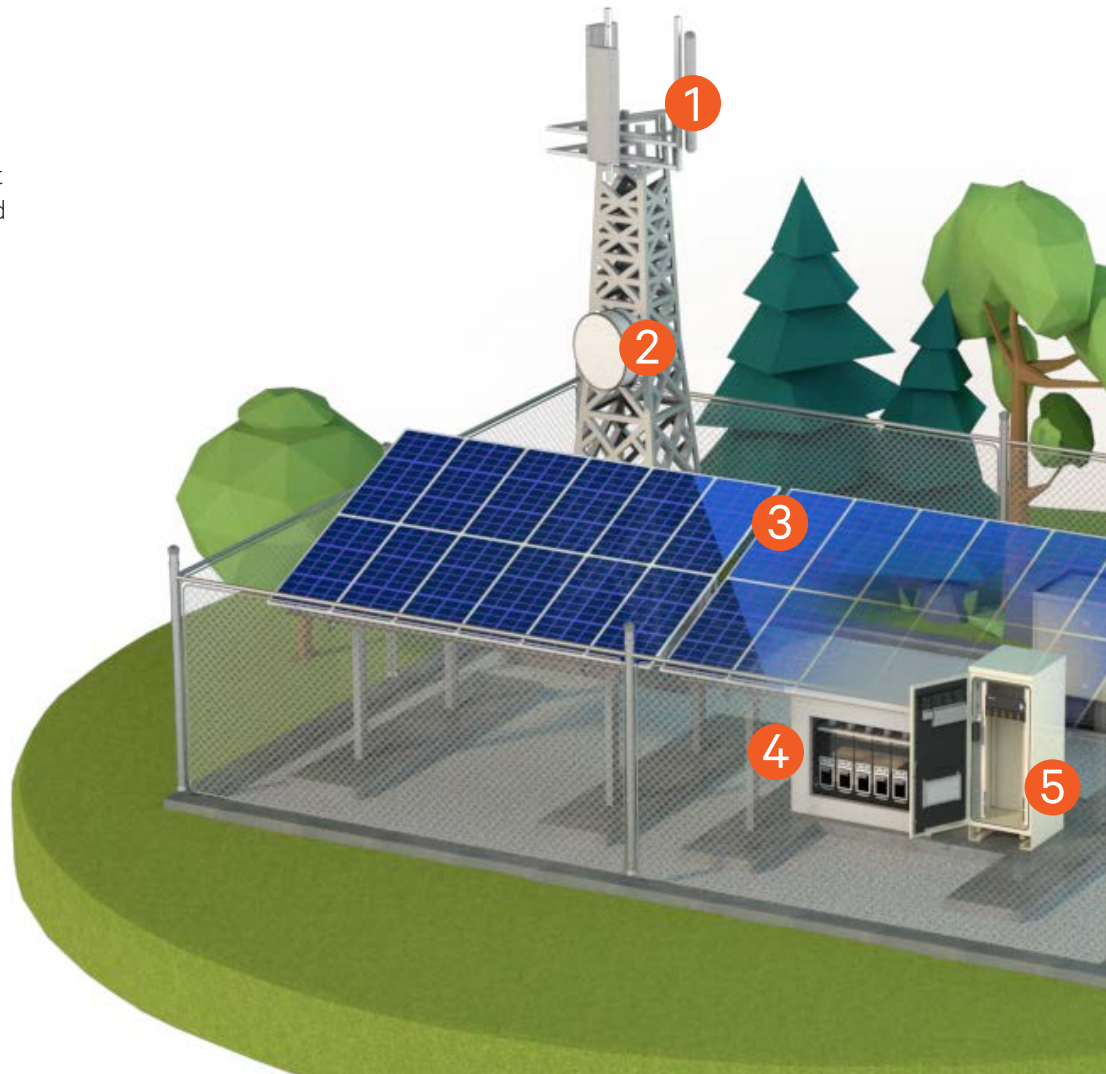
- **Simple.** Quick and problem free installation resulting from intelligent engineering and design
- **Flexible.** Meets today's needs while being prepared for the unknown needs of tomorrow
- **Reliable.** Reduces the costs associated with unplanned site visits
- **Comprehensive.** Delivers a total integrated energy management

- **Supported.** Professionals are always on hand, from installation training to monitoring

Leverage an industry expert

In this hyper-connected, technology dependent world, you can't afford for your critical network infrastructure to go down. The success of your business depends on it. Vertiv's team of experts brings together a global reach with local knowledge to take on your most complex challenges, creating solutions that keep your off-grid solar solution running—and your business moving.

- 1 Remote radio heads (RRHs)
- 2 Microwave Repeater
- 3 NetSure™ Solar Array
- 4 NetSure Solar Battery Enclosure
- 5 NetSure 5100 Hybrid System
- 6 Generator



Challenges

Fuel expense is high at off-grid sites due to:

- Frequent generator operation
- Theft and quality/dilution
- Site accessibility

Deployment speed slowed by:

- Infrastructure not in place
- Complex supply chains
- Introduction and understanding of new technologies

Operation and maintenance costs impacted by:

- Improper hybrid dimensioning
- Lack of site visibility post-installation
- Calendar-based maintenance dispatch

Site reliability impacted by:

- Use of consumer system or parts not designed for unattended operation
- Integration of discrete parts not validated to work as one solution

Consequences

High and unpredictable operating cost

Delayed deployment, causing consumers to choose competing carriers

Increase maintenance staff

Increase downtime and increase maintenance cost

Use of unplanned funds to keep site operational

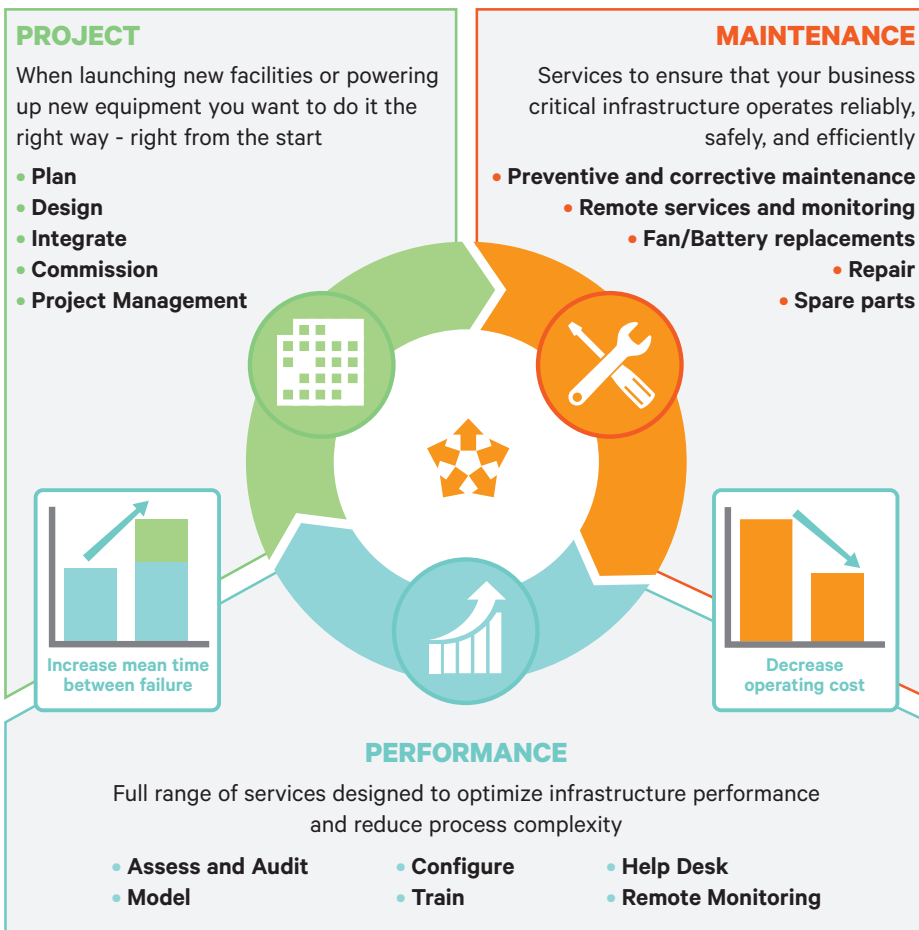
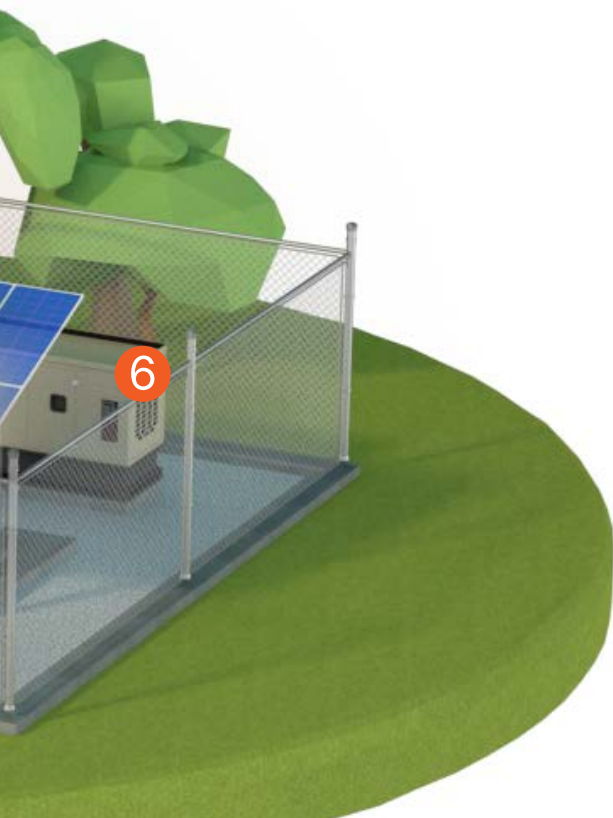
Opportunities

- Strategically blend power from batteries, solar and other sources to substantially reduce the use and storage of fuel
- Actively manage and monitor battery health, generator operation, and fuel consumption

- Working with a partner who provides a complete integrated solution
- Managed integrated supply chain with a common objective for schedule and delivery

- Engineer the hybrid site solution for the desired balance between capital and operational cost
- Leverage smart hybrid technologies to minimize maintenance dispatch and achieve maximum ROI, even as operating conditions change

- Validate vendor focus on the technologies and skills associated with deploying complete operating energy solutions
- Keep vendor engaged in site performance post-deployment





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