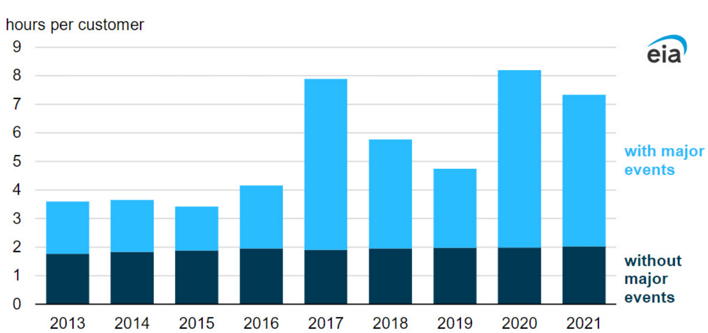
An Electric Opportunity: Grid Reliability

Total reading time = 3 minutes

Grid reliability is becoming increasingly important as our energy needs and dependence continue to grow. The COVID-19 pandemic marked an inflection point, as people became even more reliant for consistent electricity in their homes. The current electrical grid is overloaded, aging and progressively becoming more unstable, including more frequent power outages. As this critical problem is addressed, attractive investment opportunities in select companies with advanced energy-related technology are on the radar screen at JAG, covered later in this piece.

Headlines about power outages across the country are now common. The time that customers spend without electricity has more than doubled since 2015. As shown in the first chart below, in 2021 the average time without electricity was above seven hours. Seven hours over a year might not seem significant, but the increasing frequency and duration can pose health and safety risks, particularly for vulnerable populations such as the elderly and those with medical conditions that require electricity to operate equipment. An aging grid coupled with a lack of utility investment, rising energy demand, transition to renewable energy sources, and the increasing number of weather-related major events including snowstorms, hurricanes, and wildfires are all contributing factors to the increase over the past decade.

Chart 1: US Average Durations of Total Annual Electric Power Interruptions (2013 - 2021)



Source: EIA, JAG Capital Management

Standby Generators & Energy Storage

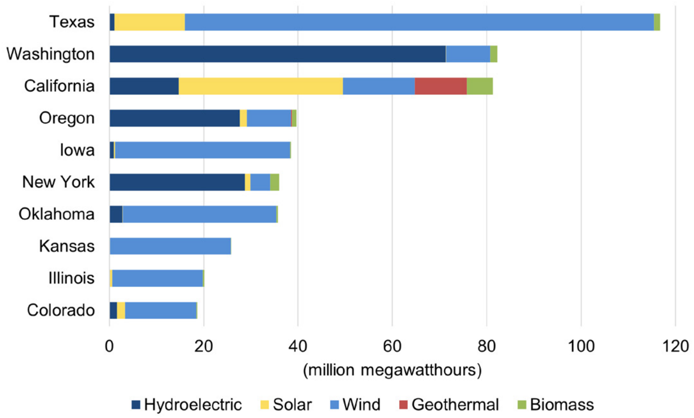
Global economies have embarked on an ambitious transition to renewable energy sources to reduce carbon emissions. Even as this transition decentralizes power into local energy generation, renewable energy suffers from the "duck curve" and intermittency which are a challenge to grid reliability. The duck curve refers to the daily pattern of energy production and consumption that occurs because of the growing use of solar energy. During the day, when the sun is shining and solar panels are generating electricity, there is a surplus of energy that is fed back into the grid. As the sun sets and energy demand increases, there is a sharp increase in demand that must be met by other sources of energy. This can create significant challenges for grid operators, who must balance the supply and demand of energy in real-time to maintain grid stability. Also, renewable energy sources such as wind and solar are inherently intermittent, meaning that their output is not constant and can vary depending on weather conditions and other factors. Therefore, the more renewable energy sources are added to the electrical grid, the more challenging it becomes to predict and manage energy supply and demand.

Home energy storage is one solution that can tackle both dilemmas and support grid reliability. Home energy storage systems use batteries to store energy that is generated by solar panels or other renewable energy sources. This energy can then be used during periods of high demand or when the grid goes down. By providing backup power, home energy storage can reduce the strain on the grid, help to maintain reliability, lower energy costs, and reduce carbon emissions.

California has become one of the largest renewable energy states, with solar generation three times greater than Texas. Recently, California approved a new policy called Net Energy Metering 3.0 (NEM 3.0), which incentivizes the adoption of battery storage by residential and commercial customers generating their own electricity using solar or other renewable energy sources. Under NEM 3.0, customers are credited for the excess electricity they generate and feed back into the grid. During the previous NEM 2.0 regime, customers would be credited the same rate across the entire day.

As we discussed with the duck curve, there is an electricity supply and demand imbalance. NEM 3.0 allows for time-of-use pricing, which means that customers are charged different rates for electricity based on the time of day. This incentivizes customers to store the excess power generated during the day and release it back to the grid later at night when demand is the highest and customers get a better rate. Longer-term, NEM 3.0 could be a growth catalyst for the battery storage industry.

Chart 2: US Top 10 Renewable Elecricity States by Source (2021)



Source: EIA, JAG Capital Management

Investment Opportunities

In the standby generators industry, we like Cummins (CMI), Caterpillar (CAT), and Deere (DE), though this is not their core businesses. A leader in this category is Generac (GNRC), but their shares have underperformed due to high inventory levels and concerns over product quality.

In the battery storage category, the market is more fragmented. Power inverter makers, like Enphase (ENPH) and SolarEdge (SEDG), that integrate their solar electricity offering with battery storage, have been strong performers in recent years. Even though Tesla (TSLA) is known for its electric vehicles, it is one of the largest players in the solar and battery storage industry. In 2022, Tesla sold a combined total of 6.5GWh of powerwalls (residential) and megapacks (utility-scale) globally. For some perspective, this represents almost 70% of utility-scale storage installed in the US in 2022. Energy generation and storage represent only 5% of Tesla's current revenues but this could increase.

There are companies in other sectors, like semiconductors, that produce the necessary components to build energy storage systems. Onsemi (ON) provides components that help solve challenges in power management and energy conversion.

Companies like Quanta Services (PWR) and MasTec (MTZ) that provide services to build the electric power infrastructure, have the expertise and resources to capitalize on both standby generators and battery storage at a commercial level.

Reliability of the electric grid will increasingly be a key issue for our nation, and the solutions will take decades to fully develop. Many companies stand to benefit as they develop and use innovative technologies in this space.

JAG's investment approach helps us identify great companies that can capitalize on durable sector and industry-specific trends and opportunities. We welcome your comments and questions any time!

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Disclosures

A Veteran Owned Business (VOB) is a business owned, (51% ownership or greater) by a Veteran who has met the definition of a veteran. The following represents the criteria that the National Veteran Business Development Council (NVBDC) uses in determining ownership:

Ownership: Fifty-one percent ownership by a Veteran or Veterans. The applicant must share in all risk and profits commensurate with their ownership interest.

Control and Management: Proof of active management of the business. Veteran must possess the power to direct or cause to direct the management and policies of the business.

Contribution of Expertise and Capital: Contribution of capital and/or expertise by Veteran owner(s) to acquire their ownership interest shall be real and substantial and be in proportion of the interest acquired.

Independence: The Veteran owner(s) shall have the ability to perform in their area of specialty/expertise without substantial reliance on non-Veteran-owned businesses.

About JAG

JAG Capital Management (JAG) actively invests for institutions and individuals in highly selective, customizable, and nimble equity and fixed income strategies. JAG is a boutique, independent, employee-owned investment management firm with offices in St. Louis and Chicago.

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