THE BENEFITS OF SOLAR & STORAGE

From Fortune 500 companies to much smaller organizations, businesses across the U.S. are realizing the benefits of investing in solar and energy storage. This should signal to companies that are sitting on the renewable energy sidelines that they are missing out and losing competitive advantage every day. **This paper outlines some of the ways adding solar and energy storage can benefit your business — and it's not just about electricity.**

BORREGO SOLAR

Solar & energy storage provide businesses and organizations with more benefits than any other energy source.

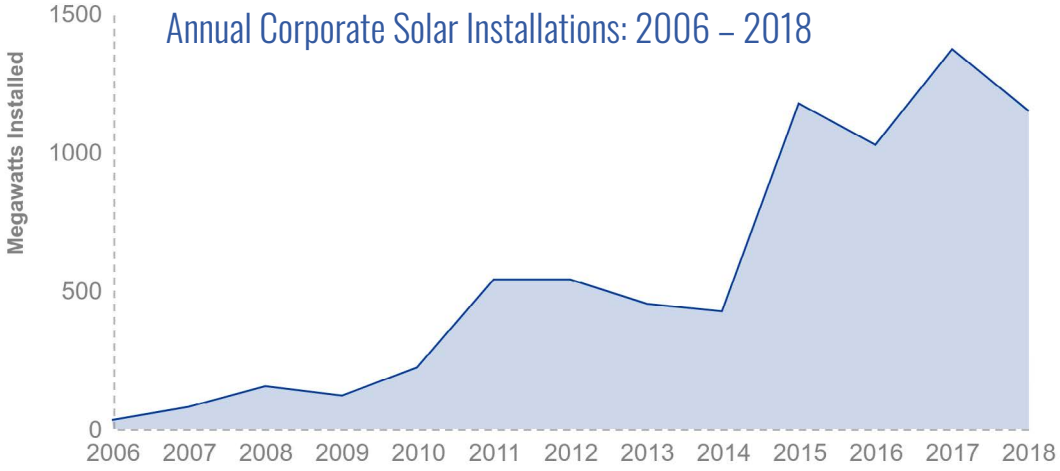
Compared to conventional energy, solar and energy storage provide companies with:

1. Energy cost savings
2. Reduced uncertainty
3. Innovation and expansion
4. Improved brand reputation
5. Competitive advantage

Corporate solar deployment is more than 20 times larger today than it was a decade ago[1].

According to the Solar Energy Industries Association's (SEIA) ***2018 Solar Means Business Report,*** there has been a surge in corporate solar installations in recent years, with more than half of all the capacity having been installed in the past few years.[1]

Some of America's most recognizable brands are leading the way in corporate solar adoption. Companies such as Ikea, Apple, Target, Walmart, Costco, Amazon, Intel, FedEx, Verizon, L'Oreal, Microsoft, and General Motors are all saving on energy costs, delivering more value to their customers, and reducing harmful carbon emissions and pollution by investing in renewable energy.



Credit: 2018 Solar Means Business Report, SEIA

With solar & energy storage, the benefits outweigh the hurdles.

Most corporate leaders have likely considered adopting solar to power their operations, but may have hesitated after thinking about the time required or lack of internal knowledge. Would the company elect to use capital funds? Would the rest of leadership team even buy-in? Is there a better time to make the investment?

While there are certainly questions to consider when transitioning to a new form of energy, companies across all sectors — from Apple to IKEA — have discovered that the multitude of benefits greatly outweigh the challenges.

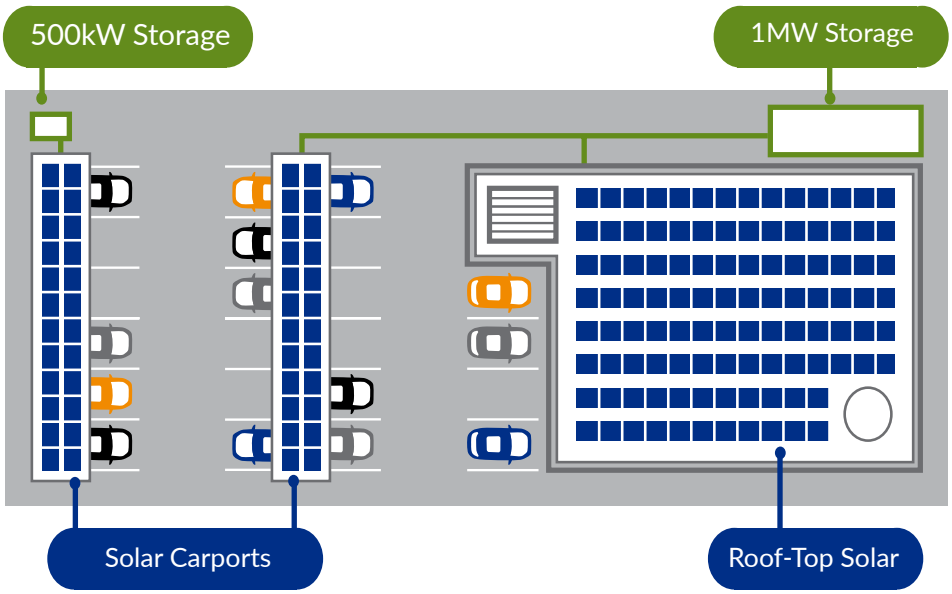
BENEFIT #1 — ENERGY COST SAVINGS

While installing solar or solar-plus-storage does come with an initial upfront cost, that expense has fallen over time and there are various financing options that eliminate upfront capital outlay. In fact, the growth in corporate solar demand primarily has been led by declining prices, which have fallen by 63% over the last decade.

These price declines have been driven by reductions in the cost of panels, energy storage systems, and other hardware — as well as improvements in labor efficiency and company overhead as markets become more competitive[1]. It's important to keep in mind that the initial expense is followed by long-term savings, and payback periods have been shrinking as prices fall.

Solar enables companies to decrease energy costs by generating their own power. Companies can even sell excess power for profit in some markets.

Sample Energy Storage Project with On-Site Solar

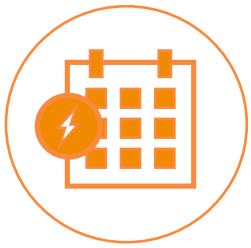


> *"We've seen energy costs continue to rise faster than general inflation. As a long-time operator of medical office buildings, we are always looking for ways to better manage expenses. With more than 260 days of sun in Encinitas and our 10,000 square feet of roof space, the decision to go solar made strong economic sense."*
>
> Greg Petree, President — AmeriCare Medical Properties

Energy Storage Strategies

With energy storage, companies can save excess solar generation for use later during times of peak demand and peak pricing — an energy cost management strategy called **Time of Use Arbitrage** — or during the evening when the panels aren't producing energy. This is essentially a buy-low, sell-high approach and is reliant upon sufficiently large price differentials between peak and off-peak periods for the battery to deliver value from "shifting" the load.

Energy storage also delivers significant savings through **demand charge management.** Demand is billed based on the greatest amount of power a customer ever pulls from the grid within a given period. Broadly, there are two types of charges on your utility bill: Energy and demand. Given the structure of common commercial utility rates, the majority of corporate and industrial customers will find the most valuable use of an energy storage system will be in reducing demand charges.



Energy Charge. This is calculated by multiplying your total energy use for the month, measured in kilowatt hours.

Demand charge. Typically calculated by looking at the greatest amount of power, measured in kW, needed during the thousands of demand intervals that make up a billing cycle.

By way of analogy, you might equate a utility meter to the instruments on the dashboard of a car. If energy is billed based on the odometer reading or how many miles it has traveled, demand would be billed based on the fastest speed recorded by the speedometer. Moreover, demand charges represent real costs to customers. In many markets, demand charges comprise anywhere between 30 percent and 70 percent of the total electric utility bill for commercial customers.

Typically, demand charges fall in one of two categories: Non-coincident and Coincident charges. The former is billed based on the highest metered demand at any point within a billing period, regardless of the time of day, whereas the latter are only assessed for demand within a specified set of hours, typically coinciding (hence the name) with the Peak period. Should a customer's highest demand overall fall within a Peak period, both the Non-Coincident and Coincident charge are applied, meaning the dual charges are stacked on top of one another. When taken together, these charges can add up to more than $40 per kilowatt.

Energy Storage is Dispatchable

Energy storage can fill in these gaps. As a dispatchable resource, it can be called upon quickly to reduce demand surges or just periods where on-site load is creeping up past a given threshold. By focusing on these "outlier" events, the short duration nature of the asset can have a big impact. Since storage rearranges load and is not a generation source, it typically cannot eliminate demand charges all together. However, successful demand charge management results in demand that more closely resembles average usage than the extremes. This is good for the grid, good for the environment, and good for a customer's bottom line.

Whether installing rooftop systems on various locations, solar carports for corporate headquarters, or large ground-mounted projects to power data centers, solar & energy storage allows businesses to operate cost-effectively, opening numerous additional opportunities.

BENEFIT #2 — REDUCED UNCERTAINTY

Companies that install solar or solar-plus-storage are subject to less uncertainty and risk when it comes to fossil fuel supply and pricing, as well as regulation. As utility electricity continues to rise in price and variability, businesses powered by solar can depend on an energy supply at a predetermined rate and are therefore mitigating risk to volatile and rising costs. There is also uncertainty around potential local and federal policies to reduce carbon emissions.

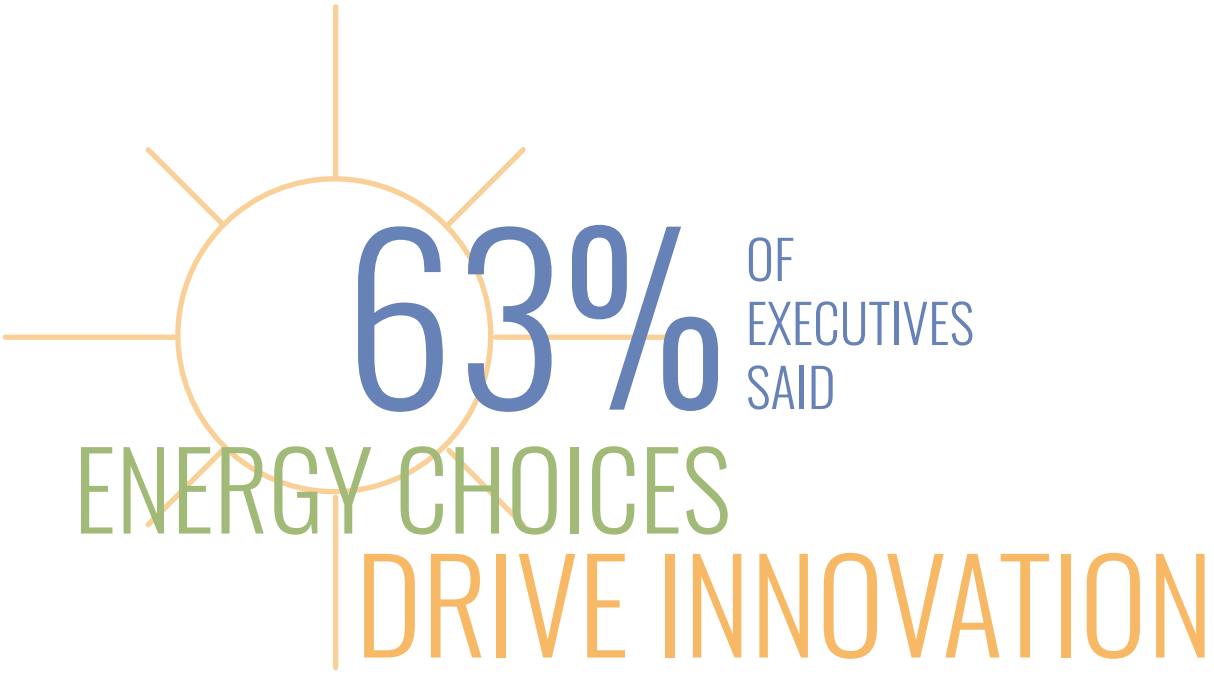
Companies that proactively work to decarbonize their energy sources ahead of these are de-risking themselves from forced changes while also creating competitive advantage in the meantime.

BENEFIT #3 — INNOVATION & EXPANSION

A company that is forward-thinking in its energy choices is likely to see a ripple effect in other areas. A 2018 survey by The Science Based Targets initiative, which works to help drive corporate climate action, interviewed 185 company executives from businesses committed to the initiative. They found that almost two-thirds (63%) of executives say their energy choices are driving innovation.[2] For example, deciding to go solar may lead businesses to explore other ways to increase efficiency, such as installing LED lights or reducing water use.

After changing its energy source, a business may also be motivated to innovate its products & services. In the same survey, more than 50% of businesses say they expect at least half of their products and services to be low-carbon by 2030.[2] For example, Sony's decision to reduce its emissions helped drive new product development, including a plastic made of 99% recycled material, which helps reduce CO2 emissions by nearly 80% during manufacturing.

Falling solar prices and increased generation from panels allows companies to install more capacity for the same cost. The growth of third-party financing has also given companies more flexibility to make larger solar investments with less up-front capital.[1] Companies can take advantage of the savings to expand business, whether through physical capacity or by hiring more people. For example, Kellogg's decision to set an emissions target prompted it to form a team dedicated to finding ways to increase sustainability and efficiency.[2]



BENEFIT #4 — IMPROVED BRAND REPUTATION

A company that's willing to try new things and values sustainability can be especially attractive to the next generation of new hires — millennials — as well as to consumers, who are increasingly aware of how their decisions affect the environment.

A business' sustainability practices, or lack thereof, are important to its reputation. Some customers flatly expect brands to have corporate responsibility initiatives. In fact, 79% of corporate executives surveyed found a strengthened brand reputation to be one of the most significant business benefits for their company after taking steps to reduce their emissions. In addition, 52% say their commitment has boosted investor confidence in their business.[2]

Committing to Bold Renewable Energy Goals

Some of the nation's largest and most recognizable companies have joined together with **RE 100**, a global corporate leadership initiative bringing together businesses willing to make public commitments to 100% renewable electricity[3]. As part of RE 100, companies can achieve their 100% renewable energy goals by either producing their own energy, either onsite or offsite — or buying renewable through power purchase agreements and retail energy from a provider or utility.

According to the group, the commercial and industrial sector consume about two-thirds of the world's electricity. With more than 200 companies already signed on, the RE 100 is setting new standards for corporate leadership on renewable electricity and communicating a compelling business case for renewables to other companies, utilities, market operators, and policymakers.

52%

OF CORPORATE EXECUTIVES FOUND

BOOSTED INVESTOR CONFIDENCE

79%

OF CORPORATE EXECUTIVES FOUND

STRENGTHENED BRAND REPUTATION

BENEFIT #5 — COMPETITIVE ADVANTAGE

Adopting science-based sustainability targets, including solar and energy storage, can give companies an overall leg up.

Another group driving corporate reduction of emissions is Science Based Targets, which provides corporate leadership with clear greenhouse gas emissions standards that align with the latest in climate science. More than 600 companies have begun to take action, and more than 200 have set science-based targets as part of the initiative.[2]

According to SEIA, more than half (55%) of companies they surveyed say that committing to initiatives to lower emissions gave them a competitive advantage[1]. The benefits of increased innovation, reduced uncertainty, stronger investor and consumer confidence and improved profitability allow businesses to get ahead and succeed in today's competitive market.

55% OF COMPANIES SURVEYED SAID COMMITTING TO LOWERING EMISSIONS IMPROVES COMPETITIVE ADVANTAGE

SUMMARY

Switching to renewable energy such as solar and energy storage gives companies control over rising energy costs, greater brand recognition, increased competitiveness, and improved customer engagement and loyalty — while also doing something positive for the environment.

There is increasing demand for products and services that are sustainably sourced, have smaller carbon footprints, are produced using clean energy, and align with consumers' beliefs. And corporate executives know that they can mitigate long-term risk and rising energy costs with solar and energy storage — whether through onsite or offsite installations. They understand the plethora of benefits of renewable energy and have made the decision to reap those benefits while doing something positive for the environment.

When will your business choose to take advantage of these benefits?

When it does, or if you have additional questions, Borrego Solar can help.

CUSTOMER CASE STUDIES

Coast Citrus Distributors — 2.1 MW

Corporate portfolio — Multiple locations, CA

Annual Carbon offset: 3,300 metric tons

Benefits: For a company that relies on refrigerators, freezers, and packing machinery for daily operations, installing solar on its commercial buildings will minimize the risks of rising energy costs and provide a more sustainable model for its growing business.

Viasat — 445 kW

Carlsbad, CA

Annual Carbon offset: 500 metric tons

Benefits: As an environmentally conscious company, this rooftop installation will enable Viasat's long-term sustainability initiatives, while helping it save money on rising utility costs. The system design worked around site constraints of corporate campus.

Pacific Ethanol — 5MW

Madera, CA

Annual Carbon offset: 7,000 metric tons

Benefits: The ground-mount installation at its Madera plant will provide two-thirds of the plant's energy demand, saving about $1 million in energy costs annually.

Banner Health, Lassen Medical Center — 868 kW

Susanville, CA

Annual Carbon offset: 1,102 metric tons

Benefits: The ground mounts system will saving $20,000 annually will enable the center to allocate funds for purchasing medical equipment and improving patient care.

Our customers are seeing the benefits of installing solar & energy storage.

CONTACT US TODAY

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REFERENCES

1. Solar Energy Industries Association (SEIA). *Solar Means Business: 2018 Report*
   https://www.seia.org/solar-means-business-report-archives

2. Science Based Targets. YouGov Survey, July 2018.
   https://sciencebasedtargets.org

3. RE100, led by the Climate Group.
   http://there100.org/re100

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Borrego Solar is one of the nation's largest and oldest commercial solar and energy storage companies providing comprehensive development, design, construction, financing, and operation & maintenance services. Established in 1980, we have decades of experience helping businesses, the public sector, and landowners maximize their solar and energy storage potential with custom-designed and custom-built solutions. We have designed and installed more than a thousand successful projects totaling more than 550 megawatts of clean, pollution-free energy.

Contact us today to go solar!

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