#### WHITE PAPER

## Electrifying Everything: Mid-Market Commercial Sector Leads the Way

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### Introduction

Increasing energy costs, cheaper solar technology, and improved battery storage capabilities are driving a shift away from commercial and residential dependency on traditional utility-delivered electricity.

With national utility rates 120% higher than only a decade ago, grid failures accounting for \$150B in business losses annually, and new federal incentives and rebates for clean energy and efficiency, there are tremendous opportunities to embrace the modern microgrid. This microgrid energy technology has the greatest potential benefits for the mid-market commercial sector.

Buildings, long known as consumers of energy and producers of greenhouse gas emissions, can now become independent clean energy generators while delivering significant additional revenue to property owners or businesses.



### The Problem

### The grid is the most unstable it's been in 100 years, and energy prices are rising at a record pace.

#### **OPERATING COSTS**

The existing centralized, utility-supplied energy grid presents a host of challenges for California businesses. Beyond the greenhouse gas (GHG) emissions associated with traditional fossil-fuel-derived electricity (nearly 60 million metric tons of CO<sub>2</sub> in 2020, 16% of statewide emissions<sup>1</sup>), there is the issue of substantial price increases. California is experiencing an extreme case of price escalation — seeing base rate increases of over 20% between 2020 and 2023<sup>2</sup>. In addition, peak charge pricing structures have further increased costs and complexities for ratepayers. <sup>3</sup> Electricity usage from 4:00 - 9:00 p.m. can cost three times the rate than earlier in the day. These changes create massive operating cost impacts and variability for many important industries like manufacturing, distribution, food processing, and research & development (R&D) for office space.

#### **OPERATIONAL RISK**

Grid failures are also increasing in frequency and severity. California leads the nation in power outages, with 142 outages in 2022 alone, and is roughly ten times more likely to experience blackouts than the U.S. average. <sup>4</sup> The New Orleans Power Outage of 2021 affected over one million homes for a week and was responsible for the loss of human life.<sup>5</sup> The Texas Grid Failure in 2021 impacted 4.5 million homes, generated nearly \$200B in damage, and caused over 800 deaths. <sup>6</sup> The U.S. Department of Energy (USDOE) estimates that power outages cost the commercial sector up to \$150B annually between 2000 and 2014,<sup>7</sup> a figure which has likely grown in recent years. According to a 2018 survey, one in four manufacturing companies experienced a power outage monthly, and over half of those outages lasted longer than an hour. <sup>8</sup> According to the same survey, the financial impacts of these outages vary according to industry, with data centers losing over \$12M per day, grocery stores losing between \$30K and \$5M per day, and large manufacturing losing \$5M for every hour they are offline.

#### **ENVIRONMENTAL IMPACT**

The environmental impacts of traditional dirty energy are also becoming harder to ignore. In 2020, fossil fuel combustion for energy consumption accounted for 73% of the total U.S. GHG emissions. <sup>9</sup> Commercial buildings accounted for 18% of all the energy used in the U.S. in 2020, and with 5.9 million U.S. buildings in the commercial space – occupying 97 billion square feet – the commercial mid-market can drive this electrification movement. <sup>10</sup>

### The Opportunity

The combination of falling product costs and maximum incentives creates the best development opportunity in decades.

Building owners can de-risk their energy reliance and generate income by creating their own onsite renewable electricity - termed a microgrid. Rather than being the end of the line/last stop for an unreliable transmission and distribution system, buildings become their own power plants, serving their tenants, and adding site and grid resiliency. California's net energy metering (NEM) program has long allowed building owners to "sell back" the excess electricity from their solar systems to the California grid. With the addition of battery and metering technology, building owners can now choose the most lucrative times (peak billing time) to use or sell the stored energy to power their buildings. These peak billing times are based on residential usage and, depending on the industry, tend to coincide with the end of the business day and commercial energy needs.

While energy retrofits may benefit all market sectors, perhaps the most significant opportunity lies in the "middle market" of the commercial industrial class of buildings.

Since mid-market industrial rents tend to skew lower, energy costs are a more significant portion of their total cost of operations. They also tend to have larger roof areas for photovoltaic (PV) generation than large commercial office buildings or multi-family housing. And they are plentiful. Education, mercantile, office, and warehouse/ storage buildings make up 60% of the total commercial floor space.

But the opportunity extends beyond energy savings. With high energy usage, manufacturing, logistics, production, and R&D offices are the biggest benefactors of a microgrid redevelopment, with a typical internal rate of return (IRR) for these systems at 15 – 25%. Microgrid redevelopment makes these local, U.S.-based businesses more competitive with lower operating costs.

Shifting away from dependency on centralized energy generation also increases property values. "Greener" buildings are known for having higher occupancy rates, generating higher rents, and experiencing lower turnover.<sup>11</sup>



### The Benefits

### Renewables are a win-win for owners and tenants. Benefits are multi-faceted.

Historically, installing solar panels meant reduced energy costs with low risk but an unacceptably long payback period of 10+ years. With today's federal and state incentives, solar generation paired with battery storage creates the opportunity to become a virtual power plant (VPP) for every building owner. There are multiple benefits to both the owner and the tenants:

#### PLANET

The combustion of fossil fuels to provide energy to commercial buildings was responsible for over 750 million metric tons of  $CO_2$ , and approximately 16% of all U.S.  $CO_2$  emissions, in 2021. <sup>10</sup> A switch to renewable energy will drive a significant reduction in GHG emissions, ranging from tens of thousands to hundreds of thousands of pounds of  $CO_2$  per year.

#### PEOPLE

Onsite renewable energy is carbon and pollutant/particulate-free, and reliable energy creates a safer working environment for every occupant. Tenants' ability to meet customer demand by manufacturing and distributing low-carbon products and services keeps businesses operating and people employed. Renewable retrofits also enable tenants to meet their internal corporate carbon emissions reduction goals and mandates.

#### **REVENUE & OPERATIONS**

Beyond being better for both the planet and people, renewable energy generation becomes a new revenue stream for the building owner and may represent significant operational savings for the tenant. Business owners will have predictability with their energy costs. Removing the wild fluctuations/spikes creates a more "known" input cost for operations. Building owners can easily attract and retain tenants because of this market discount and stable pricing. The property becomes more competitive with higher long-term occupancy. <sup>11</sup> Building owners also have a new source of revenue resulting in a steady 25-year increase in net operating income. That additional revenue significantly increases asset value when considering cap rate valuation methods for real estate. In some cases, adding renewable energy to a mid-market property has added 25-50% more value to a property.

### The Incentives

Federal incentives are at an all-time high of 30-70% and can be combined with existing California programs for maximum returns.

An even more compelling business case now exists to electrify and use buildings to generate energy. With the passing of the Inflation Reduction Act (IRA) in 2022, significant incentives exist to make these changes now. The IRA has brought back strong tax credit incentives to cover 30% of a solar installation.

**Prior to the passing of the IRA**, the Investment Tax Credit, or ITC, was in the process of phasing down to 10%. However, the IRA extends the ITC to 30% for the foreseeable future. ITC will technically expire in 2024 and be replaced by the Clean Electricity Investment Credit (CEIC), a technology-neutral incentive, in 2025. Through incentives available under these bills, solar projects will continue to qualify for 30% in tax credits over the next ten years. Prior to the IRA, energy storage projects installed without integrated solar generation were not eligible for tax credits. Now, even standalone storage is eligible for the same 30% federal tax credit.

For most projects in the Commercial Industrial space under a megawatt (MW) in size, 30% is the minimum tax credit. Facilities that certify that a majority/certain percentage of steel, iron, or manufactured product components of the facility were sourced in the United States are eligible for an additional 10% credit. Projects located in a qualified energy community as defined in the IRA, low-income community (<80% AMI of respective census tract), or on indigenous managed lands are eligible for an additional 10% credit, and low-income economic benefit projects associated with affordable housing developments are eligible for an additional 20% credit. These credits are stackable, so it is conceivable to receive between 30% and 70% credit for new projects (see Stackable Incentives).

#### STACKABLE INCENTIVES

Another key feature of the Inflation Reduction Act is the ability to stack tax incentives. Along with a base tax credit of 30%, power producers can add on:

- An additional 10% investment tax credit using a certain percentage of steel, iron, and manufactured products produced in the United States
- An additional 10% for facilities in census tracts that include retired coal infrastructure, or that maintained high employment levels by the coal, oil or natural gas industry after 1999
- An additional 20% for small wind and solar projects located in low-income communities.

As the real estate market prepares for a softening or possible recession, adding revenue generation in existing portfolio properties is a safe move.

Beyond energy resiliency, it lowers operational costs to tenants, ensuring rapid and sustained leasing, and gives owners financial flexibility in lease rates in competitive markets.<sup>11</sup> While rents may drop, energy revenue may be up to 25% of the floor area lease rate, giving the owner 25% of wiggle room before they feel a financial pinch.

### The Takeaway

A shift to distributed energy offers better energy reliability and revenue potential while reducing carbon footprint.

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Energy retrofits, including microgrids, have the potential to improve human, planet, and financial health and add an element of independence and resiliency for building owners and tenants. There is a misconception that retrofits are costly and complicated when creating energy resiliency has considerable short- and longterm benefits for both property owners and tenants. The accountants and sustainable business consultants at Sensiba and development engineers at MYNT Systems are experts at these tech-economic analyses.

Sensiba can help review the business case and options for investing in renewable real estate projects, help existing real estate owners understand and measure the investment opportunity, evaluate and maximize incentives to offset organizational tax liabilities, and source financing options to cover up to 100% of construction costs.

The development engineers at MYNT Systems turn commercial buildings into sustainable assets to increase their profitability and reduce their carbon footprint. MYNT works with owners and tenants on concept, design, building, and managing energy assets.

# MYNT



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