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## C&I Distributed Energy Resources July 2021

# Renewable Energy Opportunities for C&I and Institutional Companies

Product	Description
 <b>Project Investment</b>	Direct investment in a project to benefit from the energy, environmental, public relations, tax, and financial return and earnings attributes of clean energy facilities.
 <b>Power Purchase Agreement</b>	Agreement to purchase energy and environmental attributes for a fixed price. Partner will then either use these products or resell them into the regional energy market.
 <b>Renewable Energy Credits or Carbon Offsets</b>	Purchase of environmental attributes such as renewable energy credits (RECs) or carbon offsets.
 <b>Utility Green Tariff</b>	In regulated or utility-monopoly markets, the local utility may offer a special rate or tariff for commercial and industrial purchasers.
 <b>Retail Electric Service</b>	Full requirements electric service; part of this supply will be directly supported by a long-term commitment to one or more clean energy facilities. Available in areas with retail choice.
 <b>Distributed Energy Resources</b>	Community or on-site solar energy, at the distribution system, provides the environmental attributes, can be financially contracted stand-alone or as part of a hybrid on-site/off-site power purchase agreement.
 <b>Storage</b>	Battery storage can be incorporated into a wind or solar offering, a retail supply agreement to optimize performance, or as part of an on-site DER.

**Behind-the-Meter  
On-Site DER**

# Distributed Energy Resources (DER)

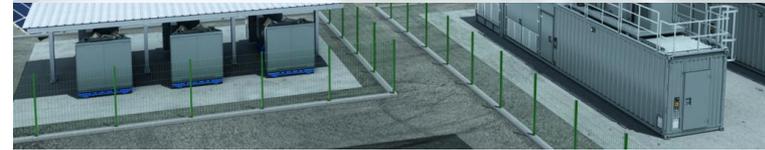
Distributed Energy Resources (DERs) are physical and/or virtual assets that generate electricity and are deployed across the distribution grid, typically close to load, and usually behind the meter, which can be used individually or in aggregate to provide value to the grid, individual customers, or both.



Community Solar



Microgrid



Behind the Meter Solar



## Apex DER

With the establishment of a DER business in 2020 and expanded C&I strategy and capabilities in 2021, Apex will replicate and leverage its utility-scale success and expertise in the DER market.

# What is Behind the Meter/On-site DER



## Solar PV

- On-site, reliable, cost-effective
- Can store or send back to utility
- Rooftop, ground-mount, carports

### Examples:

- Cold chain and distribution
- Food and beverage manufacturing
- Health care, hospitals
- K-12 and higher education
- Manufacturing
- Municipal governments



## Solar PV + Battery Energy Storage System (BESS)

- Avoids high-demand charges from utility
- Acts as a load during charging periods and as a generator during discharging periods

### Opportunities:

- Peak shaving and demand charge management
- Time-of-use energy cost management
- Continuity of energy supply during outage of electricity supply utility
- Power quality management and limitation of upstream disturbances
- Reactive power compensation
- EV fast charging



## EV Charging

- 13 million chargers needed by 2030
- Equal to 30 GWh of battery storage

### Opportunities:

- Potential \$8.6B in cost savings when purchasing renewable power from BTM assets
- Time of use arbitrage
- Ability to sell stored power in EV batteries back to the grid during peak demand times



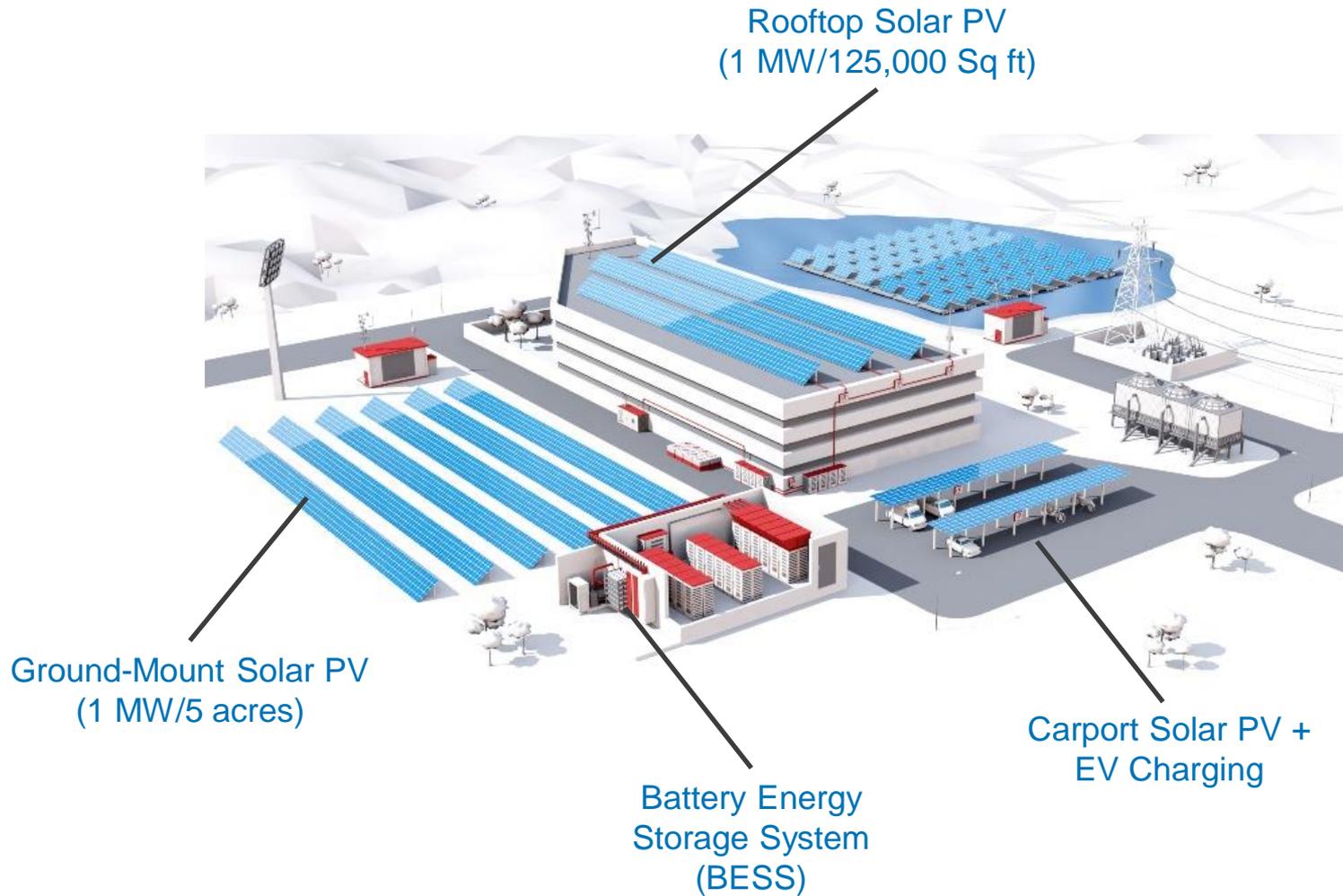
## Microgrid

- Self-sufficient, independent energy system
- Optimizable, flexible, green attributes

### Benefits:

- Integrates with grid/smart grid technologies
- Integrates distributed and renewable energies, reducing peak load
- Ensures energy is supplied to complexes with critical power needs

# How It Works: Behind the Meter/On-site DER



# Benefits of Behind the Meter/On-site DER



## Lower Energy Costs, Generate Revenue

Energy costs and demand charges can be unpredictable, while the traditional generation mix faces uncertainty. On-site generation operates at a fixed cost and can also be leveraged to meet real-time grid/utility stress for added value.

### Advantages:

- Electricity budget certainty over the life of the project
- Reduction/elimination of Peak Demand charges
- Tax advantages (26% ITC)
- Retain REC income
- Retain incentives, or apply to bring down cost of project



## Meet ESG Goals

In addition to the environmental benefits, renewable energy has important social benefits as well. Onsite renewable energy is a great reminder to your employees and stakeholders that your organization is committed to social responsibility and sustainability. The quantifiable output of renewable energy systems demonstrates that commitment in an extremely visible way.

### Benefits:

- Lowering the carbon footprint of your facility and operation
- Increased value for customers, employees, and community stakeholders
- Align with investor and industry standards



## Improved Reliability

Grid instability and climate events can result in significant, unplanned operational disruptions. On-site distributed energy resources can provide a greater degree of certainty power supply.

### Advantages:

- Production and operations can be strategically matched to on-site generation and storage systems
- On-site generation can allow an operation to access more advantageous utility rates for balance of power
- Effectively solve power quality requirements

# Behind the Meter/On-site DER Financial Options

Multiple project financial structures that can generate savings, tax advantages, guaranteed performance, and no capital outlay

## Project Ownership—CapEx or Loan

- Investing your own capital often results in the best ROI, less complicated structure and savings go to bottom line.

## Operating Lease

- Instead of paying for the power produced, just pay to “rent” the DER system. Typically a 6-7 year lease term and on your balance sheet, Apex can own and operate the system, but retains ownership of the incentives and tax benefits. You claim the environmental benefits, and at the end of the lease term, you buy the DER system at 15-30% of the original system cost.

## Power Purchase Agreement (PPA)

- A traditional long-term agreement to take the electricity generated by the on-site system at a set price for the term of the contract. Apex would own and operate the system, and provide performance guarantees on the output.

## Property Assessed Clean Energy (PACE)

- State-sponsored financing option that leverages the building as collateral to the cost of the project, at low-interest rates and no capital/down-payment.

## Energy Services Agreement (ESA)

- ESAs are performance-based contracts through which a service provider agrees to finance, develop and deploy energy efficiency/renewable energy projects for clients without any upfront capital expenditures. The client agrees to pay back the project costs through energy savings realized on utility bills over the ESA term.



# Behind the Meter/On-site DER Incentives

Multiple incentive programs at the federal, state, and local levels can help reduce the investment cost and improve already favorable economics

## Business Energy Investment Tax Credit (ITC)

- The ITC is a US federal government corporate tax that assumes 26% of the total cost of the solar system. The program is scheduled to ramp down incrementally over coming years.

## Accelerated Depreciation Bonus

- Another federal incentive, the system can be fully depreciated in year 1

## Net Metering

- If allowed by the utility, a bi-directional meter measures the kWh produced by the solar project vs the amount your facility uses, and allows for a “credit” on the amount going back to the utility

## Solar Renewable Energy Credits (SRECs)

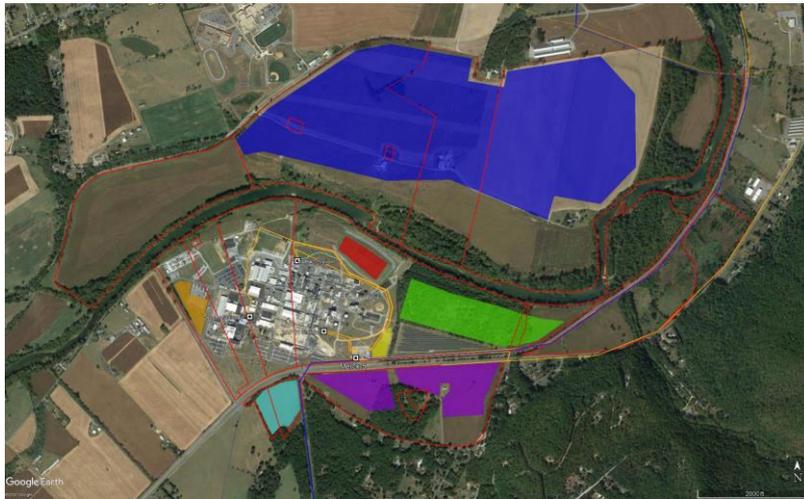
- The system owner can generate an additional revenue from the market-value of an SREC, which is market/state-based, and can also be leveraged to buy down the cost of the on-site solar system

## Utility or ISO Demand Response Programs (DR)

- Traditional demand response is “heavily entrenched” in wholesale markets, but the increasing penetration of DERs and the capability of providers to deliver aggregated behind-the-meter fleets of them is allowing system operators to seize their value, eventually allowing the end-user or DER owner and system operators to partner in delivering mutual value.



# C&I/MUSH Distributed Energy Resources



## Apex DER Focus and Process

1. Identify customer's needs (goals, site energy profile, operational characteristics)
  - **Peak loads greater than 1-2 MW**
  - **Surrounding unused property or useable roof-tops that can be monetized**
  - **Critical operating loads, high electricity costs and/or unreliable/low quality power from the utility/grid**
  - **ESG goals better met by on-site solutions**
2. Site visits lead to project scoping, solution design, and proposal development
3. Engineering, design, and financial structure
4. System installation
5. Go-live and monitoring



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