ATOM POWER®

EFFICIENT EV CHARGING

FOR COMMERCIAL AND MULTI-FAMILY PROPERTIES

THE FUTURE IS ELECTRIC.

Here's how to make the switch cost-effective.

The rising adoption of electric vehicles (EV) and EV charging infrastructure is paving the way to a clean energy future. Increased adoption of EVs means larger energy demands, especially for multi-family residences and commercial facilities. And larger energy demands can lead to higher electricity bills. This overview demonstrates how energy management, used in combination with an EV charging system, can mean the difference between charging a car for $18 or $476[1] a month.

THE ATOM POWER ADVANTAGE

$18.54

VS.

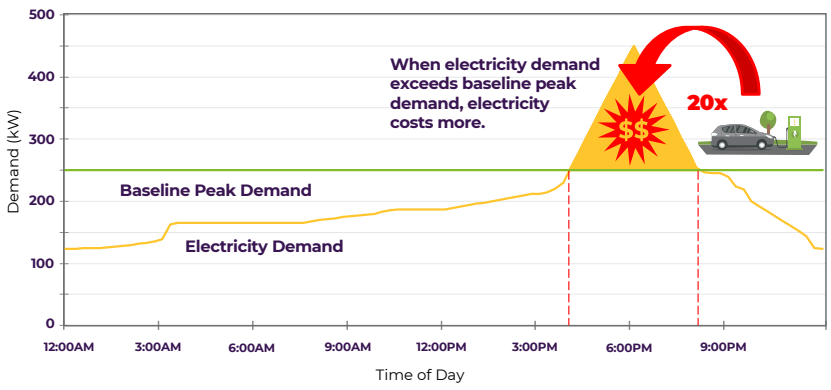
$476.44

HOW EV CHARGING AFFECTS UTILITY BILLS

It all begins with electricity demand. Demand is the real-time electric load of the building (or demand from the electric utility). Demand varies throughout the day as appliances and other electric loads are turned on and off. The highest demand point over the course of a month is "peak demand." In many markets, peak demand has a substantial impact on a property owner's utility bill. If a building's peak demand increases when new loads are added, the utility bill can increase substantially.

Installing EV charging infrastructure can add a significant additional load to a building's electric service. If this additional load exceeds the current service, you will need to obtain an electrical service upgrade from the utility. For example, say a building has a service level of 500kW with historical load of 300kW. If you add 400kW of new load in the form of EV charging infrastructure, the total load (700kW) now exceeds the 500kW service and you will need to upgrade to meet or exceed your new service capacity. This can be very costly.

UNDERSTANDING ELECTRICITY DEMAND



[1] Cost to charge a typical model year 2020-2022 EV with an approximate 300 mile range using average daily rates from the Energy Information Administration.

EV CHARGING + ENERGY MANAGEMENT = COST SAVINGS

Property owners can stay below baseline peak demand AND avoid service upgrade charges when adding EV charging to their buildings by using energy management in conjunction with a flexible and dynamic EV charging system. The key lies in selecting the right technology.

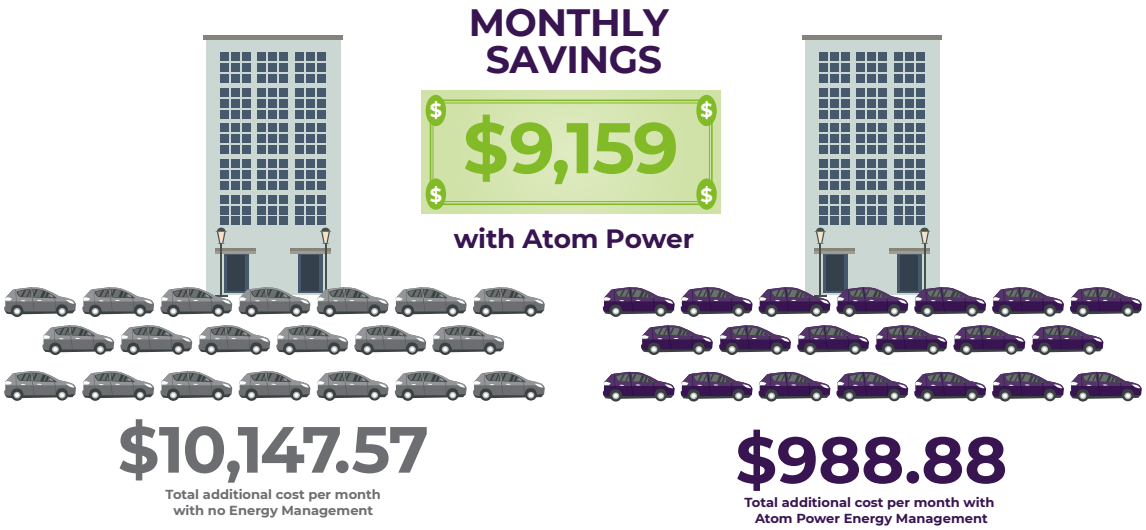
Atom Power's EV charging solution dynamically adjusts and manages EV charging by regulating vehicle charge rate, time of day, length of time, and overall energy an EV can use over the course of a given day. The system monitors real-time building load and evaluates historical baseline peak demand to target EV charging rates and times where current month peak demand will not be exceeded.

HOW IT WORKS

Say a NYC property owner adds 20 EV charging stations to their apartment building's parking lot. Residents typically charge their vehicles after they come home from work, starting between 4 – 6pm. Assuming each EV charges for an average of 2 hours per day at 10kW, an additional 200kW is pulled from the utility grid. Without energy management, the building's demand will spike above the historical peak by up to 200kW, which will dramatically increase electricity costs. At a demand rate of $45.79 per kilowatt, the demand charge will increase by $9,158.69 per month. If the property owner uses a dynamic energy management solution with the EV charging system, the only increase on their utility bill would be the electricity used for charging. At a rate of $0.0824/kWh, the increase would be $988.88 per month for 20 vehicles ($49.44 per vehicle).

COST TO CHARGE 20 EVS AT AN APARTMENT BUILDING IN NYC[2]

	DEMAND INCREASE (KW)	DEMAND RATE ($/KW)	INCREASE IN DEMAND CHARGE	INCREASE IN ENERGY (KWH)	ENERGY RATE ($/KWH)	ENERGY CHARGE	TOTAL ADDITIONAL COST PER MONTH	TOTAL CHARGE PER YEAR
No Energy Management	200	$45.79	$9,158.69	12,000	$0.0824	$988.88	**$10,147.57**	**$121,770.82**
Atom Power Energy Management	0	$45.79	$0.00	12,000	$0.0824	$988.88	**$988.88**	**$11,866.54**
						SAVINGS WITH ATOM POWER	**$9,158.69**	**$109,904.28**



[2] This case study includes data from an Atom Power customer.

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