

Using Solar PV to Reduce Demand Charges in Texas

What is the Demand Charge?

The Demand Charge is a monthly charge that commercial customers pay for the ability to draw variable amounts of power throughout the summer. It's easy to manage the power grid when companies pull a consistent amount of power throughout the summer, but this doesn't always happen as companies tend to pull far more power during the daytime when it is the hottest. As a result, the demand charge was created as a penalty of sorts to encourage companies to use less power during the times when the grid would be the most strained – ensuring reliable energy supply no matter how much electricity is demanded. The Demand Charge is included as a component of all commercial customer's monthly electric bill and **can account for 30-70% of the total bill.**

How is the Demand Charge Determined?

Firstly, there is a multiplier known as the Demand Charge Rate which is set by the Public Utility Commission. It changes year to year, but historically it's been in the range of \$1.50/kW on the low end to \$14/kW on the high end.

Secondly, there is a "Peak Charge." Each month, the meter will keep track of your electricity usage and at the end of the month your utility provider will determine the 15-minute period in which your company demanded the most electricity from the power grid. The amount in kW that your company was drawing from the grid during that 15-minute peak period is the value of the "Peak Charge."

Thirdly, the Demand Charge Rate is multiplied by the "Peak Charge" value, and that number is the amount a company is charged monthly as the "Demand Charge."

Why will solar help save money?

The Demand Charge is based on that Peak value – the amount of electricity (kW) your company is pulling from the grid during the 15-minute interval each month where your company is demanding the most electricity from the grid. This 15-minute interval is almost guaranteed to happen during the middle of a sunny weekday, as this is the time where your company would most likely be demanding the greatest electricity. This also happens to be the exact time when solar panels are able to generate the most electricity – during the middle of a sunny day. As a result, your company will need significantly less electricity from the power grid and your "Peak Charge Value" value will drop significantly. A drop in the kW pulled from the power grid has a direct correlation to the Demand Charge your company owes, potentially saving your company thousands of dollars per year.

How much will my company save?

Since the demand charge is calculated based on the amount of electricity demanded from the grid during your company's peak 15-minute period each month, and since solar panels will reduce that amount, the percentage reduction in the power your company will demand from the grid at your company's monthly peak is roughly equal to the overall percentage of your total consumption that solar generates so your demand charge will decrease by approximately that same percentage (there are taxes and other fees that mean it isn't directly a 1:1 correlation). *The over-simplified math...if your solar system will make 30% of your annual kWh it usually will also reduce your kW demand charge by a similar amount, so your total electric bill will generally be around 30% lower but possibly even lower if it places your business into a lower demand charge rate bracket.*