THE SECRETS OF A UTILITY BILL

And This is What You Can do About It

airkind

Most businesses think that electricity bills are just another check to write–a fixed cost that must be paid by a certain deadline. These bills can be expensive and even confusing in really showing you what the charges really are for.

But, what if I told you that there was a way to truly understand a utility bill by simply breaking down some of the basic terms? What if there was a way to understand what makes these charges so high, and thus, where they can be reduced to minimize costs for your business?

In this blog, we'll be dissecting the terms and charges of utility bills, uncovering all the secrets in truly understanding what the bill represents and how to reduce your bottom line.

So, let's dissect.

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The first important part is **learning the language.**

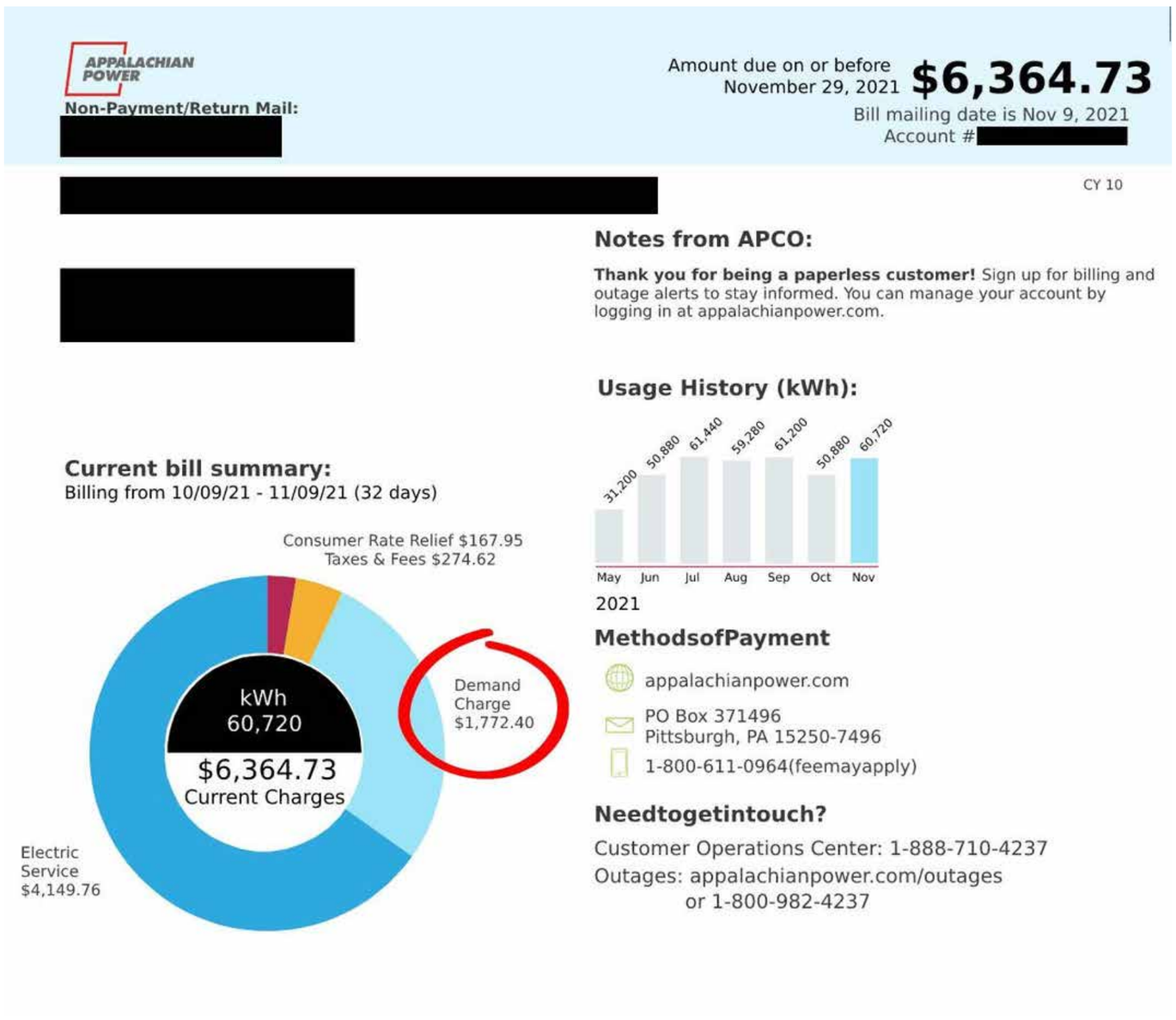
Step 1 is to understand the units of measurement that your energy bill is based on. Two most commonly used acronyms are kilowatt-hour (kWh) and kilowatts (kW).

Kilowatt-Hours (kWh) is a measure of energy. It is a simple unit of measurement to determine how much energy is being consumed.

Kilowatts (kW) are 1,000 watts, which is a measure of power. Power is an instantaneous draw of electricity. Think of this as pipes that draw water out of the big lake.

Commercial electricity billing is usually done using two different methods or a combination of those methods.

1. Bills based on energy billing schedules (kWh)
2. Power and energy charge schedules.



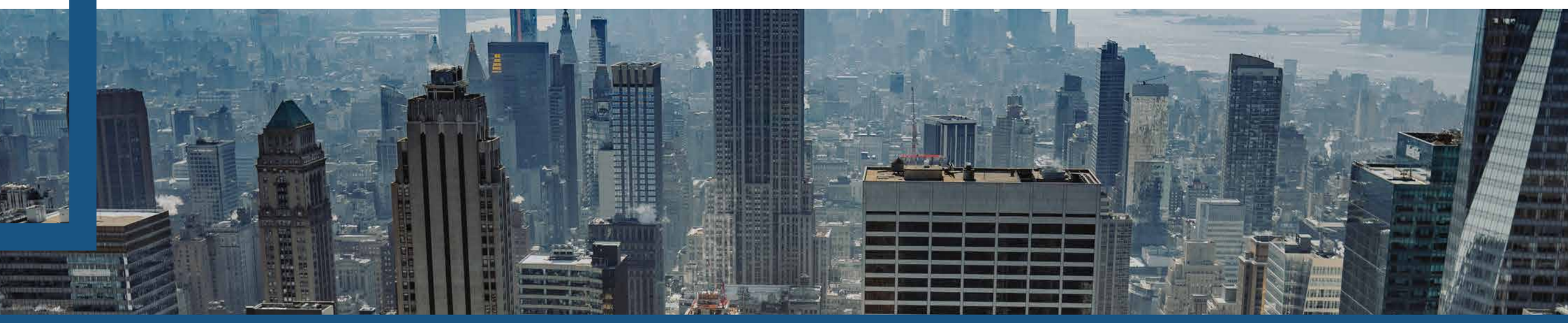
So, what charges are included in electricity bills?

Commercial electricity customers typically incur two different types of charges for their electricity usage during each billing cycle: supply charges and delivery charges.

“Supply charges” also known as **“energy charges”** are the cost of the total amount of electricity consumed during a billing period, measured in kilowatt-hours (kWh).

You can calculate your energy consumption charges by multiplying the amount of energy consumed (kWh) during each TOU (time of use) period, which is the electric rate schedule that adjusts the price of your electricity based on when you're using it, by the relevant price of energy ($/kWh) for each interval during the entire billing period.

“Delivery Charges” are the charges that have to do with delivering electricity, which includes the demand delivery charge, or “demand charge.” The demand charge amount is based on the highest period of demand for electricity during a billing period, measured in (kW). It is usually measured as the highest 15-min or 30-min (kW).



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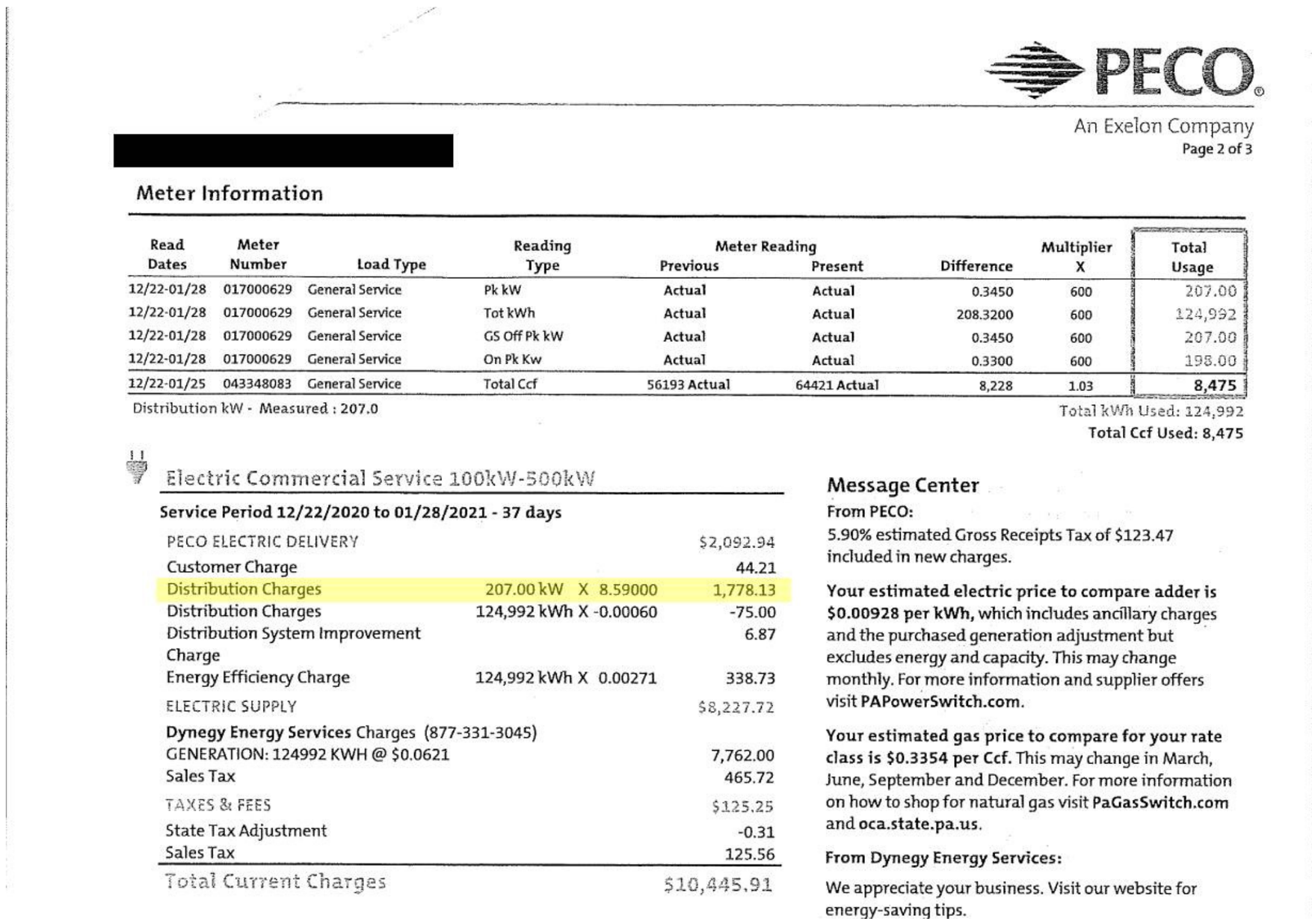
You may be wondering why there is a demand charge in addition to an energy charge?

A **"demand charge"** is applied to end-users who have the largest energy demands (for example, commercial buildings. For many commercial customers, the demand charge can account for 30% to 70% of a monthly electricity bill.

You can calculate demand charges by multiplying the maximum power draw (kW) for each TOU period - typically over 15-minute intervals - by the relevant demand charge ($/kW).

By tailoring an electricity bill according to their highest level of electricity demand, the utility is trying to distribute more of the costs associated with grid maintenance to those who require the most out of the power system. (**NYSERDA**)



PECO
An Exelon Company
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Meter Information

Read Dates	Meter Number	Load Type	Reading Type	Meter Reading Previous	Meter Reading Present	Difference	Multiplier X	Total Usage
12/22-01/28	017000629	General Service	Pk kW	Actual	Actual	0.3450	600	207.00
12/22-01/28	017000629	General Service	Tot kWh	Actual	Actual	208.3200	600	124,992
12/22-01/28	017000629	General Service	GS Off Pk kW	Actual	Actual	0.3450	600	207.00
12/22-01/28	017000629	General Service	On Pk Kw	Actual	Actual	0.3300	600	198.00
12/22-01/25	043348083	General Service	Total Ccf	56193 Actual	64421 Actual	8,228	1.03	8,475

Distribution kW - Measured : 207.0

Total kWh Used: 124,992
Total Ccf Used: 8,475

Electric Commercial Service 100kW-500kW

Service Period 12/22/2020 to 01/28/2021 - 37 days

PECO ELECTRIC DELIVERY			$2,092.94
Customer Charge			44.21
Distribution Charges	207.00 kW X	8.59000	1,778.13
Distribution Charges	124,992 kWh X	-0.00060	-75.00
Distribution System Improvement Charge			6.87
Energy Efficiency Charge	124,992 kWh X	0.00271	338.73
ELECTRIC SUPPLY			$8,227.72
Dynegy Energy Services Charges (877-331-3045)			
GENERATION: 124992 KWH @ $0.0621			7,762.00
Sales Tax			465.72
TAXES & FEES			$125.25
State Tax Adjustment			-0.31
Sales Tax			125.56
Total Current Charges			$10,445.91

Message Center

From PECO:
5.90% estimated Gross Receipts Tax of $123.47 included in new charges.

Your estimated electric price to compare adder is $0.00928 per kWh, which includes ancillary charges and the purchased generation adjustment but excludes energy and capacity. This may change monthly. For more information and supplier offers visit **PAPowerSwitch.com**.

Your estimated gas price to compare for your rate class is $0.3354 per Ccf. This may change in March, June, September and December. For more information on how to shop for natural gas visit **PaGasSwitch.com** and **oca.state.pa.us**.

From Dynegy Energy Services:

We appreciate your business. Visit our website for energy-saving tips.

Moreover, not only does the monthly kW determine that month's demand charge, but it could also potentially set the demand charge for the following 11 months! This depends on how the utility provider builds its charging system, but we have seen cases where the highest KW peak reached during a whole year actually set the other 11 months' demand charges–which makes kW reduction even more valuable.

On peak vs Off peak

Some rate structures include multiple types of demand charges, with higher charges during hours of peak demand, and lower charges during “partial-peak” or “off-peak” hours.

On-Peak hours are the time in which electricity costs more. These hours are typically selected to coincide with the times when the demand for electricity is greatest (often in the afternoon/evenings and the summertime).

Off-peak hours are the hours under a time of use rate plan when electricity is less expensive. This is typically the case because there are fewer people trying to access the grid during these hours, meaning there is less overall demand.

As a commercial building manager, one way to analyze these energy charges is to start writing down the rate of peak every month and ask yourself what’s different between these blocks of time to see if there is a correlation.

ACCOUNT NUMBER	DATE DUE	AMOUNT DU
[redacted]	01/27/2021	$10,993.9

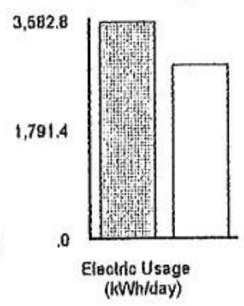
[redacted]

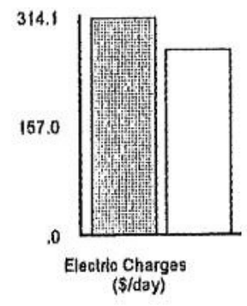
Billing Summary

Previous Balance 12/03/20..... $8,862.16
Payment Received As Of 12/17/20..... $8,862.16CR
Balance As Of 01/07/21..... $.00
Current Energy Charges 01/07/21..... $10,993.94
Total Amount Due $10,993.94

Monthly Energy Usage

This Year Last Y





	Usage/Day		Charges/Day		Avg
Electric	3,582.86	2,862.86	$314.11	$267.43	29F

Electric Service for 12/03/20 to 01/07/21 (35 Days) - 1,277 Heating Degree Days

On Peak Period : 9am to 9pm

Electricity
Meter Number..... PNXZT15765
On Peak
Actual Reading on 01/07/21..... 4820
Actual Reading on 12/03/20..... 4751
Difference..... 69
Meter Multiplier..... x 600
On Peak Electricity 41,400kWh

Total
Actual Reading on 01/07/21..... 13611
Actual Reading on 12/03/20..... 13402
Difference..... 209
Meter Multiplier..... x 600
Total Electricity 125,400kWh
Actual Maximum Demand (12/24/20 @ 18:00)
..... 186.000kw
Actual On-Peak Demand (12/24/20 @ 18:00)
..... 186.000kw

Total Usage Period : 12/03/20 to 01/07/21
Billed On-Peak Demand 186.000kw
Customer Demand 07/06/20 - 08/04/20
198.000kw
Total Consumption for All Meters 125,400
Total On-Peak Consumption 41,400
Total Off-Peak Consumption 84,000
Next Scheduled Meter Reading Date..... 02/05/21

Current Electricity Charges
Gen Secondary Large TOU Demand - CG3 35 Days
Customer Demand Charge (198.00 kw x $2.550000/kw)..... $504
On-Peak Demand Charge (186.00 kw x $15.184000/kw)..... $2,824
Facilities (35 days x $2.000000/days)..... $70
State Low-Income Assistance Fee..... $31
Energy - Off Peak (84,000 kWh x $0.050880/kWh)..... $4,273
Energy - On Peak (41,400 kWh x $0.071350/kWh)..... $2,953
Fuel Cost Adjustment - On Peak
(41,400 kWh x $0.000382/kWh) (prorated)..... $15
Fuel Cost Adjustment - Off Peak
(84,000 kWh x $0.000382/kWh) (prorated)..... $32
2017 Tax Cut-Deferred Tax Credit (125,400 kWh x $0.001870-/kWh).....$234
Subtotal Electricity Charges $10,471
Sales Tax ($10,440.33 x 5.00%) $522
Total Electricity Charges $10,993

In particular, take note of the difference between On-Peak and Part-Peak prices for both energy and demand charges.

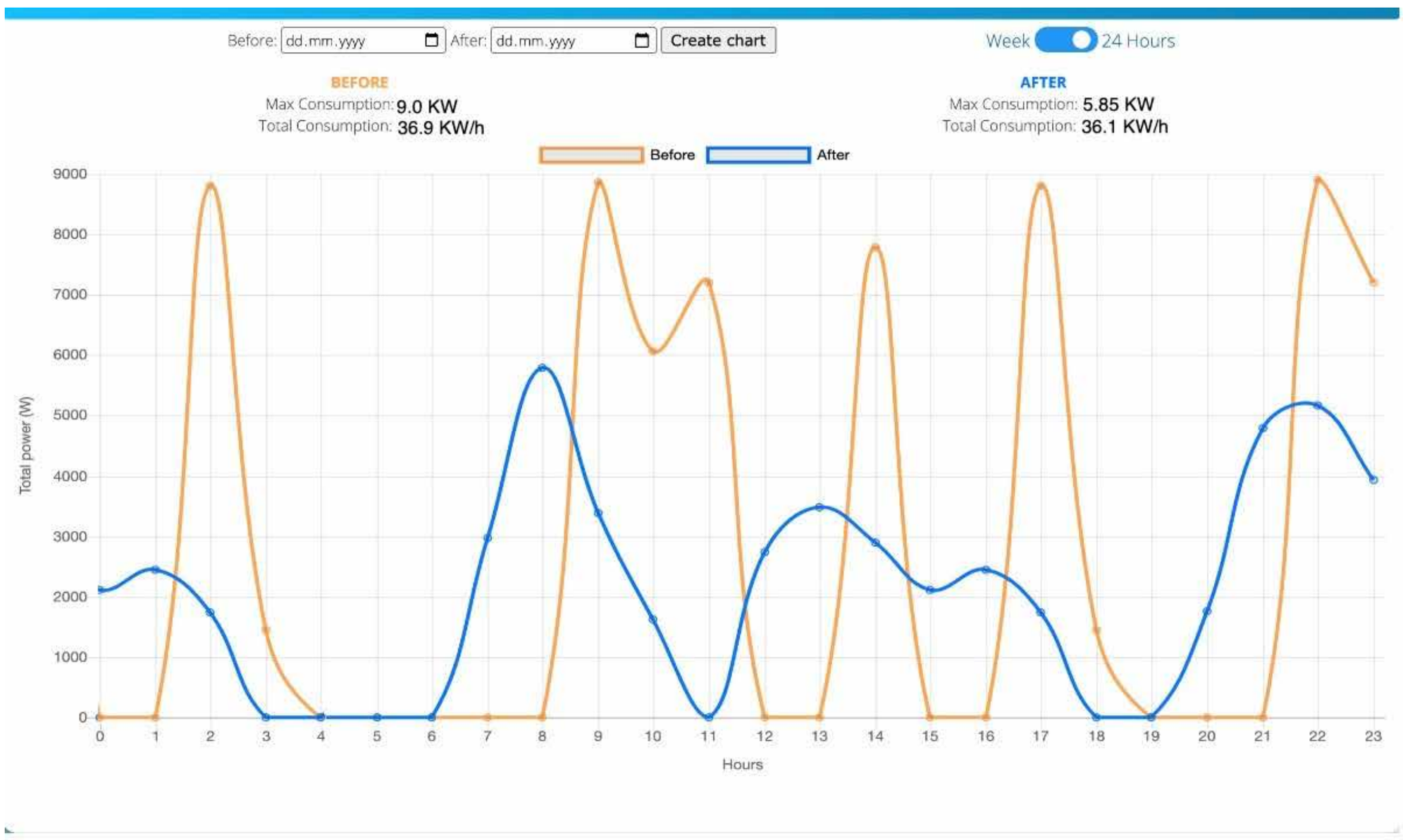
The difference in energy costs and demand charges between TOU periods, or from On-Peak to Off-peak hours, creates an opportunity to lower utility bills by switching energy consumption away from higher-cost periods.

How to Lower Demand

The difference in energy costs and demand charges between TOU periods allows behind-the-meter energy storage to provide value for commercial customers.

Peak-shaving algorithms can be used to reduce the amount of energy charged to their demand delivery, significantly cutting energy operational costs.

Airkind's Climate Intelligence technology solution includes a platform with an integrated machine learning program that conducts peak shaving for your commercial building, so your facility can focus on serving each individual residents' needs without worrying about an astronomical utility bill.



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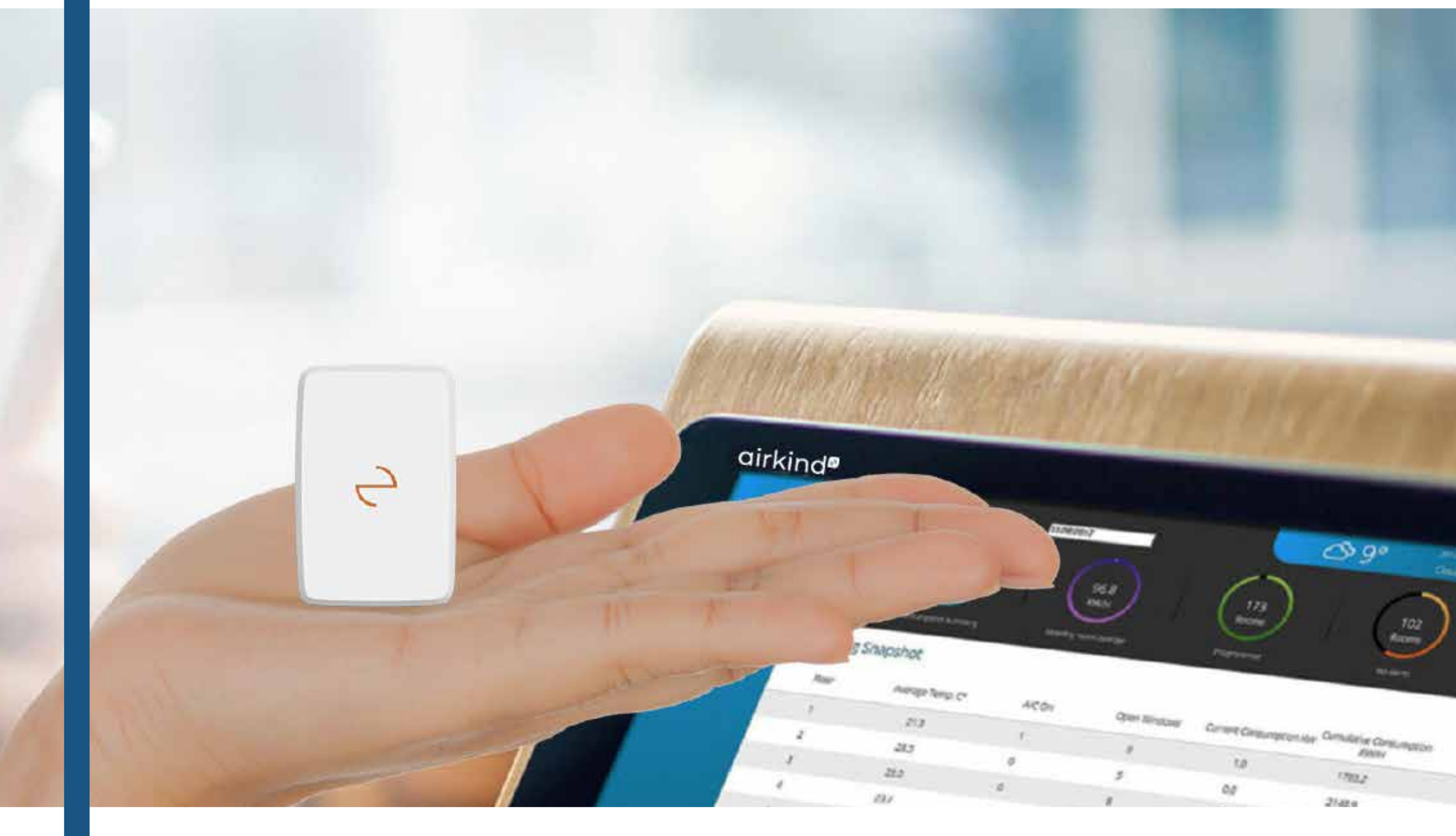
Final Thoughts

For most commercial buildings, utility bills go directly to the company's accounts payable department, and are considered a fixed cost that must be paid by a certain deadline.

The truth is, if one really understands what a utility bill entails, costs can be analyzed smartly, and reduced accordingly.



Want to see what our **Climate Intelligence Platform** can do for you? **Schedule a demo.**

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