



# So, What Goes Into My Energy Price?

A TCAP WHITE PAPER



# The Energy Charge Recipe

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The aftermath of winter storm Uri and the steady rise in energy prices starting in 2021 have created a new interest in utility rates. People are starting to question what exactly goes into developing the rates they are paying for gasoline, natural gas, and electricity. Why do prices keep rising? Is there anything we can do about it? How long will it be before we return to the low prices we were enjoying the past few years? Can we rely on reliable electricity in ERCOT? If not, how can we fix the market to ensure the citizens of Texas have reliable and affordable power?

TCAP thinks the first step to understanding the competitive electric market in Texas is to gain an understanding of what makes up your energy charges. Let's take a quick look at what comprises the charges on your electric bill.

## DELIVERY CHARGES

When Texas instituted customer choice in ERCOT in 2002, they only deregulated the side of the market devoted to creating and selling electric energy. Delivery of that energy from the generation source to a customer's meter was maintained as a monopolistic enterprise with each customer meter being served by a single delivery company provider under defined and regulated rates. Delivery charges (often called

wires charges) are set by and subject to approval of the Texas PUC. The rates are available in a tariff and are not discountable. So, in effect, it is not feasible for the vast majority of end use customer in Texas to reduce these charges by shopping for their delivery services among various providers. A customer can change Retail Electric Providers (or REPs) many times, but they will always have

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the same delivery service provider and pay the same amount for their delivery charges regardless of their REP. Using recent market energy prices, delivery charges would represent approximately 50% of an average electric bill for TCAP customers.

Some customers are served by cooperatives or municipal electric systems. Customers of these providers typically do not have customer choice and these companies typically regulate their own energy and delivery rates, although some PUC oversight can occur if enough of their customers petition the Texas PUC for a review of their rates.

## ENERGY CHARGES

Energy was the portion of electric service that was deregulated by the legislature starting in 2002. This portion of service includes the generation of electricity and sale to end use customers via Retail Electric Providers (or REPs). REPs are responsible for most customer interactions, including billings, payments and service issues. REPs billings will include charges billed by the delivery company, on

a pass-through basis. REPs cannot add additional charges or profits to this portion of customer billings.

What makes up my energy charges?

There are many hidden components to the charges a customer incurs for energy. They include, but are not limited to:

**a. Base Energy Price:** costs to procure the energy or produce the energy via generation.

**b. Losses:** charges for energy line losses on the electric grid between the point of purchase or generation and the customer meter.

**c. Bandwidth Charges:** additional charges that may be added if a buyer's usage falls outside a contractually agreed-to usage amount.

**d. Ancillary Services:** charges for costs incurred by ERCOT to maintain grid reliability.

**e. ERCOT Charge:** costs to fund the operation of ERCOT as the state's grid and market operator.

**f. Congestion (or Basis):** for transmission and distribution congestion incurred operating the grid.

**g. REP Services:** charges and profit for REP services.

**h. Broker Fees:** charges for brokers used to secure REP providers.

**i. Taxes:** if applicable.

**j. PUC assessment:** charges to assist in funding the Texas Public Utility Commission.

Added all together, these charges make up the components of a customer's energy price. These charges may all be lumped together into one overall energy charge, all billed separately on the customer bill, or a combination of these two extremes.

Below we will take a quick look at each of these charges.

### Base Energy Price

The Base Energy Price is the price paid for the actual generation of energy delivered to the meter. This can be energy that is purchased directly from a generation company or energy that has been bought and resold (sometimes numerous times) in the wholesale energy market. It is important to note that owners of generation supplies can either sell their power ahead of time into the spot market or to one of the many REPs that supply retail power to the market. These markets are fairly efficient, with numerous buyers and sellers, so it is very difficult to consistently secure energy supplies at prices that are lower than that available to the



broader market. All things being equal, why would anyone sell to one party at a price lower than they can get selling to another party?

### Losses

Energy is moved on wires by transmission and distribution companies from the point of production to the point of delivery (the customer meter). Injecting large amounts of energy onto these wires creates losses, both thermal and other. As an example, think about an old tungsten based light bulb. It is essentially a wire that emits light and heat when electricity flows across the wire. So if a customer needs 100kW of power at a meter, the generator will need to inject more than 100 kW of electricity onto the grid to deliver the 100kW at the meter. The difference between the amount injected into the grid and the amount taken off the grid is called losses. Since it costs money to produce this lost electricity, these costs will be passed through to the end use customer.

### Bandwidth Charges

Bandwidth charges may or may not be present in a contract for service. When a customer's usage



falls outside of an established bandwidth amount they may incur additional charges or have the additional energy priced at a then current market price.

Many times a REP will offer a standard contract with different pricing based on different bandwidths. For example, a contract with 100% bandwidth will typically be priced higher than a contract with 10% bandwidth. It is important for a buyer to have a sense of their monthly and annual usage and variability over time to see if paying a higher price for additional bandwidth is necessary or “unnecessary insurance”.

### **Ancillary Services**

ERCOT, as manager of the state’s electric grid, has the responsibility to ensure the reliable operations of the grid. With the exception of batteries, electricity cannot be effectively stored.

So when a generator goes offline or there is a sudden increase in load on the electric grid, there needs to be standby generation at the ready to offset the imbalance of load and supply on an immediate basis. ERCOT accomplishes this by buying excess capacity for immediate use or paying available units to remain on-line so an immediate supplemental source of power can help keep the lights on. ERCOT also pays for additional services to maintain grid reliability. The common name for this suite of reliability services is ancillary services. Since all end users on the system benefit by a reliable electric grid, ERCOT charges all loads (end users) taking power from the electric grid the costs of these services on a pro-rata basis. Essentially, ERCOT sums the total of all electricity that was used for the period and allocates the total costs of procuring these services to all users during that period. Many of these services are procured via a bid market system, so the costs can vary quite



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substantially from hour to hour. It is difficult to place a discreet cost of ancillary services because every contract can have numerous different market charges included in the ancillary service price or price each of these services individually. However the majority of ancillary services are contained in four major services and the costs of the services in 2022 have averaged over \$0.0042 per kilowatt-hour year to date.

#### **ERCOT Charges (System Administration Fee, et al)**

ERCOT operations are funded by the users of the system. Every year ERCOT submits a proposed budget for the upcoming year to the Texas PUC along with an assumed usage level for that next year to develop a per unit based charge to the

market to collect the funds necessary to maintain ERCOT facilities and operations. This ERCOT System Administration Fee is billed by REPs to their customers as part of their electric service billings, although it is often blended into the energy rate and not shown as a discrete billing item. The funds received by the REP are passed on to ERCOT. As of 2022 the ERCOT System Administration Fee is \$0.555 per Megawatt-hour or 0.0555 cents per kilowatt-hour.

There are many other costs incurred by ERCOT that are passed on to end use customers in whole or in part. They are too numerous to mention in this article, but a common one that has been in the news lately is Reliability Unit Commitment (RUC) which are costs ERCOT incurs to pay certain requested generators to run and remain at the ready to provide energy into the grid on short notice. RUC service has been used heavily by ERCOT during the summer heat wave of 2022.

#### **Congestion (also called “Basis” or “Hub to Load Zone Price Differential”)**

ERCOT procures market energy using a bid stack submitted by sellers. Buying starts from the lowest bid price and keeps procuring energy moving up the bid stack until all demand is satisfied. The price of the last portion of energy procured becomes the market price for that time interval and all sellers are paid that market price. Sometimes procuring energy on the basis of price can result in certain parts of the grid being oversaturated with energy inputs, overloading parts of the grid and creating grid instability. In these instances, ERCOT amends their procurements to balance grid energy by



backing off energy purchases in critical areas and buying out of market priced energy in other areas to maintain system stability. This increases market costs for energy and these increased costs are called congestion. Congestion costs vary by region (zone) over time. These costs can be financially hedged, similar to a form of congestion insurance, but the costs of these hedges are often higher than the actual costs of congestion incurred. As with other products, these costs may be blended into a total energy rate in a contract or billed as a separate discrete line item.

### REP Services

Retail Electric Providers also have costs and these costs need to be covered, along with a profit margin. These costs are typically embedded within the energy rate quoted to a potential buyer. However, it can be possible to negotiate this per unit of energy rate so the end use customer knows exactly how much they are paying to their REP for these services.

### Broker Fees

End-use customers that utilize a broker to obtain

bids and negotiate contracts will be paying a broker fee. This fee is usually embedded in the energy rates quoted to the buyer. So when you pay your electric bill, a small amount (typically determined on a rate per kwh basis) is used to have the REP pay the broker for the customer they “delivered” to the REP. Many times brokers will say “you don’t pay us, the REP does”. This is just a marketing ploy since their costs will be embedded in the energy fee you pay. There is a lot of variation in the services a broker provides for the buyer. There is also a wide range of broker fee rates charged by brokers.

It can be difficult at times to get the broker to disclose their rate to the buyer. It is important to know however, so the buyer can effectively judge what the broker is getting paid and compare this to the services provided.

As a side note, there are also a couple of other important considerations when using a broker. First, since a broker fee is typically based on a fixed rate per unit of usage, this may lead brokers to favor longer term contracts when presenting

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prices to buyers. Second, it is important to understand that a broker will typically only bring you price offers from REPs with whom the broker has an established agreement for payment. So the customer must keep in mind that offers presented by brokers may not represent the broader market of REPs, but only the REPs the broker has a payment agreement with.

**Taxes**

Taxes for which a buyer will be charged will vary by customer and are usually not included in the energy rate, but detailed as a separate line item on an electric bill. Taxes are assessed on the entire electric bill (energy and delivery charges).

**PUC Assessment**

The PUC Assessment is a very small tax-like adder to an electric bill to provide funds to maintain the facilities and operations of the Texas Public Utilities Commission. It is currently set at one-sixth of one percent of the entire bill (energy charges and delivery charges).

IN SUMMARY

As mentioned earlier, electric service rate offerings vary significantly, even with offers made by the same REP. Some may present an all-in price that includes the costs of all of the various components of an energy rate. Some may present a price that only includes some of the items mentioned above and only mention the un-included as additional costs to be charged in contract language. It is important to ask questions so the buyer can do an apples-to-apples comparison of charges. Additionally, to the extent possible, it is to the customer's advantage to know the costs of the various components of an energy rate to facilitate sound decision making when procuring electric supplies. Below is an approximation of the impact of these various components may be based on recent market prices.

Typical Energy Rate Components (Example Only)	
Base Energy	85%
Ancillary Services	5%
ERCOT Charges	1%
Losses	6%
Congestion	1.5%
Retail Adder	1.5%
Bandwidth, Broker Fees, Taxes and PUC Assessment	Varies or Not Incurred





## About TCAP

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Unlike the sponsors of other reports about the state's deregulated power market, TCAP derives no profit from selling electricity. Instead, the 170 political subdivisions that comprise TCAP purchase electricity for their own governmental needs. TCAP understands how high-cost power can cause businesses to relocate out of state, and can place heavy burdens on home consumers. TCAP wants what all Texans want: an affordable and reliable supply of power and a vibrant economy.

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