

How do I know what my PF is?

How do I know if my Power Factor is costing me additionally on my power bill?

Each utility has a different way of doing what is fundamentally the same thing which is calculating the electrical usage and cost. For small and large electrical customers most utilities add a separate **Demand Charge** which is now often referred to as a **Delivery Charge**. This is this part of the bill that the Power Factor affects most significantly. Most utilities do not make clear what the power factor is although some do. The answer most of the time is on the electric bill, but it's not usually apparent and, sometimes not there at all. This makes calculating the cost difficult to impossible in this case without their assistance or an electrical test.

EPower Factor can assist with both.

Some utilities call the added "Power Factor Penalty";

- Excess kVA Charge
- kVA Demand
- kVA Charge
- Power Factor Charge

An example of a utility that does make it clear is Connecticut Light and Power. (CL&P) with an actual page shown here.

How does a better PF save \$\$

As seen to the right the kW and kVA demand on this power bill, as measured by the utility metering equipment, is clearly printed on the bill. In this case their electrical demand cost is significantly higher due to the low PF because the utility uses the **kVA demand** for billing not the kW demand.

If the PF were improved, the kVA demand would be lower for the same amount of kW.

**Example above:** 1800 kW X .86 PF = 2104 kVA (billing demand)

If the PF was 1.0 the kVA would be the same as the kW. (kVA = kW X PF) 1800 kW X 1.0 PF = 1800 kVA (billing demand)

So to calculate the savings potential on this bill is relatively simple assuming the PF was improved to 1.0. 2102 - 1800 = 302 units of demand at a cost of \$6.07 per kVA = \$1,833.14 savings for this month

We would need to review your particular electrical invoices to determine *if and how you may be penalized* as each utility is different. If you have a kVA, kVA or Reactive demand charge you are paying for a low PF and should contact us. There are other methods, some complicated, that utilities use to charge for Power Factor, if you suspect this please get in touch with us and we can help. **Please see our partial list of utilities that have known PF charges.**

Account number: [REDACTED]

Allocated use for	19 days	(Dec 31 to Jan 19)			
<b>Delivery Services Detail</b>					
Prod/Trans Dmd Chrg	2102.40KVA	x \$4.820000	x 0.5758	\$5,834.91	
Distr Cust Svc Chrg	\$2,000.00000	x 0.5758		\$1,151.60	
Distribution Dmd Chrg	2880.00KVA	x \$4.370000	x 0.5758	\$7,246.79	
Facilities Ownrshp Credit	1000.00KW	x -\$0.200000	x 0.5758	-\$115.16	
	1332.80KW	x -\$0.100000	x 0.5758	-\$76.74	
Prod/Trans CTA Dmd Chrg	2102.40KVA	x \$1.250000	x 0.5758	\$1513.20	
FMCC Delivery Chrg On-Fk	140835.00KWH	x \$0.005250		\$739.38	
FMCC Delivery Chrg Off-Fk	425213.50KWH	x \$0.001130		\$480.49	
Combined PBC - On-Fk**	140835.10KWH	x \$0.004260		\$599.96	
Combined PBC - Off-Fk**	425213.50KWH	x \$0.004260		\$1,811.41	
Economic Transition Charge***	4566048.50KWH	x \$0.003790		\$2,145.32	
<b>Total Delivery Services</b>				\$21,331.16	
<b>Other Charges / Credits</b>					
Gross earnings tax credit on \$34,981.45				-\$2,973.43	
6% CT Sales Tax after Exemption of \$150.00					
CT Sales Tax Delivery				\$1,048.12	

Service Account Messages  
 2% Primary Meter Discount: 1003200.0 KWH 983136.0 KWH BILLED  
 Distribution Demand based on ratchet  
 Because the billing period spans a change in the rates, your usage has been calculated partly on the old rate and partly on the new rate.

Explanation of your charges  
 \*The Competitive Transition Assessment we collect is owned partly by CL&P Funding, LLC and partly by Power Factor the State of Connecticut.  
 \*\*The Combined Public Benefits Charge represents a combination of three charges formerly known as: "Conservation and Load Mgmt Charge, Renewable Energy Investment Charge, and Systems Benefits Charge."  
 \*\*\*Effective January 1, 2007, the Generation Services Charge (GSC) and the Bypassable Federally Mandated Congestion Charge (BFMCC) have been combined into the "GSC Charge" listed in the Supplier Services section of your bill. The GSC reflects all of the cost of procuring energy from CL&P wholesale suppliers. The BFMCC portion of this line item is \$0.0025/KWh. If you multiply this BFMCC rate by the number of kWhs on your bill, you can calculate the dollar amount associated with the BFMCC.  
 \*\*\*\*public Act 10-179 requires CL&P to collect additional charges to fund a state budget deficit for the 2010-2011 fiscal year. As a result, a line item called the "Economic Transition Charge" will appear on your bill from January 1 through June 30, 2011. Thereafter, the line item "ERRB Charge" will appear on your bill. These line items are consistent with an order issued by the Connecticut Department of Public Utility Control.

Account messages  
 Max kW vs Max kVA Ratio = 1800.0 / 2102.4 = **.8604**  
 Power Factor at Max kVA = 1795.2 / 2102.4 = **.850**

For tax purposes, your 2010 interest paid for late payment charges was \$406.74.