

## POWER FACTOR: IMPACT ON ENERGY BILL AND CONTROL METHODS

Dear Consumer,

Greetings from Noida Power Company Limited..!!

This is in reference to your electricity connection with NPCL, wherein we would like to apprise you with important information regarding Power Factor Control.

Please refer the below points to understand how energy usage is determined.

1. Your energy usage is determined on KVAH basis, as your load is 10 KW / 13 BHP or more.
2. KVAH is defined as the Apparent Power consumption that is calculated by the energy meter on the basis of recorded Active Energy Consumption (KWH) & recorded Reactive Energy Consumption (KVARH).
3. Reactive Energy Consumption (KVARH) is recorded in energy meter in two modes namely **lag** and **lead**.
4. It is pertinent to mention here, that Reactive Energy (both lag & lead) reduces the useful capacity of the distribution network; hence both KVARH (Lag) & KVARH (Lead) are considered to ascertain overall KVAH.
5. Power factor (PF) for the month is determined as the ratio of KWH Consumption to KVAH consumption and displayed on electricity bill. The lower the value of PF, the higher will be the energy charges.

In this regard, you are hereby advised to check your existing capacitor bank installation for the following conditions:-

- Check for the capacity of Capacitor Bank installed against the total inductive (motor) load in your system. Remove excess capacitors of appropriate ratings(if applicable)
- Installation of Automatic Power Factor Correctors (APFC) panels, that will adequately compensate for your reactive energy requirement and auto shut as and when your load is not in use.

Thus, you can nullify your total reactive energy requirement through capacitor bank itself, which will eliminate the reactive energy (lag) drawl from grid and avoiding over compensation shall eliminate the reactive energy (lead) bringing your power factor close to unity and reducing your energy bill.

***It is to be noted here, that not considering the automatic shut feature and merely increasing your capacitor bank capacity, might cause a further dip in your power factor.***

Hope this information will be useful towards ensuring optimum energy management in your premises.

Thanks & Regards,

Commercial Department  
Noida Power Company Limited