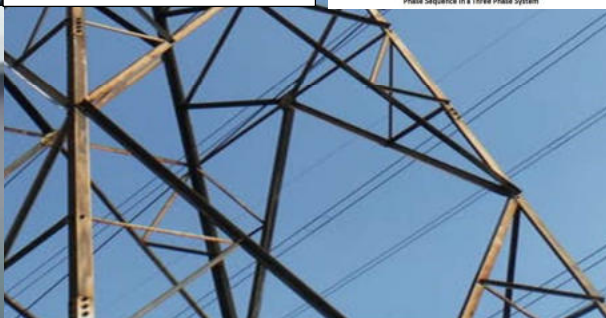
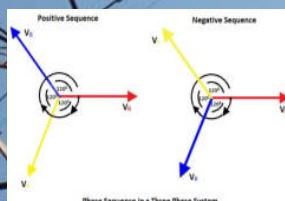
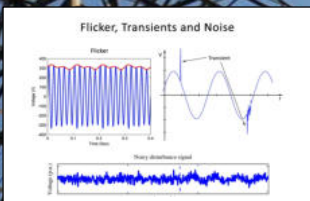




# Electrical Fire & Safety-Power Quality-Energy Audit

For Efficiency & Life

BNN POWER - BEE Empaneled Energy Service Company, Govt. of India, Ministry of Power Initiative



## Importance of Electrical Fire & Safety

Electrical fire safety Audit is important because more than 40% fire incidences takes place due to faults in Electrical circuit/connections, rise in Temperature, Harmonics heat etc. Power Quality determines the fitness of Electrical power to consumer devices. It also refer to the relative frequency and severity of deviations in the incoming power supplied to electrical equipment's from steady or fundamental 50 Hz, sinusoidal waveform of voltage and current. These deviations may affect the safe or reliable operation of electrical equipment's such as circuit breakers, Motors, Fans, variable frequency Drives, CNC machines, Lifts, Cranes, Air conditioners, LED lamps, UPS, Computers, Printers, Servers, Laboratory equipment's etc.

## Importance of Power Quality

Electrical power is expected to deliver undistorted sinusoidal rated voltage and current continuously at rated frequency to the consumers. Power quality can be defined as any problem manifested in voltage, current, or frequency deviation that results in failure or malfunction of electric equipment. Power quality is predominantly a customer issue. When quality of the power supplied is deficient, it results in performance degradation and reduced life expectancy of equipment. Characteristics that affect power quality are voltage fluctuation, harmonic distortion, unbalance V & A, flicker, supply interruptions, voltage sags, voltage swells and transients etc. Complete world is increasingly run by motors but backed /controlled by electronics cum microcontrollers that are even sensitive to small electrical fluctuations, illustrates power quality disturbances. To prevent them intensive care is required to be taken on different ground.

## Importance of Thermography

Electricity at Work Regulations Act 1989, Health & Safety at Work Act 1974 and BS 7671 (IEE Wiring Regulations 17th Edition as amended) suggest that electrical infrastructure be regularly maintained and tested to ensure compliance with safety guidelines. By rendering infrared radiation surface accurate temperature can be captured & displayed. Using Therography imaging camera and detecting connections and repairing them, the likelihood of a breakdown of the electrical wires and related components will be reduced.



ऊर्जा दक्षता ब्यूरो

(भारत सरकार, विद्युत मंत्रालय)

BUREAU OF ENERGY EFFICIENCY  
(Government of India, Ministry of Power)



17/05/ESCO/20-21/881-980

18<sup>th</sup> August, 2020

Mr. Sudhir Modak,  
Partner  
BNN Power  
6-Satyam Industrial Estate,  
Govandi Station Road, Govandi,  
Mumbai-400088

Sub: Empanelment of Energy Service Company (ESCO)

Dear Sir,

This has reference to your application for empanelment/ re-empanelment as an Energy Service Company with BEE in response to our advertisement for re-empanelment and fresh empanelment of ESCOs in the month of January, 2020.

Consequent to scrutiny and evaluation of your documents by SEBI accredited Rating Agencies CRISIL /CARE /ICRA/CART in terms of the approved parameters for evaluation, BEE is pleased to inform that your company **BNN Power** has qualified for empanelment with BEE as a **Grade 2** Energy Service Company (ESCO). This empanelment would be effective from 15<sup>th</sup> August, 2020 and will be valid till 14<sup>th</sup> August, 2022.

Further, the list of all the empanelled ESCOs along with grade assigned by CRISIL /CARE/ICRA/CART is uploaded on its website ([www.becindia.gov.in](http://www.becindia.gov.in)) for use by State/Central government/Public Sector agencies as well as by any other agency interested in implementing energy efficiency projects on ESCO mode. Please acknowledge your acceptance to this letter.

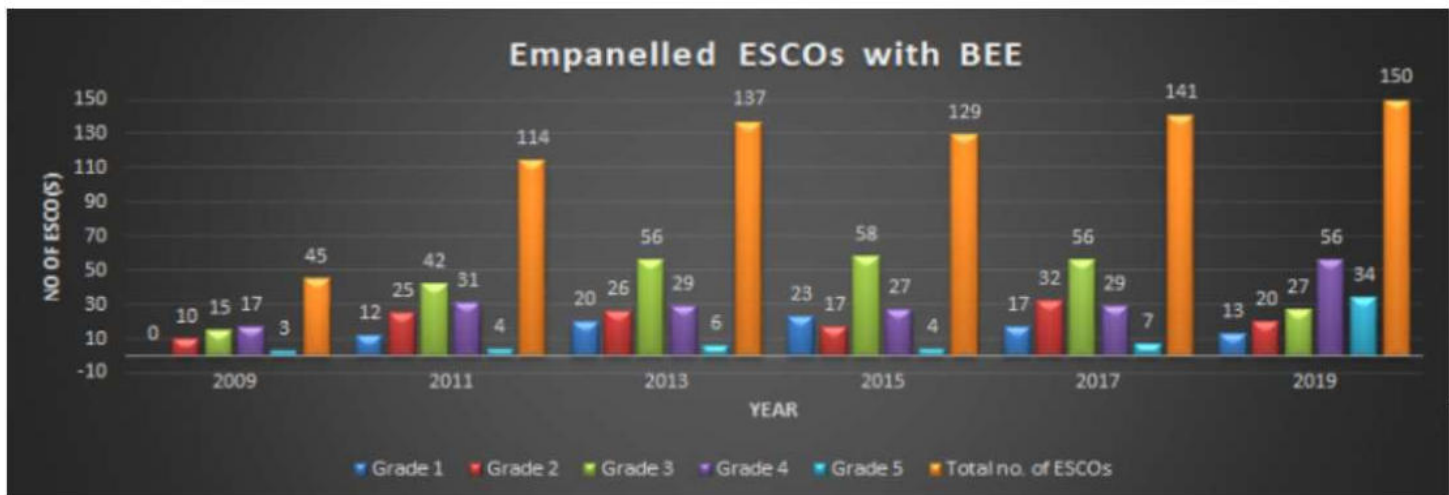
Yours faithfully,

  
(Arijit Sengupta)  
Director

स्वच्छि एवं राष्ट्रहित में ऊर्जा बचाएँ

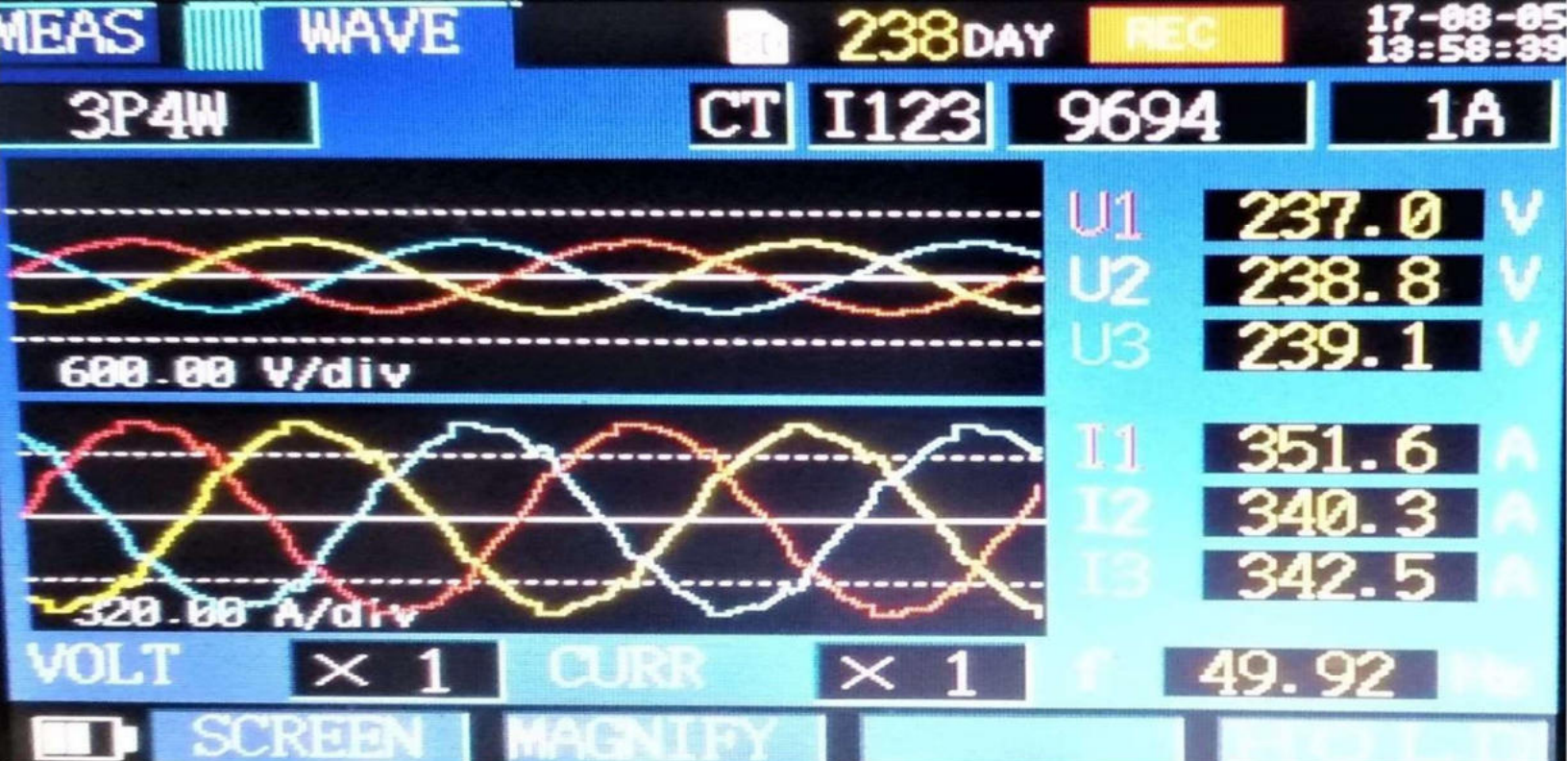
Save Energy for Benefit of Self and Nation

**Energy Service Companies (ESCOs)** is a company that offers energy services, usually design, retrofitting and implementation of energy efficiency projects after identifying energy saving opportunities through energy audit of existing facilities. It also includes energy infrastructure outsourcing, power generation and energy supply, financing or assist Facility's Owners in arranging finances for energy efficiency projects. ESCOs operates by providing a savings guarantee, risk management in the implementation of the energy efficiency projects and also perform measurement & verification(M&V) activities to quantify actual energy savings post implementation of energy efficiency projects etc.



BEE does

empanelment of ESCOs through a process of grading carried out by SEBI Accredited rating agencies CRISIL/ CARE Advisory Research & Training Ltd /ICRA Analytics Ltd. indicating capability in implementation of energy efficiency projects through performance contracting based on availability of technical manpower, financial strength, market position etc. Currently, 127 ESCOs are empaneled by BEE. The energy efficiency market in India is estimated to be worth INR 150,000 Crore, out of which only 5% potential has been tapped by ESCOs so far. Accordingly, a significant Energy Efficiency potential is left untapped in India and ESCOs are supposed to be the main vehicle to harness this potential.



## ADVANTAGES

- Assist in preventative and predictive maintenance
- Reduced Efficiencies
- Insulation Damage
- Pulsating torque's in rotating Machinery
- Interference with communication, Control and Signal circuits
- Malfunction of Equipment.
- Increased Operating Temperature on Equipment, Cables, Switchgears, Motors & Transformers.
- Reduced Equipment Life & high maintenance Costs.
- Reduced Capacitor life /Capacitor failures
- Blown fuses & tripping of switch-gears.
- Increased Copper Losses
- Max. Demand Control
- Electricity bill control
- Power Factor Improvement
- Reactive Power management

## Why POWER QUALITY ANALYSIS ?

- To Improve Power Factor & system efficiency.
- To Avoid Break-downs time & production Interruptions
- To Avoid excess Energy consumption.
- To remove Harmonics, Surges & Transients from electrical Network.
- To Avoid Voltage/frequency fluctuations & device Hang-up.
- To Avoid Transformer overheat, Capacitor burst, Trip Etc.
- Savings in Energy Bills due to reduced Losses & KVA demands.
- Accurate Measurements by Installed Meter.
- To avoid Earth Leakage current
- Enhanced Life cycle of Electrical network & component.
- Maximize Plant distribution Capacity.
- To maintain KWH=KVAH
- To reduce Harmonics distortion
- To reduce Neutral current
- To avoid current unbalance