

TRINITY ENERGY SYSTEMS PVT. LTD.
386, Savli – GIDC Estate, Manjusar – 391775, Dist. VADODARA

Gujarat, INDIA. Telephone No. +91 – 9228004452/53/54
Email: info@trinityenergy.co.in, Web: www.trinityenergy.co.in



CASE STUDY

PRODUCT- LLPFC, SINGLE PHASE PANEL

SEP2019

COMPANY INFORMATION

NAME	TRINITY ENERGY SYSTEMS PVT. LTD.
Address	386, SAVLI, GIDC ESTATE, MANJUSAR
City, state, ZIP Code	VADODARA, GUJRAT, 391775
Phone number	9228004452/53/54

Contact name	MR. Vikram Singh
Tit	MANAGER – SALES (NORTH)
Phone number	8860213050
E-mail address	Vikram.singh@trinityenergy.co.in
Website address	www.trinityenergy.co.in

Solution offering	MANUFACTURING OF DIGITAL PANEL METERS, ENERGY METERS, MULTIFUNCTION METERS, MAXIMUM DEMAND CONTROLLERS, APFC RELAYS, RTPFC PANELS, CTs, POWER CAPACITORS, EMS
-------------------	---

CUSTOMER PROFILE

Customer name	XXXXXXXXXXXXXXXXXXXX
Address	XXXXXXXXXXXXXXXXXXXX
City, state, ZIP Code	Nangloi , Delhi
Phone number	XXXXXXXXXX

Industry Type	Machine JOB Work
Number of employees	10

Contact name	XXXXXXXXXXXXXXXX
Title	XXXXXXXXXXXXXXXX
Phone number	XXXXXXXXXXXXXXXX

TRINITY ENERGY SYSTEMS PVT. LTD.
386, Savli – GIDC Estate, Manjusar – 391775, Dist. VADODARA

Gujarat, INDIA. Telephone No. +91 – 9228004452/53/54
Email: info@trinityenergy.co.in, Web: www.trinityenergy.co.in



E-mail address

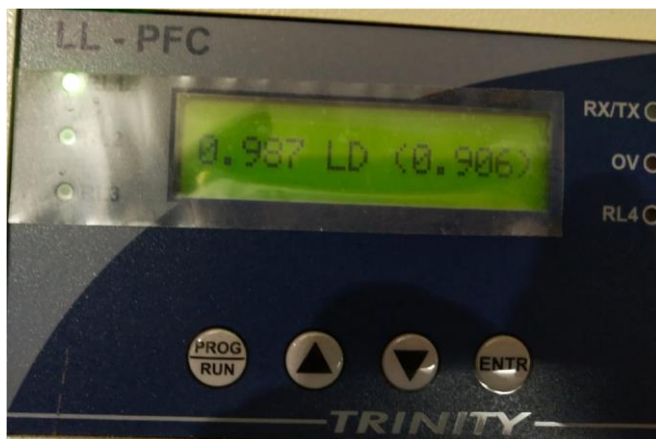
XXXXXXXXXX

CHALLENGE

- Once KVAH billing was introduced in single phase meters for upto 10 KW Loads , the client wanted to **Minimize their Energy Consumption** which is costing them to pay the Extra amount in their Electricity Bills and also target reduction in Demand.
- Their Energy (KVAH) consumption was very high owing to **Energy Losses because of Very Low Power Factor (around 0.65 LG – 0.75 LG)**
- Their monthly **Electricity Bill was 20000/-**
- **Maximum Demand was 13KVA.**, for 4 KVA sanction load.
- They used Fixed Capacitors for Power Factor Improvement but did not get any improvement.

SOLUTION

- LLPFC – Low Load Power Factor Panel was installed in the factory to correct the nature of the load and provide savings.
- We Installed 8 KVAR panel wrt load condntions.



TRINITY ENERGY SYSTEMS PVT. LTD.
386, Savli – GIDC Estate, Manjusar – 391775, Dist. VADODARA

Gujarat, INDIA. Telephone No. +91 – 9228004452/53/54
Email: info@trinityenergy.co.in, Web: www.trinityenergy.co.in



Energy Bill of July 2019 - BEFORE LLPFC INSTALLATION

KWH Units :1193

KVAH Units :1576

SANCTIONED LOAD : 4 KVA

MDI :13 KVA

PF : 0.75

BILL AMOUNT :20000/-

BSES BSES Rajdhani Power Limited

Bill of Supply for Electricity

Name: [Redacted]
Billing Address: [Redacted]
Mobile / Tel. No.: [Redacted]
Email ID: [Redacted]
District / Division: [Redacted]
Walking Sequence: [Redacted]
Bill Month: JUN-19
Bill Date: 23-06-2019

Sanctioned Load : 4.00 (KVA)
Contract Demand M.D.I. : 13.00 (KVA)
Power Factor : 0.757
Pole No. : NGLPA001S1
Meter Reading Status : DL
Cycle No. : 11
Tariff Category : Non Domestic [LT] (Up to 10 kW)

CA No. : [Redacted]
Energisation Date : 11-02-2011
Meter Type : 1PSK
Supply Type : LT
Bill No. : 100784271296
Bill Basis : Actual
O.D. No. : R/19/10126771291

Due Date दिनांक (दिनांक): 11-07-2019

Customer Care Centre No. (ग्राहक सेवा सेंटर का नंबर) 39 99 97 07

Meter No. (मीटर सं.)	Unit (यूनिट)	Billed Consumption (Current) (वीयर सेडिंग की तिथि)	Reading (रीडिंग)	Billed Consumption (Previous) (वीयर सेडिंग की तिथि)	Reading (रीडिंग)	Multiplication Factor (गुणक)	Current Consumption (वर्तमान उपभोग)	Days (दिन)	Unit (यूनिट)
40916963	kWh	22-06-2019	6490.00	22-05-2019	5297.00	1.00	31	1193.00	
40916963	kW	22-06-2019	6.96	22-05-2019	6.96	1.00	31	6.96	
40916963	kVAh	22-06-2019	9823.00	22-05-2019	8247.00	1.00	31	1576.00	
40916963	kVA	22-06-2019	12.17	22-05-2019	12.17	1.00	31	12.17	

Billing Details (बिल का विवरण)
Current Period Charges (वर्तमान अवधि का शुल्क) (23-05-2019 to 22-06-2019)

Fixed Charge "A" (स्थायी शुल्क)	Consumption Measured During (वर्षा अवधि में मापा)	Energy Units Consumed / Billed (इकाई / बिल में)	Slabwise Energy Charge (स्लेब अवधि में शुल्क)	Slabwise Power Purchase Adjustment Charge (स्लेब अवधि में शक्ति खरीद का समायोजन शुल्क)	Time of Day (TOD) Charge (टीओडी शुल्क)	Surcharge @ 1% on Energy Charge + Fixed Charge - Rebate (1% पर शुल्क + स्थायी शुल्क - रीबेट)	Electricity Tax @ 1% on Energy Charge, PPAC amount & TOD Surcharge (1% पर शुल्क, PPAC राशि और TOD संचार्ज)	Total Amount (A+B+C+D+E+F+G+H) (कुल राशि)
1326.68	1576.00	8.00	12608.00	4.50	567.36	1274.79	709.20	19261.66
PPAC on Fixed Charge "G" (स्थायी शुल्क पर PPAC)								
149.71						605.52		
Total Units = 1576		Total (B) = 12608.00		Total (C) = 567.36		Total (D) =		

Past Dues / Refunds / Subsidy (पिछला बकाया / वापसी / सब्सिडी)

Arrears / Refunds (बकाया / वापसी)	Late Payment Surcharge (LPSC) (देरी से भुगतान पर औचित्य)	Other Charges, if any* (अन्य शुल्क, यदि हो तो)	Total Charges Payable (कुल देय शुल्क)	Rebate / Subsidy* (रिबेट / सब्सिडी)	Net Amount Payable (कुल देय राशि)
		687.96	19929.42		19929.42

Amount not immediately payable, if any. (राशि जो तुरंत देय नहीं है यदि हो तो) ₹ [Redacted]
Reasons (कारण) [Redacted]

Service line cum Development Charges paid (सुविधा लाइन और विकास शुल्क) ₹3000.00
Security Deposit with DISCOM (कंपनी के साथ जमा सुरक्षा राशि) ₹6000.00
Interest accrued for FY2018-19 (वर्षा 2018-19 के लिए अर्जित ब्याज) ₹ (489.00)

Bill Amount Payable (बिल देय राशि) ₹ 19930.00
Due Date of Payment (भुगतान की तिथि) 11-07-2019



BILL AMOUNT :18580/-

Bill of Supply for Electricity

Sanctioned Load : 5.00 (kVA)
 Contract Demand : M D I
 Power Factor : 11.00 (kVA)
 Pole No. : 0.964
 Meter Reading Status : NGLPA001S1
 Cycle No. : DL
 Tariff Category : Non-Domestic [LT] (Up to 10 kW)

Due Date of Bill
10-08-2019

CA No. :
 Energisation Date : 11-02-2011
 Meter Type : 1PSK
 Supply Type : LT
 Bill No. : 100244892766
 Bill Basis : Actual
 O.D. No. : R/19/10129263581

Customer Care Centre No. (फ़ाई सेव केंद्र का नंबर) 39 99 97 07

Meter No. (मीटर नं.)	Unit (यूनिट)	Billed Consumption (Current) Date of Meter Reading (बिलिंग के लिए मीटर की तारीख)	Reading (रीडिंग)	Billed Consumption (Previous) Date of Meter Reading (पिछला बिलिंग के लिए मीटर की तारीख)	Reading (रीडिंग)	Multiplication Factor (गुणांक)	Current Consumption (Meter Reading) Days (मीटर की रीडिंग) Days (दिन)	Unit (यूनिट)
40916963	kWh	22-07-2019	7514.00	22-06-2019	6490.00	1.00	30	1024.00
40916963	kW	22-07-2019	5.68	22-06-2019	5.68	1.00	30	5.68
40916963	kVAh	22-07-2019	10896.00	22-06-2019	9823.00	1.00	30	1073.00
40916963	kVA	22-07-2019	10.24	22-06-2019	10.24	1.00	30	10.24

Billing Details (बिल का विवरण)

Current Period Charges (वर्तमान अवधि का शुल्क) (23-06-2019 to 22-07-2019)

Fixed Charge "A" (स्थायी शुल्क)	Consumption Measured During (पढ़ा गया वर्तमान अवधि का)	Energy Units Consumed / Billed (एनर्जी यूनिट्स / बिलिंग के लिए)	Slabwise Energy Charge (स्लाब-वाइज एनर्जी चार्ज)	Slabwise Power Purchase Adjustment Charge (स्लाब-वाइज पावर पर्सचार्ज)	Time of Day (TOD) Charge (टाइम ऑफ द डे चार्ज)	100 Surcharge (100% सूरचार्ज)	Penalty (पेनल्टी)	Total Amount (A+B+C+D+E+F+G+H) (कुल राशि)
2084.34 (0.96 kVA)		1073.00	8.00	8584.00	4.50	386.28		13598.83

Adopt e-bill. Save trees. Provide email details to us through web/call/email.

Penalty (पेनल्टी)	Penalty (पेनल्टी)	Penalty (पेनल्टी)	Penalty (पेनल्टी)	Penalty (पेनल्टी)	Penalty (पेनल्टी)	Penalty (पेनल्टी)	Penalty (पेनल्टी)	Penalty (पेनल्टी)
426.22								

Past Dues / Refunds / Subsidy (पिछला बकाया/वापसी/सब्सिडी)

Arrears / Refunds (बकाया/वापसी)	Late Payment Surcharge (LPSC) (लैट पैमेंट सूरचार्ज)	Other Charges, If any (अन्य चार्ज, यदि हो तो)	Total Charges Payable (कुल देय शुल्क)	Rebate / Subsidy (रिबेट/सब्सिडी)	Net Amount Payable (कुल देय राशि)
	54.04	4938.78	18581.45		18581.45

Bill Amount Payable (बिल देय राशि)

₹ 18580.00

Due Date of Payment (भुगतान देय तिथि) 10-08-2019

**BILL AMOUNT :11810/-**

BSES

BSES Rajdhani
"Your bill is released in Read remaining that dues are pending. Please clear the pending Energy / Enforcement dues immediately to avoid disconnection leading to possible inconvenience"

Due Date (देय तिथि):
11-09-2019

Bill of Supply for Electricity

Name :
Billing Address :
Mobile / Tel. No. :
Email ID :
District / Division :
Walking Sequence :
Bill Month :
Bill Date :
Nangloi
VAL030088A1AA
AUG-19
23-08-2019

Sanctioned Load : 5.00 (kVA)
Contract Demand :
M D I : 8.00 (kVA)
Power Factor : 0.979
Pole No. : NGLPA001S1
Meter Reading Status : DL
Cycle No. : 11
Tariff Category : Non-Domestic [LT] (Up to 10 kW)

CA No.
Energisation Date : 11-02-2011
Meter Type : 1PSK
Supply Type : LT
Bill No. : 100125164189
Bill Basis : Actual
O.D. No. : R/19/10131961220

Customer Care Centre No. (ग्राहक सेवा केंद्र का नंबर) 39 99 97 07

Meter No. (मीटर सं.)	Unit (यूनिट)	Billed Consumption (Current) Date of Meter Reading (मीटर रीडिंग की तिथि)	Reading (रीडिंग)	Billed Consumption (Previous) Date of Meter Reading (मीटर रीडिंग की तिथि)	Reading (रीडिंग)	Multiplication Factor (गुणांक)	Days (दिन)	Unit (यूनिट)
40916963	kWh	22-08-2019	8425.00	22-07-2019	7514.00	1.00	31	911.00
40916963	kW	22-08-2019	5.99	22-07-2019		1.00		5.99
40916963	kVAh	22-08-2019	11827.00	22-07-2019	10896.00	1.00	31	931.00
40916963	kVA	22-08-2019	7.13	22-07-2019		1.00		7.13

Billing Details (बिल का विवरण)

Current Period Charges (वर्तमान अवधि का शुल्क) (23-07-2019 to 22-08-2019)

Adopt e-bill. Save trees. Provide email details to us through website/call/email.

Fixed Charge="A" ₹ (स्थायी शुल्क)	Consumption Measured During (वर्षा अवधि माप)	Energy Units Consumed / Billed (एनर्जी / बिल में)	Slabwise Energy Charge (स्लेब आधारित विद्युत शुल्क)	Slabwise Power Purchase Adjustment Charge (स्लेब आधारित विद्युत शक्ति खरीद शुल्क)	Time of Day (TOD) Charge दिवस और रात के टैरिफ की शुल्क	Surcharge @ 1% on Energy Charge + Fixed Charge. Rebate = "F" (विद्युत शुल्क + स्थायी शुल्क पर 1% सurchance। छूट = "F")	Electricity Tax @ 1% on Energy Charge. Surcharge on Energy Charge. PPAC amount + TOD Surcharge Rebate amount = "H" (विद्युत शुल्क पर 1% टैक्स। सurchance on Energy Charge. PPAC amount + TOD Surcharge Rebate amount = "H")	Total Amount (B = A+B+C+D+E+ F+G+H) (कुल राशि)	
2000.01 1.00 MWh/s)		270.00	8.00	2160.00	4.50	97.20	782.28	437.54	11809.95
PPAC on Fixed Charge = "G" ₹ (स्थायी शुल्क पर पीपीएसी)		270.00	8.50	2295.00	4.50	103.28			
		391.00	8.50	3323.50	4.50	149.56			
90.00							371.56		
Total Units = 931		Total (B) = 7778.50		Total (C) = 350.04		Total (D) =			

Past Dues / Refunds / Subsidy

पिछला बकाया / वापसी / सब्सिडी Consumer registered under GST may submit it's GSTIN at concerned division

Arrears / Refunds (बकाया / वापसी)	Period to which it relates (वर्षा अवधि से संबंध है)	Late Payment Surcharge (LPSC) (देरी से भुगतान पर जुर्माना)	Other Charges, if any (अन्य शुल्क, यदि हो तो)	Total Charges Payable (कुल देय शुल्क)	Rebate / Subsidy* (छूट / सब्सिडी)	Net Amount Payable (कुल देय राशि)
Amount (राशि)		166.97	4725.00	30729.33		30729.33
14027.41	Since JUN-19					

Amount not immediately payable, if any. (राशि जो तुरंत देय नहीं है, यदि हो तो)

Reasons (कारण)

Service line cum Development Charges paid (सुरक्षा लाइन क्यूम डेवलपमेंट शुल्क)	₹3000.00	Security Deposit with DISCOM (सुरक्षा की राशि जमा शुल्क राशि)	₹6000.00
Interest accrued for FY2018-19 (अनुमानित ब्याज FY2018-19)	already adjusted in bill No.		₹(489.00)
101623542072 (generated for the period 26-03-2019 to 22-04-2019)			

**Bill Amount Payable
(बिल देय राशि)**
₹ 30730.00

Due Date of Payment

Scan & Pay
QR

RED

TRINITY ENERGY SYSTEMS PVT. LTD.
386, Savli – GIDC Estate, Manjusar – 391775, Dist. VADODARA

Gujarat, INDIA. Telephone No. +91 – 9228004452/53/54
Email: info@trinityenergy.co.in, Web: www.trinityenergy.co.in



CONCLUSION

Energy Bill of July 2019 - BEFORE LLPFC INSTALLATION

KWH Units :1193
KVAH Units :1576
SANCTIONED LOAD : 4 KVA
MDI :13 KVA
PF : 0.75
BILL AMOUNT :20000/-

Energy Bill of AUG 2019 - AFTER LLPFC INSTALLATION

KWH Units :1024
KVAH Units :1073
SANCTIONED LOAD : 5 KVA
MDI :11 KVA
PF : 0.945
BILL AMOUNT :18580/-

Energy Bill of SEP 2019 - AFTER LLPFC INSTALLATION

KWH Units :911
KVAH Units :931
SANCTIONED LOAD : 5 KVA
MDI :8 KVA
PF : 0.98
BILL AMOUNT :11810/-

- Their Average PF achieved to 0.98 LG and further improving
- KVAH consumption reduced drastically as PF is improved.
- Maximum Demand Reduced to 8 KVA
- Their Energy Consumption reduced up to 40%. (from 20K to 12K)
- Their monthly Electricity Bill amount reduced to 12000/- from 20000/-
- Since LLPFC is made of specialized electronic relay cards for Switching , the life of the panel itself is very high giving good ROI to customer.
- LLPFC displays both KWH and KVAH in real time in Panel display , hence user can get to know the readings in real time.
- LLPFC is also equipped with RS485 communication port for Remote monitoring through GPRS modem
- Simultaneous display of Avg Volts , Current(amps) , KWH , KVAH , C-KVAR, Need KVAR