

**EFFECT OF CAPACITORS
IN AGRICULTURE SEGMENT
IN
REDUCTION OF TECHNICAL LOSS
BY THE WAY OF
VAR COMPENSATION**

AIM:

To reduce the technical loss in Agricultural segment by the way of VAR compensation.

PILOT STUDY:

Provision of capacitor at Agriculture segment was sanctioned for the selected feeders in Erode region.

Feeders selected for the study:

| Name of circle | Name of substation | Name of feeder |
|----------------|--------------------------|---------------------------|
| Erode | Nadupalayam 110/22-11 KV | Punjai Kalamangalam 22 KV |
| Gobi | Kugalur 110/22-11 KV | Athani 22 KV |
| Mettur | Poolampatty 110/22 KV | Poolampatty 22 KV |
| Namakkal | Velur 110/11 KV | Suriyampalayam 11 KV |
| Salem | Karuppur 110/22 KV | Sengaradu 22 KV |

Procurement of Capacitors:

Procurement of capacitors have been done through e-tendering for the amount of Rs 28.68 Lakhs for the above feeders.

COMPLETION OF WORK:

Provision of capacitors in all agricultural services was completed in Poolampatty 22 KV feeder of Poolampatty SS in Mettur EDC from 13.07.2018 to 13.08.2018.

Number of services Capacitor provided :

| 3 HP | 5HP | 7.5 HP | 10 HP | Total |
|------|-----|--------|-------|-------|
| 44 | 517 | 240 | 77 | 878 |

Ratings of Capacitors Provided

| 1 KVAR | 2 KVAR | 3 KVAR | 4 KVAR | Total |
|--------|--------|--------|--------|-------|
| 44 | 517 | 240 | 77 | 878 |

Total amount invested:

| 1 KVAR | 2 KVAR | 3 KVAR | 4 KVAR | Total |
|----------------------------|-------------------------------|-------------------------------|----------------------------|--------------------|
| 44xRs 415.36= Rs 18,276 | 517xRs 519.20 =Rs 2,68,426 | 240xRs 654.90 =Rs 1,57,176 | 77xRs 848.42 =Rs 65,328 | Rs 5,09,206 |

Date war installation of Capacitors

Capacitor provided in Poolampatty 22 KV feeder

| Date of commissioned | 1 KVAR | 2KVAR | 3 KVAR | 4 KVAR | Total |
|----------------------|-----------|------------|------------|-----------|------------|
| 13-Jul-18 | | 13 | | | 13 |
| 16-Jul-18 | | 9 | | 1 | 10 |
| 17-Jul-18 | 3 | 19 | | | 22 |
| 19-Jul-18 | 9 | 24 | 11 | | 44 |
| 20-Jul-18 | | 23 | 14 | | 37 |
| 21-Jul-18 | | 22 | 5 | 11 | 38 |
| 23-Jul-18 | | 27 | 9 | 6 | 42 |
| 24-Jul-18 | 7 | 25 | 12 | | 44 |
| 25-Jul-18 | | 30 | 16 | 12 | 58 |
| 26-Jul-18 | | 35 | 7 | 1 | 43 |
| 27-Jul-18 | 3 | 35 | 12 | 12 | 62 |
| 01-Aug-18 | | 34 | 9 | | 43 |
| 02-Aug-18 | | 25 | 5 | 7 | 37 |
| 03-Aug-18 | 2 | 28 | 30 | 5 | 65 |
| 06-Aug-18 | | 27 | 22 | | 49 |
| 07-Aug-18 | | 35 | 19 | | 54 |
| 08-Aug-18 | 5 | 27 | 29 | | 61 |
| 09-Aug-18 | | 25 | 20 | | 45 |
| 10-Aug-18 | 7 | 14 | 10 | 6 | 37 |
| 11-Aug-18 | 8 | 12 | 10 | 9 | 39 |
| 13-Aug-18 | | 28 | | 7 | 35 |
| Total | 44 | 517 | 240 | 77 | 878 |
| TOTAL KVAR | 44x1=44 | 517X2=1034 | 240X3=720 | 77X4=308 | 2106 |

STUDY REPORT

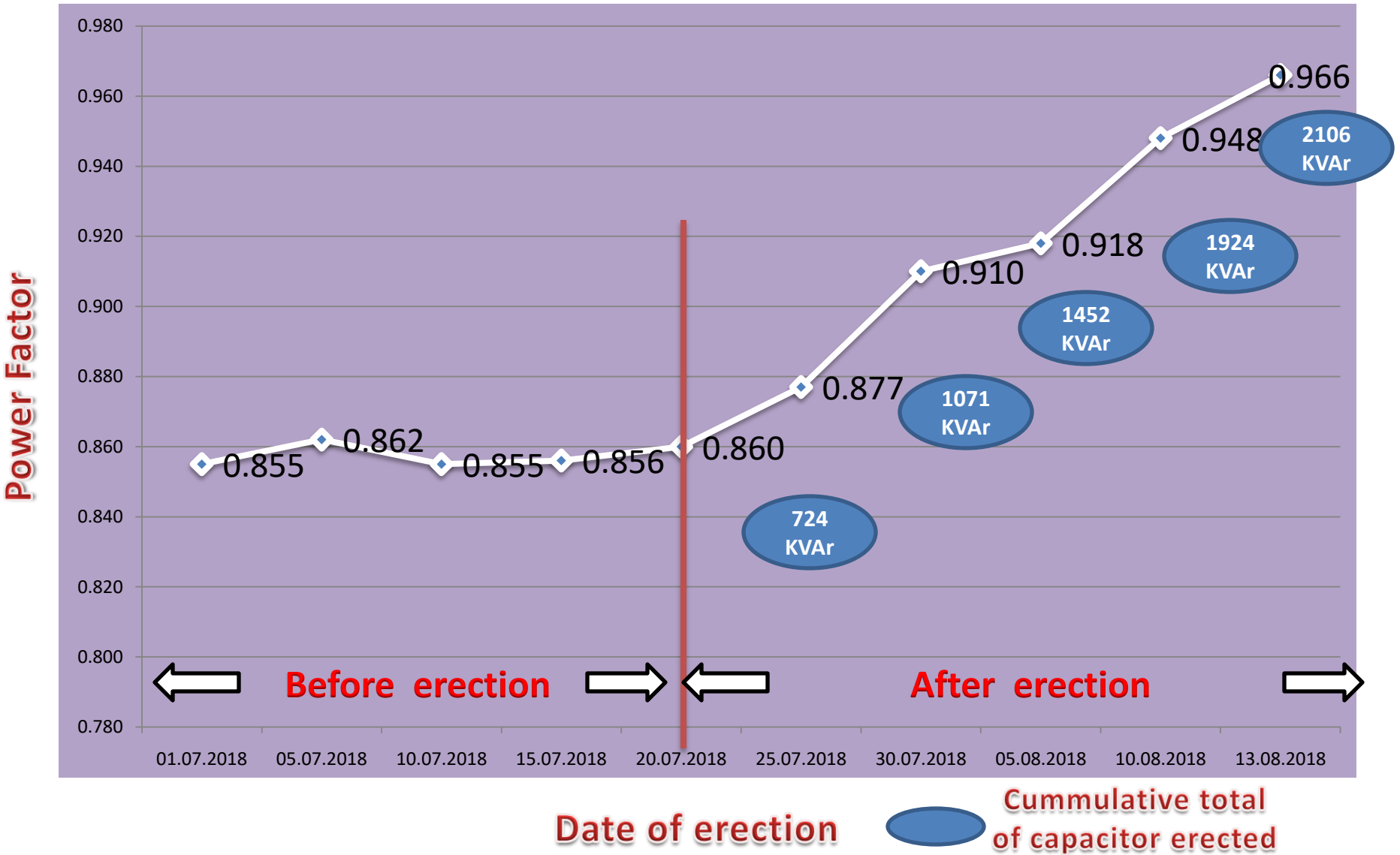
The pre and post data of the study emerge the following results.

- 1. The quantum of reduction in Amp/kW and allied line loss is around 13% and can be conservatively concluded more than 10%.**
- 2. The reduction in Kvar pumped from the Generation station, flowed through the upstream Grid making loss all the way and finally confluenced in to the Poolampatti feeder AND the reduction in overall kVA are proportionate to the reduction in feeder current.**
- 3. The power factor during the one month of installation gradually improved from 0.85 to 0.96, as the installation progressed day by day.**
- 4. Improvement and stability in voltage profile was evident both in HT and downstream , post the event.**

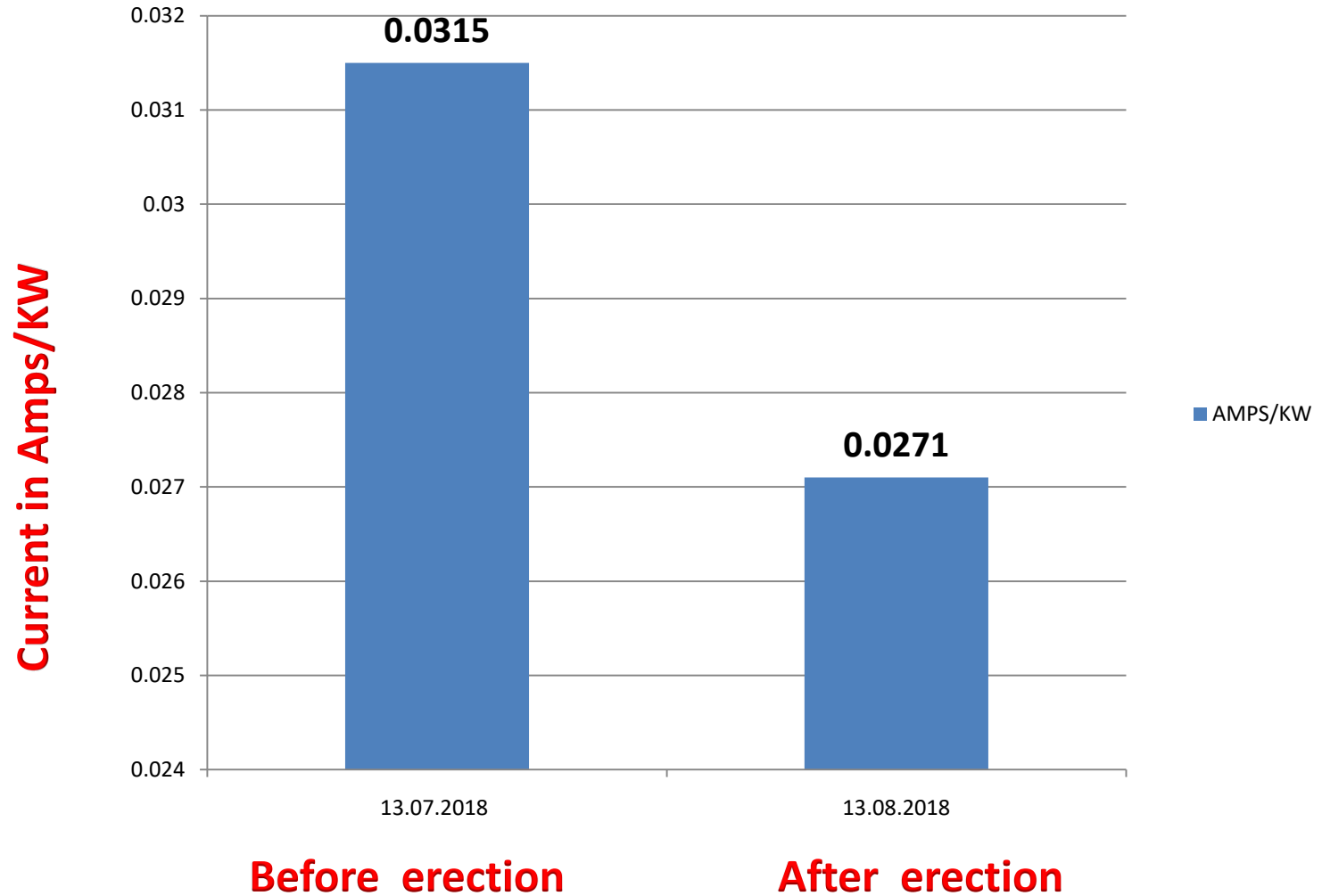
1. Power factor Improvement before and after capacitor erection:

| Readings taken through CMRI | | |
|-----------------------------|------------|------------------------------|
| Date | Average PF | Remarks |
| 01.07.2018 | 0.855 | Before erection of capacitor |
| 05.07.2018 | 0.862 | |
| 10.07.2018 | 0.855 | |
| 15.07.2018 | 0.856 | |
| 20.07.2018 | 0.860 | After erection of capacitor |
| 25.07.2018 | 0.877 | |
| 30.07.2018 | 0.910 | |
| 05.08.2018 | 0.918 | |
| 10.08.2018 | 0.948 | |
| 13.08.2018 | 0.966 | |

Power factor Before and after capacitor erection



Reduction of Amps/kW



3.Units savings in HT (Amps/kW)

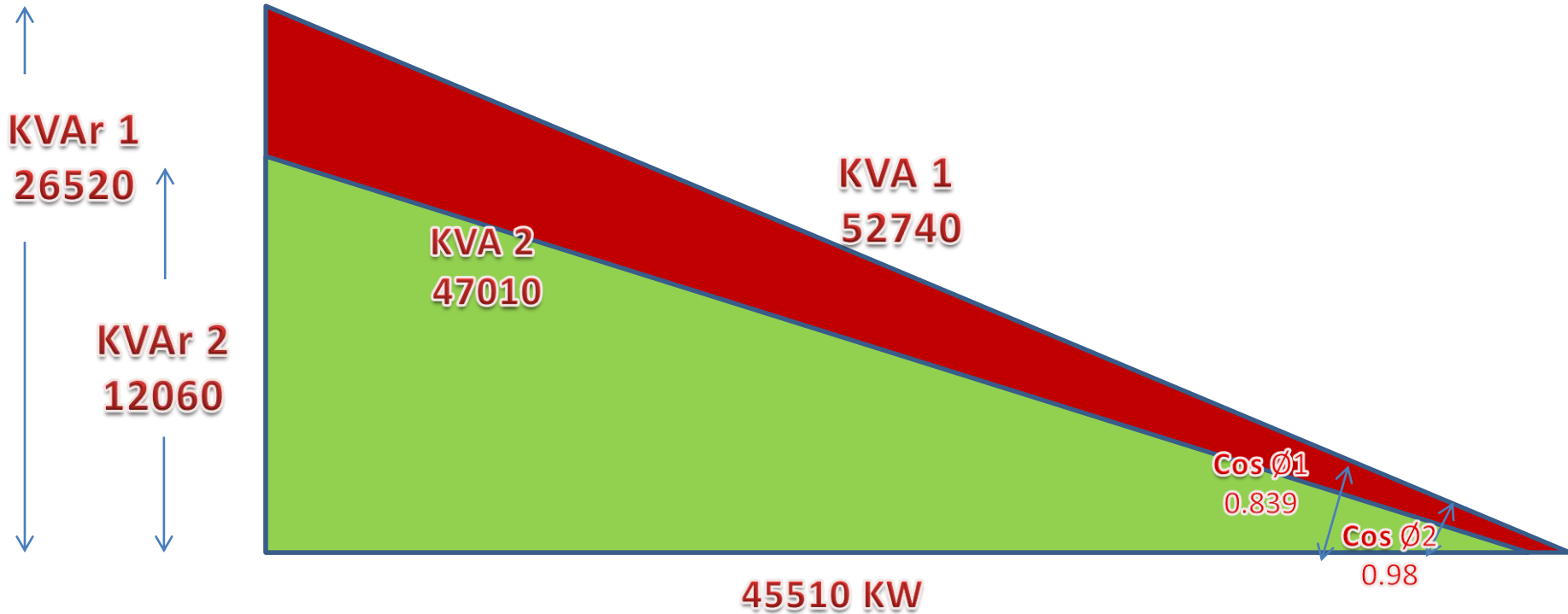
| Date | Amps | Kw | Amps/Kw |
|--|-------|---------|---------|
| 13.07.2018 (Before erection of Capacitor) | 55.69 | 1768.13 | 0.0315 |
| 13.08.2018(After erection of Capacitor) | 50.44 | 1859.38 | 0.0271 |

$$\begin{aligned} \text{Percentage of reduction of Amps/kW} &= \frac{0.0315-0.0271}{0.0315} \times 100 = 13.90 \\ &= 13.90 \% \end{aligned}$$

Savings with the current parameters

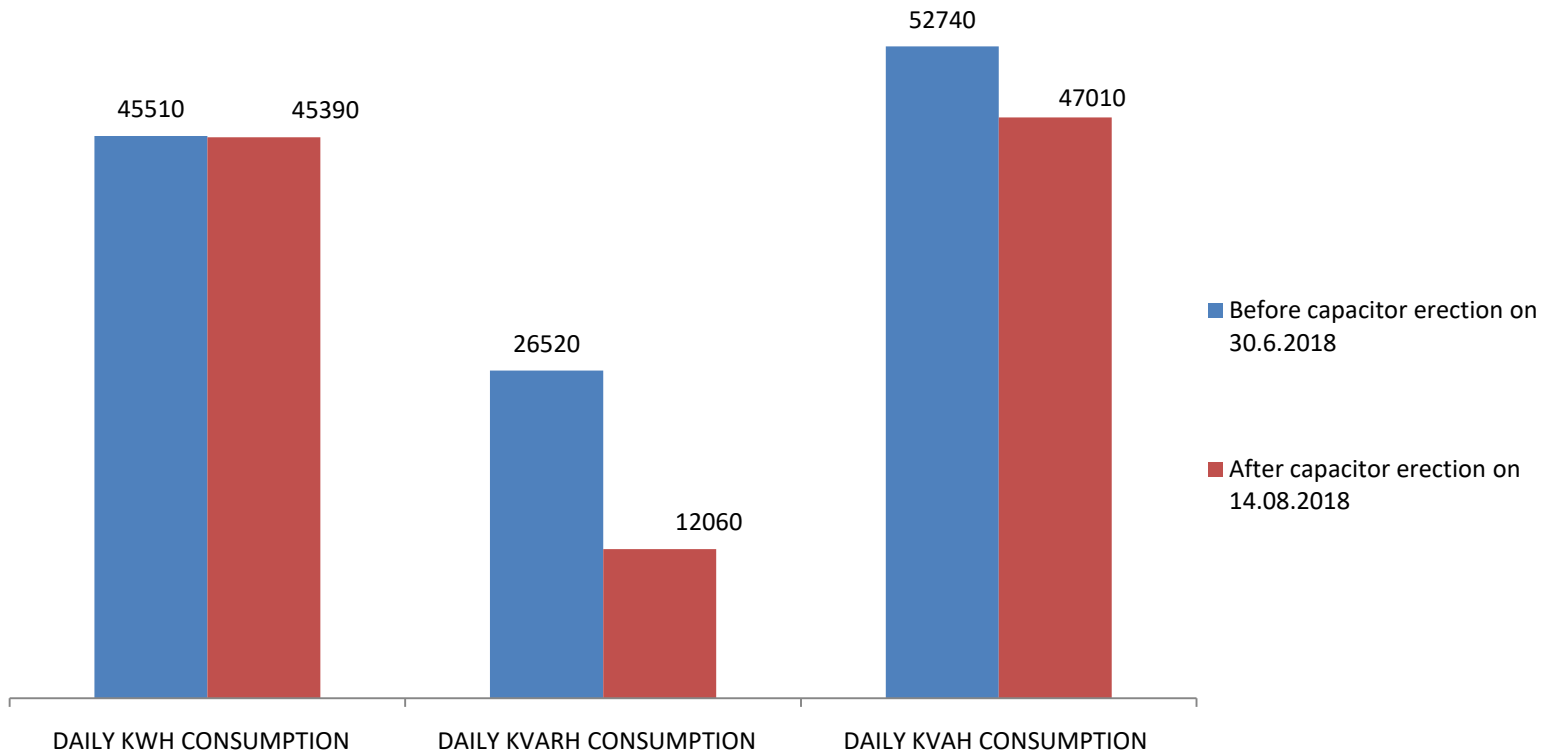
- Reduction in current at max load =10 A
- Reduction in current at min load =5 A
- Average =7.5 A
- Savings in units in one hour:
 $7.5A \times 22 \text{ KV} \times 1.732 \times 0.96 = 275 \text{ Units}$
- Savings in units in one year:
 $275 \text{ Units} \times 24 \text{ Hours} \times 365 \text{ days} = 24,09,000 \text{ Units}$
- Savings in money value :
 $24,09,000 \text{ units} \times \text{Rs}5.00 = \text{Rs } 1,20,45,000$

Vector Diagram

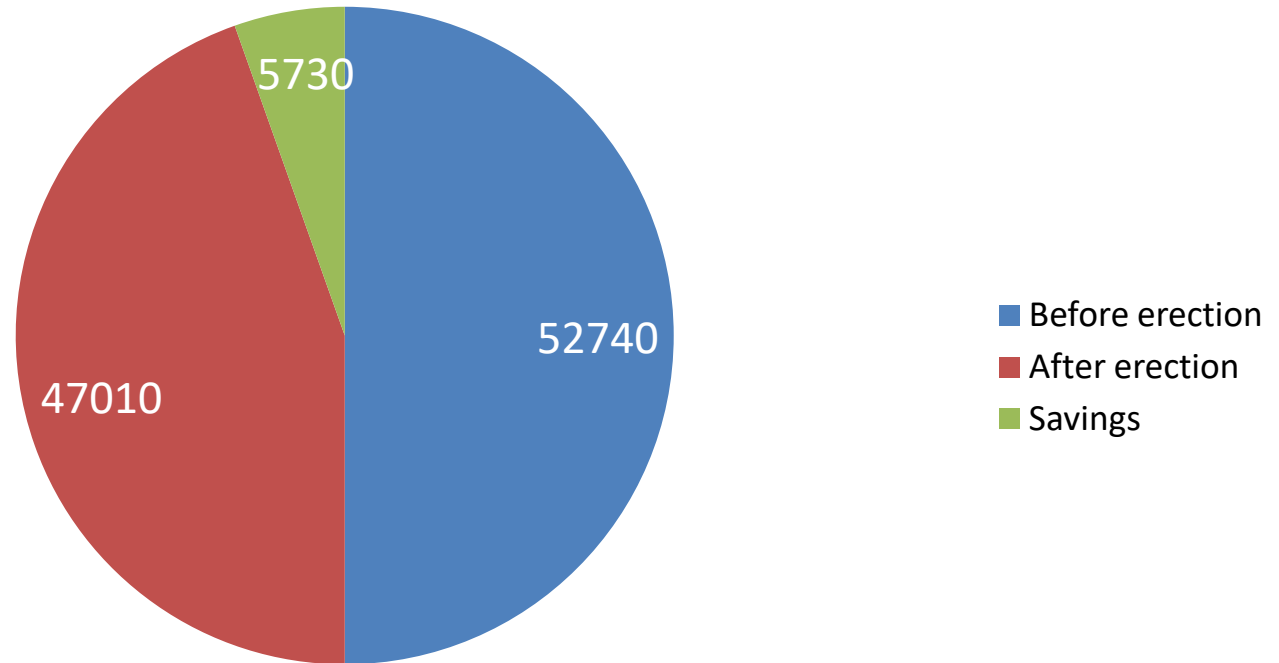


| PARAMETERS | DAILY KWH CONSUMPTION | DAILY KVARH CONSUMPTION | DAILY KVAH CONSUMPTION | PF |
|--------------------------------|-----------------------|-------------------------|------------------------|-------|
| Before erection (30.6.2018) | 45510 | 26520 | 52740 | 0.839 |
| After Erection (14.08.2018) | 45390 | 12060 | 47010 | 0.98 |

| PARAMETERS | DAILY KWH CONSUMPTION | DAILY KVARH CONSUMPTION | DAILY KVAH CONSUMPTION |
|-----------------------------|-----------------------|-------------------------|------------------------|
| Before erection (30.6.2018) | 45510 | 26520 | 52740 |
| After Erection (14.08.2018) | 45390 | 12060 | 47010 |

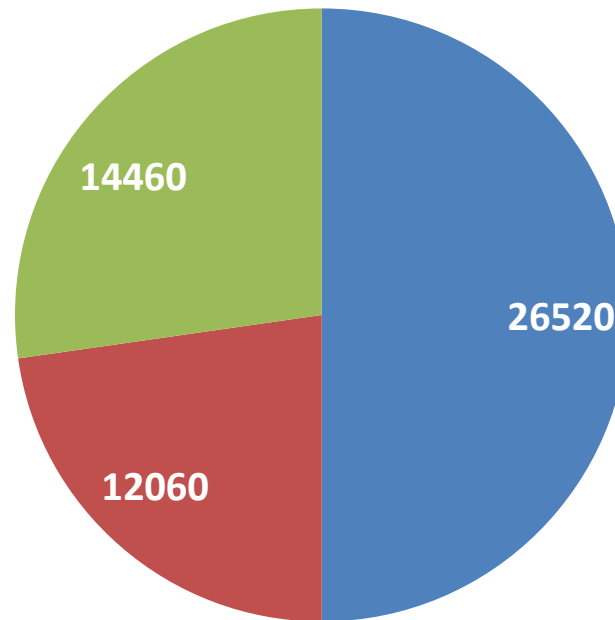


DAILY KVAH CONSUMPTION



| DAILY KVAH CONSUMPTION | |
|------------------------|--------|
| Before erection | 52740 |
| After erection | 47010 |
| Savings | 5730 |
| Savings in % | 10.86% |

DAILY KVARH CONSUMPTION



- Before erection
- After erection
- Savings

| DAILY KVARH CONSUMPTION | |
|-------------------------|--------|
| Before erection | 26520 |
| After erection | 12060 |
| Savings | 14460 |
| Savings in % | 54.52% |

Data showing improved capability of additional KWh for the same installation capacity

| Date | KWH READING | DAILY KWH CONSUMPTION (WITH MF 600) | HOURLY KWH CONSUMPTION | KVARH READING | DAILY KVARH CONSUMPTION (WITH MF 600) | HOURLY KVARH CONSUMPTION | KVAH READING | DAILY KVAH CONSUMPTION (WITH MF 600) | HOURLY KVAH CONSUMPTION | PF |
|---------------------------|-------------|-------------------------------------|------------------------|---------------|---------------------------------------|--------------------------|--------------|--------------------------------------|-------------------------|-----------|
| Before capacitor erection | | | | | | | | | | |
| 27.6.18 | 1047.85 | 37260 | 1552.5 | 616.55 | 21780 | 907.5 | 1216.25 | 43200 | 1800 | 0.8625 |
| 28.6.18 | 1109.95 | 64350 | 2681.25 | 652.85 | 37710 | 1571.25 | 1288.25 | 74610 | 3108.75 | 0.8624849 |
| 29.6.18 | 1217.2 | 66960 | 2790 | 715.7 | 39810 | 1658.75 | 1412.6 | 77880 | 3245 | 0.8597843 |
| | 3375 | 168570 | 7023.75 | 1985.1 | 99300 | 4137.5 | 3917.1 | 195690 | 8153.75 | 2.5847692 |
| After capacitor erection | | | | | | | | | | |
| 14.8.18 | 5464.85 | 45390 | 1891.25 | 2948.6 | 12060 | 502.5 | 6228.9 | 47010 | 1958.75 | 0.9655392 |
| 15.8.18 | 5540.5 | 46680 | 1945 | 2968.7 | 12330 | 513.75 | 6307.25 | 48300 | 2012.5 | 0.9664596 |
| 16.8.18 | 5618.3 | 47640 | 1985 | 2989.25 | 11760 | 490 | 6387.75 | 49110 | 2046.25 | 0.9700672 |
| 17.8.18 | 5697.7 | 49650 | 2068.75 | 3008.85 | 12450 | 518.75 | 6469.6 | 51180 | 2132.5 | 0.9701055 |
| | | 189360 | 7890 | 11915.4 | 48600 | 2025 | 25393.5 | 195600 | 8150 | 3.8721716 |

IRR

| | | | | |
|----|--|---------------|-----------------|----------------------------|
| 1. | KWh after erection of capacitor for the same KVAh | | 189360 | |
| 2. | KWh Before erection of capacitor for the same KVAh | | 168570 | |
| 3. | Additional KWh for 3 days | | 20790 | |
| 4. | KWh savings per day | 20790/3 days | 6930 | |
| 5. | Savings interms of value/Month | 6930X RS 5.00 | 34650 | |
| 6. | Savings in terms of value/Year | | 12647250 | = 1.26 Crores/ year |
| 7. | Investment made | | 509206 | |
| 8. | Return on investment with in a month | | | |

Note: For the same 1,95,690 KVA the quantum of KWh has increased from 168570 to 189360. i.e 11 % increased.

Before capacitor Installation

| 22 KV Poolampatty feeder data before and after capacitor installation | | | | | | | | | | |
|---|-------------|-------------------------------------|------------------------|---------------|---------------------------------------|--------------------------|--------------|--------------------------------------|-------------------------|----------|
| Date | KWH READING | DAILY KWH CONSUMPTION (WITH MF 600) | HOURLY KWH CONSUMPTION | KVARH READING | DAILY KVARH CONSUMPTION (WITH MF 600) | HOURLY KVARH CONSUMPTION | KVAH READING | DAILY KVAH CONSUMPTION (WITH MF 600) | HOURLY KVAH CONSUMPTION | PF |
| 18-06-2018 | 122 | 48810 | 2033.75 | 74.95 | 29310 | 1221.25 | 143.3 | 56940 | 2372.5 | 0.857218 |
| 19-06-2018 | 203.35 | 53220 | 2217.5 | 123.8 | 31290 | 1303.75 | 238.2 | 61770 | 2573.75 | 0.861583 |
| 20-06-2018 | 292.05 | 62700 | 2612.5 | 175.95 | 37260 | 1552.5 | 341.15 | 72960 | 3040 | 0.859375 |
| 21-06-2018 | 396.55 | 66060 | 2752.5 | 238.05 | 38070 | 1586.25 | 462.75 | 76260 | 3177.5 | 0.866247 |
| 22-06-2018 | 506.65 | 67710 | 2821.25 | 301.5 | 39360 | 1640 | 589.85 | 78360 | 3265 | 0.864089 |
| 23-06-2018 | 619.5 | 64530 | 2688.75 | 367.1 | 37350 | 1556.25 | 720.45 | 74580 | 3107.5 | 0.865245 |
| 24-06-2018 | 727.05 | 66090 | 2753.75 | 429.35 | 38400 | 1600 | 844.75 | 76440 | 3185 | 0.8646 |
| 25-06-2018 | 837.2 | 60210 | 2508.75 | 493.35 | 35190 | 1466.25 | 972.15 | 69780 | 2907.5 | 0.862855 |
| 26-06-2018 | 937.55 | 66180 | 2757.5 | 552 | 38730 | 1613.75 | 1088.45 | 76680 | 3195 | 0.863067 |
| 27-06-2018 | 1047.85 | 37260 | 1552.5 | 616.55 | 21780 | 907.5 | 1216.25 | 43200 | 1800 | 0.8625 |
| 28-06-2018 | 1109.95 | 64350 | 2681.25 | 652.85 | 37710 | 1571.25 | 1288.25 | 74610 | 3108.75 | 0.862485 |
| 29-06-2018 | 1217.2 | 66960 | 2790 | 715.7 | 39810 | 1658.75 | 1412.6 | 77880 | 3245 | 0.859784 |
| 30-06-2018 | 1328.8 | 45510 | 1896.25 | 782.05 | 26520 | 1105 | 1542.4 | 52740 | 2197.5 | 0.862912 |
| 01-07-2018 | 1404.65 | 52140 | 2172.5 | 826.25 | 31440 | 1310 | 1630.3 | 60900 | 2537.5 | 0.856158 |
| 02-07-2018 | 1491.55 | 32400 | 1350 | 878.65 | 19590 | 816.25 | 1731.8 | 37860 | 1577.5 | 0.855784 |
| 03-07-2018 | 1545.55 | 31680 | 1320 | 911.3 | 19680 | 820 | 1794.9 | 37320 | 1555 | 0.848875 |
| 04-07-2018 | 1598.35 | 46830 | 1951.25 | 944.1 | 27870 | 1161.25 | 1857.1 | 54510 | 2271.25 | 0.859108 |
| 05-07-2018 | 1676.4 | 57060 | 2377.5 | 990.55 | 33360 | 1390 | 1947.95 | 66120 | 2755 | 0.862976 |
| 06-07-2018 | 1771.5 | 63690 | 2653.75 | 1046.15 | 36690 | 1528.75 | 2058.15 | 73500 | 3062.5 | 0.866531 |
| 07-07-2018 | 1877.65 | 67050 | 2793.75 | 1107.3 | 40620 | 1692.5 | 2180.65 | 78420 | 3267.5 | 0.855011 |
| 08-07-2018 | 1989.4 | 66030 | 2751.25 | 1175 | 41730 | 1738.75 | 2311.35 | 78120 | 3255 | 0.845238 |
| 09-07-2018 | 2099.45 | 54930 | 2288.75 | 1244.55 | 35430 | 1476.25 | 2441.55 | 65400 | 2725 | 0.839908 |
| 10-07-2018 | 2191 | 46080 | 1920 | 1303.6 | 30180 | 1257.5 | 2550.55 | 55110 | 2296.25 | 0.836146 |
| 11-07-2018 | 2267.8 | 32460 | 1352.5 | 1353.9 | 21210 | 883.75 | 2642.4 | 38790 | 1616.25 | 0.836814 |
| 12-07-2018 | 2321.9 | 33450 | 1393.75 | 1389.25 | 21660 | 902.5 | 2707.05 | 39870 | 1661.25 | 0.838977 |

After capacitor installation

| | | | | | | | | | | |
|------------|---------|-------|---------|---------|-------|---------|---------|-------|---------|----------|
| 13-07-2018 | 2377.65 | 42420 | 1767.5 | 1425.35 | 25530 | 1063.75 | 2773.5 | 49530 | 2063.75 | 0.856451 |
| 14-07-2018 | 2448.35 | 48600 | 2025 | 1467.9 | 28980 | 1207.5 | 2856.05 | 56610 | 2358.75 | 0.858506 |
| 15-07-2018 | 2529.35 | 58170 | 2423.75 | 1516.2 | 35250 | 1468.75 | 2950.4 | 68010 | 2833.75 | 0.855315 |
| 16-07-2018 | 2626.3 | 60750 | 2531.25 | 1574.95 | 36810 | 1533.75 | 3063.75 | 71070 | 2961.25 | 0.854791 |
| 17-07-2018 | 2727.55 | 67620 | 2817.5 | 1636.3 | 40320 | 1680 | 3182.2 | 78750 | 3281.25 | 0.858667 |
| 18-07-2018 | 2840.25 | 43290 | 1803.75 | 1703.5 | 25920 | 1080 | 3313.45 | 50460 | 2102.5 | 0.857907 |
| 19-07-2018 | 2912.4 | 72480 | 3020 | 1746.7 | 42930 | 1788.75 | 3397.55 | 84270 | 3511.25 | 0.860093 |
| 20-07-2018 | 3033.2 | 70950 | 2956.25 | 1818.25 | 42420 | 1767.5 | 3538 | 82680 | 3445 | 0.858128 |
| 21-07-2018 | 3151.45 | 73410 | 3058.75 | 1888.95 | 45120 | 1880 | 3675.8 | 86190 | 3591.25 | 0.851723 |
| 22-07-2018 | 3273.8 | 71040 | 2960 | 1964.15 | 42750 | 1781.25 | 3819.45 | 82950 | 3456.25 | 0.85642 |
| 23-07-2018 | 3392.2 | 69570 | 2898.75 | 2035.4 | 41040 | 1710 | 3957.7 | 80790 | 3366.25 | 0.861121 |
| 24-07-2018 | 3508.15 | 66030 | 2751.25 | 2103.8 | 37020 | 1542.5 | 4092.35 | 75720 | 3155 | 0.872029 |
| 25-07-2018 | 3618.2 | 63840 | 2660 | 2165.5 | 34830 | 1451.25 | 4218.55 | 72750 | 3031.25 | 0.877526 |
| 26-07-2018 | 3724.6 | 49890 | 2078.75 | 2223.55 | 25770 | 1073.75 | 4339.8 | 56160 | 2340 | 0.888355 |
| 27-07-2018 | 3807.75 | 48060 | 2002.5 | 2266.5 | 23340 | 972.5 | 4433.4 | 53430 | 2226.25 | 0.899495 |
| 28-07-2018 | 3887.85 | 55680 | 2320 | 2305.4 | 26460 | 1102.5 | 4522.45 | 61680 | 2570 | 0.902724 |
| 29-07-2018 | 3980.65 | 60360 | 2515 | 2349.5 | 29070 | 1211.25 | 4625.25 | 67020 | 2792.5 | 0.900627 |
| 30-07-2018 | 4081.25 | 57900 | 2412.5 | 2397.95 | 26340 | 1097.5 | 4736.95 | 63630 | 2651.25 | 0.909948 |
| 31-07-2018 | 4177.75 | 53760 | 2240 | 2441.85 | 24540 | 1022.5 | 4843 | 59130 | 2463.75 | 0.909183 |
| 01-08-2018 | 4267.35 | 63840 | 2660 | 2482.75 | 29520 | 1230 | 4941.55 | 70350 | 2931.25 | 0.907463 |
| 02-08-2018 | 4373.75 | 64410 | 2683.75 | 2531.95 | 28410 | 1183.75 | 5058.8 | 70380 | 2932.5 | 0.915175 |
| 03-08-2018 | 4481.1 | 62940 | 2622.5 | 2579.3 | 28110 | 1171.25 | 5176.1 | 68940 | 2872.5 | 0.912968 |
| 04-08-2018 | 4586 | 58710 | 2446.25 | 2626.15 | 25680 | 1070 | 5291 | 64080 | 2670 | 0.916199 |
| 05-08-2018 | 4683.85 | 52260 | 2177.5 | 2668.95 | 22650 | 943.75 | 5397.8 | 56970 | 2373.75 | 0.917325 |
| 06-08-2018 | 4770.95 | 57420 | 2392.5 | 2706.7 | 23760 | 990 | 5492.75 | 62160 | 2590 | 0.923745 |
| 07-08-2018 | 4866.65 | 55020 | 2292.5 | 2746.3 | 21630 | 901.25 | 5596.35 | 59100 | 2462.5 | 0.930964 |
| 08-08-2018 | 4958.35 | 56700 | 2362.5 | 2782.35 | 22890 | 953.75 | 5694.85 | 61170 | 2548.75 | 0.926925 |
| 09-08-2018 | 5052.85 | 56280 | 2345 | 2820.5 | 21870 | 911.25 | 5796.8 | 60390 | 2516.25 | 0.931942 |
| 10-08-2018 | 5146.65 | 55860 | 2327.5 | 2856.95 | 18900 | 787.5 | 5897.45 | 59040 | 2460 | 0.946138 |
| 11-08-2018 | 5239.75 | 45420 | 1892.5 | 2888.45 | 12570 | 523.75 | 5995.85 | 47160 | 1965 | 0.963104 |
| 12-08-2018 | 5315.45 | 45030 | 1876.25 | 2909.4 | 11670 | 486.25 | 6074.45 | 46500 | 1937.5 | 0.968387 |
| 13-08-2018 | 5390.5 | 44610 | 1858.75 | 2928.85 | 11850 | 493.75 | 6151.95 | 46170 | 1923.75 | 0.966212 |
| 14-08-2018 | 5464.85 | 45390 | 1891.25 | 2948.6 | 12060 | 502.5 | 6228.9 | 47010 | 1958.75 | 0.965539 |
| 15-08-2018 | 5540.5 | 46680 | 1945 | 2968.7 | 12330 | 513.75 | 6307.25 | 48300 | 2012.5 | 0.966646 |
| 16-08-2018 | 5618.3 | 47640 | 1985 | 2989.25 | 11760 | 490 | 6387.75 | 49110 | 2046.25 | 0.970067 |
| 17-08-2018 | 5697.7 | 49650 | 2068.75 | 3008.85 | 12450 | 518.75 | 6469.6 | 51180 | 2132.5 | 0.970106 |

POOLAMPATTY FEEDER AVERAGE READING

| DATE | VOLTAGE | AVG PF | KVA | KVAr | AMPS | KW | AMP/KW |
|------------|---------|--------|---------|---------|-------|---------|--------|
| 01.07.2018 | 21.51 | 0.855 | 2537.63 | 1309.88 | 68.29 | 2172.75 | 0.0314 |
| 02.07.2018 | 21.86 | 0.847 | 1577.63 | 815.25 | 42.11 | 1349.75 | 0.0312 |
| 03.07.2018 | 21.82 | 0.847 | 1555.13 | 820.88 | 41.18 | 1319.63 | 0.0312 |
| 04.07.2018 | 21.50 | 0.858 | 2271.25 | 1161.50 | 62.11 | 1950.88 | 0.0318 |
| 05.07.2018 | 21.21 | 0.862 | 2755.25 | 1389.88 | 75.23 | 2379.00 | 0.0316 |
| 06.07.2018 | 20.63 | 0.866 | 3062.50 | 1527.88 | 84.06 | 2653.50 | 0.0317 |
| 07.07.2018 | 21.61 | 0.854 | 3266.88 | 1692.63 | 87.49 | 2793.63 | 0.0313 |
| 08.07.2018 | 21.89 | 0.844 | 3255.50 | 1739.63 | 86.01 | 2750.75 | 0.0313 |
| 09.07.2018 | 21.78 | 0.838 | 2725.75 | 1476.25 | 72.65 | 2289.88 | 0.0317 |
| 10.07.2018 | 21.83 | 0.835 | 2295.38 | 1257.13 | 60.92 | 1919.00 | 0.0317 |
| 11.07.2018 | 21.77 | 0.836 | 1616.50 | 884.25 | 42.94 | 1352.63 | 0.0317 |
| 12.07.2018 | 21.79 | 0.836 | 1661.75 | 902.00 | 44.14 | 1393.88 | 0.0317 |
| 13.07.2018 | 21.47 | 0.856 | 2063.75 | 1063.88 | 55.69 | 1768.13 | 0.0315 |
| 14.07.2018 | 21.47 | 0.857 | 2357.63 | 1208.25 | 63.62 | 2024.50 | 0.0314 |
| 15.07.2018 | 21.70 | 0.855 | 2834.38 | 1468.75 | 75.53 | 2424.25 | 0.0312 |
| 16.07.2018 | 21.53 | 0.854 | 2960.75 | 1534.00 | 81.04 | 2531.63 | 0.0320 |
| 17.07.2018 | 21.50 | 0.857 | 2960.75 | 1534.00 | 88.37 | 2531.63 | 0.0349 |
| 18.07.2018 | 21.51 | 0.904 | 3153.93 | 1619.62 | 87.82 | 2705.43 | 0.0325 |
| 19.07.2018 | 21.23 | 0.859 | 3510.88 | 1788.25 | 95.94 | 3019.75 | 0.0318 |
| 20.07.2018 | 21.30 | 0.857 | 3445.50 | 1768.50 | 93.74 | 2955.63 | 0.0317 |

POOLAMPATTY FEEDER AVERAGE READING

| DATE | VOLTAGE | AVG PF | KVA | KVAr | AMPS | KW | AMP/KW |
|------------|---------|--------|---------|---------|-------|---------|--------|
| 21.07.2018 | 21.62 | 0.851 | 3591.88 | 1879.38 | 96.11 | 3059.00 | 0.0314 |
| 22.07.2018 | 21.55 | 0.856 | 3455.63 | 1781.88 | 92.73 | 2960.25 | 0.0313 |
| 23.07.2018 | 21.31 | 0.860 | 3366.13 | 1709.75 | 91.44 | 2898.88 | 0.0315 |
| 24.07.2018 | 21.07 | 0.871 | 3155.00 | 1543.00 | 86.75 | 2750.88 | 0.0315 |
| 25.07.2018 | 21.21 | 0.877 | 3031.13 | 1450.88 | 82.79 | 2660.75 | 0.0311 |
| 26.07.2018 | 21.46 | 0.889 | 2339.75 | 1072.88 | 62.98 | 2077.13 | 0.0303 |
| 27.07.2018 | 21.32 | 0.899 | 2226.75 | 972.88 | 60.54 | 2002.38 | 0.0302 |
| 28.07.2018 | 21.34 | 0.901 | 2570.00 | 1102.88 | 69.86 | 2320.88 | 0.0301 |
| 29.07.2018 | 21.66 | 0.901 | 605.38 | 1395.69 | 74.59 | 2515.13 | 0.0297 |
| 30.07.2018 | 21.41 | 0.910 | 2651.63 | 1098.25 | 71.78 | 2412.13 | 0.0298 |
| 31.07.2018 | 21.73 | 0.910 | 2240.88 | 1022.88 | 65.69 | 2464.00 | 0.0267 |
| 01.08.2018 | 21.92 | 0.908 | 2931.00 | 1230.13 | 77.56 | 2659.50 | 0.0292 |
| 02.08.2018 | 21.81 | 0.915 | 2933.13 | 1182.63 | 77.56 | 2683.25 | 0.0289 |
| 03.08.2018 | 22.16 | 0.913 | 2872.88 | 1171.88 | 74.81 | 2622.38 | 0.0285 |
| 04.08.2018 | 22.07 | 0.916 | 2669.50 | 1069.25 | 71.31 | 2445.63 | 0.0292 |
| 05.08.2018 | 22.11 | 0.918 | 2373.50 | 944.38 | 62.06 | 2178.13 | 0.0285 |
| 06.08.2018 | 21.69 | 0.923 | 2589.75 | 989.50 | 69.00 | 2392.88 | 0.0288 |
| 07.08.2018 | 21.62 | 0.930 | 2463.50 | 900.88 | 65.88 | 2292.13 | 0.0287 |
| 08.08.2018 | 22.04 | 0.929 | 2549.00 | 954.75 | 67.38 | 2362.63 | 0.0285 |
| 09.08.2018 | 21.76 | 0.933 | 2515.88 | 910.25 | 66.75 | 2345.75 | 0.0285 |
| 10.08.2018 | 21.55 | 0.948 | 2459.38 | 787.88 | 66.50 | 2328.63 | 0.0286 |
| 11.08.2018 | 21.93 | 0.964 | 1979.63 | 538.75 | 52.00 | 2328.63 | 0.0223 |
| 12.08.2018 | 22.09 | 0.967 | 1938.38 | 486.38 | 50.69 | 2328.63 | 0.0218 |
| 13.08.2018 | 22.06 | 0.966 | 1924.38 | 493.75 | 50.44 | 1859.38 | 0.0271 |

5.Study at LT services side

| SL NO | DATE | SC NO | CAPACITOR RATING IN KVAR | AMPS/KW (Before errection) | AMPS/KW (After errection) | Reduction in AMPS |
|-------|------------|-------|--------------------------|-----------------------------|----------------------------|-------------------|
| 1 | 19.07.2018 | 83 | 2 | 5.53 | 5.13 | 7.84% |
| 2 | 19.07.2018 | 61 | 2 | 5.00 | 4.41 | 10.68% |
| 3 | 19.07.2018 | 4 | 3 | 5.49 | 5.00 | 8.51% |
| 4 | 19.07.2018 | 296 | 3 | 7.41 | 5.22 | 27.69% |
| 5 | 20.07.2018 | 455 | 3 | 5.57 | 4.79 | 12.61% |
| 6 | 20.07.2018 | 567 | 2 | 5.56 | 4.84 | 11.92% |
| 7 | 20.07.2018 | 470 | 3 | 5.34 | 4.48 | 17.92% |
| 8 | 20.07.2018 | 443 | 3 | 5.20 | 4.42 | 13.54% |
| 9 | 21.07.2018 | 285 | 4 | 5.34 | 5.17 | 1.32% |
| 10 | 23.07.2018 | 184 | 2 | 5.77 | 4.74 | 15.59% |

5.Study at LT services side

| SL NO | DATE | SC NO | CAPACITOR RATING IN KVAR | AMPS/KW (Before errection) | AMPS/KW (After errection) | Reduction in AMPS |
|-------|------------|-------|--------------------------|-----------------------------|----------------------------|-------------------|
| 11 | 23.07.2018 | 576 | 4 | 5.13 | 4.11 | 15.00% |
| 12 | 24.07.2018 | 295 | 2 | 5.69 | 4.73 | 16.42% |
| 13 | 24.07.2018 | 359 | 2 | 5.13 | 4.79 | 19.20% |
| 14 | 24.07.2018 | 329 | 2 | 6.01 | 4.93 | 19.44% |
| 15 | 25.07.2018 | 172 | 4 | 5.48 | 4.52 | 13.10% |
| 16 | 25.07.2018 | 254 | 3 | 5.85 | 5.05 | 14.04% |
| 17 | 30.07.2018 | 548 | 3 | 5.76 | 4.88 | 14.92% |
| 18 | 20.07.2018 | 550 | 2 | 5.88 | 5.24 | 16.02% |
| 19 | 20.07.2018 | 527 | 3 | 4.43 | 4.52 | 14.79% |
| 20 | 21.07.2018 | 174 | 2 | 5.50 | 4.94 | 12.07% |

THANK YOU

WAR AGAINST VAR