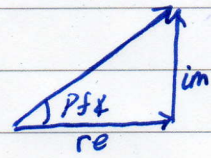


2) 6.6 kV factory Peak period : 7am to 11pm

Contract Capacity = 1500 kW Pf ϕ = 40.54°

High Tension - Small



$$\text{Contract Capacity Charge } \$/\text{kW/mth} = \cancel{\$8.15} \ 8.72$$

$$\text{Peak Period Charge } \$/\text{kWh} = 1.03$$

$$\text{Off Peak Period Charge } \$/\text{kWh} = 0.10$$

$$\text{Reactive Power Charge } \$/\text{kVarh} = 0.63$$

$$\text{Uncontract Capacity Charge } \$/\text{kW/mth} = 13.09$$

a) Maximum energy use in 30 min = 800 kWh

$$1 \text{ kWh} = 3600 \text{ kJ}$$

$$800 \text{ kWh} = 2880000 \text{ kJ}$$

$$\text{Max Power} = 2880000 \text{ kJ} / (30 \times 60 \text{ s})$$

$$= 1600 \text{ kW} \#$$

b) Total ^{Real} Energy = 10000 kWh \times 30 = 300000 kWh

$$\text{Contract Capacity charge} = \$8.72 \times 1500 = \$13080$$

$$\text{Peak Period Charge} = \$0.0103 \times 300000 = \$3090$$

$$\text{Off Peak Period charge} = \$0.001 \times 0 = \$0$$

$$\text{Uncontract Capacity charge} = \$13.09 \times (1600 - 1500) = \$1309$$

$$\text{Total Reactive Energy} = \text{Total Real Energy} \times \tan[\text{Pf } \phi] = 256549 \text{ kVarh}$$

$$\text{Reactive Power Charge} = \$0.0063 \times [\text{Total Reactive} - 0.62 \times \text{Total Real}] = \$444$$

$$\therefore \text{Total bill} = \$13080 + \$3090 + \$1309 + \$444$$

$$= \$17923 \#$$