



**UTILACOR**  
Energy Management Systems

## Contract Review for new client.

When taking on a new client, Utilacor will visit each site and review the current charging regimes at each of the sites.

In the case of this inner City Council, there were 7 major electricity supplies to be reviewed, with an annual spend in excess of \$200,000 per annum.

Following the review a total of 6 Contracts, Tariff and Demand alterations were made, with a total annual benefit of \$19,800 per annum derived with no capital expenditure.

Further a total of 8 "small capital works" projects were identified with an annual benefit of approximately \$40,000 from a Capital expenditure of \$23,000 were identified and slotted into the following year's Capital Budget for council.

Utilacor also recommended another non-capital change to aggregate two adjacent electricity supplies into one, deriving an additional \$5,500 per annum in benefit.

### **Result:**

Benefit derived from non-capital items **\$25,300 per annum**

Benefit derived from capital expenditure related items **\$40,000 per annum**

Capital expenditure cost **\$23,000.**



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## Maximum Demand - Metering Error

### **Incorrectly Applied Maximum Demand – Meat Processing Facility**

By reading the electricity meters independent of the electricity markets, Utilacor is able to recognise many metering errors and anomalies. An erroneous reading at a meat processing plant showed the client increased their Maximum Demand by 344kW for a period of 45 minutes.

This resulted in the Demand Charges for the site increasing by approximately \$30,000 per annum.

Upon investigation by Utilacor staff, it was claimed by the Electricity Retailer, Distributor and Meter Agent that the readings were correct and validated, to be applied forthwith. The retailer subsequently issued bills to the client and the distributor also reset the demand and issued charges to the retailer.

Utilacor investigated further and were able to prove to the Distributor and the Meter Agent that the meter must have malfunctioned in that period, as:

1. It was not physically possible for the site to reach a 344kW demand without every single load running at peak capacity simultaneously.
2. It was not physically possible for the Distributor's electrical substation and fusing sizes to supply 344kW without either blowing the fuse or causing a fault in the transformer.

The distributor accepted the argument, reversed 4 months of charges, and reapplied the demand to the value prior to the "false reading. These reversals were then applied by the Retailer to the client's bills.

#### **Result:**

Benefit derived from the rectification of incorrect readings **\$30,000 per annum.**

Benefit derived from the retrospective recovery of overcharges: **\$10,000.**



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## Supply Rationalisation

### **Aggregation of Supplies – Regional Irrigator**

Our client constructed their Orchard in two stages, and as a result had River Pumps that were dedicated to each stage. The pumps were located side by side on the River Bank and had been for over three years.

Utilacor profiled the usage levels at both the sites independently and then profiled what the profiles would look like if the sites were merged as one electricity supply point.

The results indicated that the overall (or co-incident) demand was some 250kW less than the peak demands at both sites simply added together. The result of merging the two sites together would therefore be that the kWh consumption would remain the same, however the billed Maximum demand would drop by 250kW.

At that location 250kW commanded demand charges of \$25,000 per annum.

Utilacor managed the aggregation of the two sites, which required some minor physical alterations. However the site aggregation did require in-depth and difficult negotiations with a range of market participants including the local Network Provider, the Metering and Data Contractors and the client's Retailer.

#### **Result:**

The aggregation reduced annual billing by: **\$25,000 per annum.**

The most painful part is that this aggregation could have been done when the second stage of the Orchard was constructed more than 3 years earlier, in-excess of \$70,000 was lost and irrecoverable as a result of the two pumps stations being electrically separated. Had the construction project received some incisive input in relation to electricity operational costs, this would not have occurred.



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## Infrastructure Construction

### **Voltage Conversion - Warehousing**

Our client purchased an aging and spacious facility in Melbourne that had previously been used for the manufacture of automotive components and as a result had extensive power capacity – far more than our client would ever require.

While this could be seen as a luxury, the site in question had previously taken supply at high voltage – 22,000 Volts – and owned each of the five transformers on site.

The prior owners operated with demands in excess of 2000kW – our client needed 250kW, and the minimum chargeable demand for a HV site is 1000kW. The annual difference in costs from 250kW on LV supply and 1000kW on HV supply exceeded \$65,000.

Utilacor initiated a project to convert the site back from HV Supply to LV Supply, which required new power line installations, the retirement of existing assets and the on-sale of those assets that had value.

Utilacor negotiated with the local Network to grant a 6 month window whereby LV costs at 250kW would be charged while the conversion took place. However the network also advised that its resources could not undertake the project within that timeframe.

Utilacor sought competitive tenders and appointed power line design and construction resources to bring the project to fruition. The project was completed within the given window and at \$20,000 under budget.

The “valuable” assets retired are currently in the process of being sold, with an expected value of around \$20,000.

A similar project is underway at another site acquired by this client that was once a major food processing facility, and has now been converted to Warehousing. Similar cost benefits apply.

#### **Result:**

Benefit derived from 6 Month Moratorium period: **\$33,800.**

Benefit derived from moving to Low Voltage **\$67,000 per annum**

Capital expenditure to make the change **\$99,000**

Cost recovery from sale of Assets **\$20,000.**

Resultant ROI: **1.2 years**





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## Network Tariff Application Error

### **Network Tariff Applied Incorrectly – Automotive Component Manufacturer**

During a site audit Utilacor staff noted that a power factor correction unit was installed though the client was not billed on a Network Tariff that rewarded high power factor.

Upon further investigation it was also discovered that the customer was billed an incorrect Network Tariff by both the Retailer and Distributor for 18 months. This error alone resulted in overcharges exceeding \$15,000 to that point. The ongoing penalty to the client, who had recently ramped up their operation, was also around \$13,500 per annum.

Utilacor staff sought to rectify this problem retrospectively and in an ongoing manner. After 4 months of providing definitive evidence and usage/cost profiles to the Retailer and Distributor, the Distributor accepted an error had been made and altered the Network tariff retrospectively and the Retailer credited the site's incorrect costs for the past 18 months and altered the format of future bills to reflect the change.

#### **Result:**

Benefit derived from the rectification of the incorrect application of the non-kVA Demand Network Tariff: **\$19,500.**

Benefit derived from the ongoing avoidance of overcharges: **\$13,500 per annum.**



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## New Supply Connection

### **Leading Australian Private School**

Our client is one of the world's leading Private Co-ed boarding and day schools. We were recently asked to review the new power supply connection for a brand new \$16M health and fitness facility that will combine everyday medical facilities alongside proactive approaches to good health. The new centre will provide new facilities including a pool, gymnasium and dance studio for current students and local residents.

By carrying out our own thorough load analysis and utilizing our energy management experience of other sites with similar usage characteristics, we were able to generate an estimated load profile that took into account all factors such as diversification, operating hours, equipment duty cycles etc. This formed a reliable guide to properly establish a realistic demand that would be likely to be recorded in the future.

Our review process highlighted two possible issues that would have resulted in high ongoing Network Costs: - 1. "Chargeable demand" and, 2. "Commissioning period". Because of our knowledge of the industry and the processes involved with installation of new supply connections, Utilacor was able to negotiate with the Distributor to substantially reduce the billable demand figure and the minimum network tariff applicable for our Client. We also negotiated special arrangements that reduced the likelihood of striking a high demand during testing procedures for the new installation.

#### **Result:**

The Client has avoided unnecessary high ongoing costs by reducing the chargeable demand figure along with preventing higher ongoing costs due to an (unusual) demand being struck during the commissioning period.

#### **Estimated Benefits:**

Reduced Ongoing Network Costs – **\$33,580 per annum**

