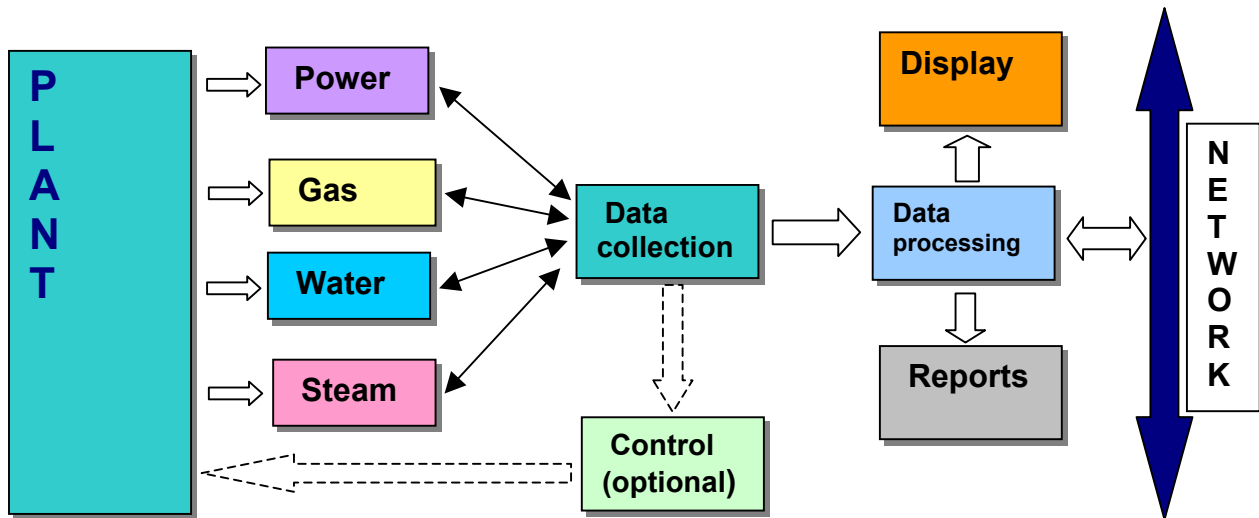


# Working with QUAD AUTOMATION to design Energy Management System



## Phase 1: Initial discussion Preliminary pricing

The design of an energy management system begins with a visit of one of our engineers to the plant and an assessment of present energy loads and associated costs.

### You provide us with:

- A layout of your facility
- Location of major energy consuming loads
- Present load utilization

### We prepare:

- Preliminary system configuration
- Preliminary budget

## Phase 2: Concept development and Firming of price

The next step is to develop the detailed functional specification and basic design, and identify all the cost items. This work is credited against the cost of the final system when you place an order. The value of this work is estimated at 10% of the total engineering cost.

In the design phase we work with you to investigate different solutions. We work through all of the factors that affect pricing to enable you to make choices that best suit your need.

A final detailed price is calculated, itemized down to include all purchased items. A detailed schedule is also developed



### **Phase 3: Receiving the order and developing detailed design and material list**

Should you decide to place the order, we ask for term payments to cover the ongoing cost associated with the project.

During the detailing of the hardware and software design we keep you informed of the progress. If we encounter any delays in equipment/parts supply to our plant you are informed immediately of the situation.

We review together the final detailed design. At the end of this stage the design is frozen.

The installation drawings and specification are prepared next. These documents are issued to installation contractors (at least three) for competitive bid. We make a recommendation based on price and track record and you make the final decision as to which contractor gets the job, as this part of the project is financed directly by you.

### **Phase 4: Fabrication of control cabinets**

The purchased components are assembled into control center(s). The work is done either in our plant or subcontracted to reputable panel builder. When it is subcontracted we follow strict quality assurance procedures to make sure that the panel(s) are fabricated to our standard of excellence. You can inspect the fabrication process at any time.

### **Phase 5: Installation**

We supervise the contractor(s) throughout the installation phase. In this operation the work is coordinated with your operational facility to ensure minimum interruption to you process.

### **Phase 6: Commissioning and acceptance**

After completion of installation, the system interconnections are checked, the interface and signal levels are verified, the computer user interface is validated and the reporting printout checked. The programs are verified for functionality for all possible scenarios.

When we finish checking and validating the system, you are then requested to accept it. By accepting it, you agree that the implementation is in accordance with the specification. We still carry the responsibility for system performance for one full year after the acceptance, or 18 months from the date of shipment.

### **Phase 7: Support**

Our support is provided at two levels. We can access you system remotely (where you give us the access at the time of service requirement), or we send our service engineer to site when the problem cannot be resolved remotely.