



By **Rakesh Sahay**  
 Founder Director  
 Veratvatva Engineering Consultants LLP, Bangalore

# A Case for Performance Based O&M Contracts

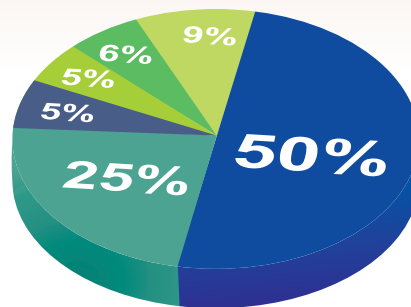
Part 2 of 3

## Performance Based O&M

In Part 1 of this article, we discussed the prevalent O&M contracts, satisfaction delivered and received, and challenges faced by facility managers and service providers to achieve satisfaction. We also discussed the opportunities in SLA-based contracts and bonuses in-built in such contracts, and benefits of performance based contracts for the user, service provider and society at large.

How to make it happen? This question is very crucial and controversial in contracts with SLAs.

The client facility should have feeder and metering for various utilities separately. Log data of the same on daily and monthly basis should be available. Finally, the ratio of the EB electricity bill and utility consumption should be noted. The end user ultimately should be able to reduce the energy bill and expense. Only then it benefits the user. Whatever action the service provider takes should reflect in the energy bill of both the EB as well as back-up power (diesel) consumption.



Hence, if HVAC consumes 60% of the facility's energy, 5% reduction in HVAC energy should result in 3% reduction in the overall energy bill. This is the actual saving and reduction in bill and not in internal metering.

Remember, this saving is also two pronged: reduction in demand charges as well as energy charges. Facilities that have higher DG usage and consumption benefit much more sometimes, as the reduction in energy may result in eliminating the need to use one DG running on part load and increasing the overall loading on rest of the DGs, which reduces the DG specific consumption,

thereby giving the energy efficiency in DG as an additional bonus.

This agreement or contract becomes easier to implement if the user has good previous energy consumption data and split up.

The methodology that can be followed is:

1. Use last one year's logged energy split up and energy bill data of diesel consumption and EB bills.
2. Use the same period's logged in data of split up of HVAC, lighting, essential (UPS) and non-essential (raw power DB) loads. Sometimes, lighting data split up is not available as the same is

## About the Author

**Rakesh Sahay** is a Founder Director of Veratvatva Engineering Consultants, which is involved in Ultra High Efficiency building and campus designs in both commercial and industrial sectors. He is a BEE Accredited Energy Auditor and GRIHA Certified Trainer with over 20 years of experience in auditing, commissioning and performance engineering of facilities, in addition to design. He also practices energy targeted and profit sharing SLA driven Operation and Maintenance.

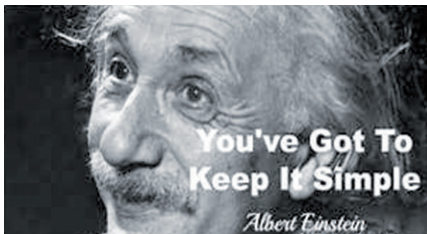
*continued on page 46*

## A Case for Performance Based O&M Contracts

continued from page 44

taken from the floor feeder. However, it is important to have an authentic log of split up in as much detail as possible.

3. Data on operating hours of usage of the facility as well as various components of plants, if available, are helpful in preparing a better documented agreement. For example, assume that, of the ten floors of a facility, two floors operate 24/5 or 24/7, while others operate 12 hours per day. The critical loads anyway operate 24/7 and are 6% of the facility area.
4. The above information, when captured, gives a baseline for any performance oriented contract. These would be the facts that no one can deny. Records would be available, operation times and periods would be recorded, hence the baseline can be prepared.
5. Baseline preparation can be simplified by having kWhr/per sqft x hours of usage, or on workstation hours of usage. The latter will complicate the contract with disputes regarding occupied workstations, un-occupied workstations, un-occupied within operating hours while only 10% workstations are operating beyond certain times.
6. Hence, to keep it simple and within defined tolerance limits, the sqft hours of usage can be used for starting honest, applicable, less disputable benchmarks and baselines.



7. If 2,000 sqft operates 24 hrs and another 12,000 sqft operates 12 hours only on weekdays, while another 1,500 sqft operates 24/7, the total sqft-hr operation is:  
 $2,000 \times 24 \times 5 + 12,000 \times 12 \times 5 + 1,500 \times 24 \times 7 = 12,12,000$  sqft-hr



of usage, rather than 15,500 sqft of usage, with 75% operating only 12 hours and the rest operating 24 hours in which 50-60% operates only on weekdays. Here, though the exact working may not be very accurate, it would be with minimum dispute. Thereby, this idea has a chance to bring in the necessary change. Once the contract is signed and operations are on, data and information collected can bring in better information from the site both for the service provider as well as the end user, to refine the contract, continuously increasing the accuracy, making it acceptable to both the parties and mutually beneficial. Remember that these contracts need to be operated on the simple principle of collecting greater benefits from where one is, rather than counting on what one is giving, as long as they do not give more than what they are already giving, but with better performance on comfort as well as uptime.

8. How much to give, and on what basis? Again, to simplify the contract and minimize disputes as well as to encourage the performing team, the



focus can be on uptime and energy consumption. Hence, if a client is spending Rs.200/TR/month on O&M and Rs.0.05 per sqft-hr on energy, the net expense for the end user is Rs.12,16,000 for 1,00,000 sqft of the building, which operates with 500TR installed capacity of AC plant and of which 75,000 sqft operates for 12 hours for 5 days a week, 20,000 sqft operates for 24 hrs but 5 days a week, and 5,000sq ft operates for 24 hours 7 days a week.

Hence, the estimation is  $200 \times 500 =$  Rs.1,00,000 for plant O&M.

$75,000 \times 12 \times 5 + 2,000 \times 24 \times 5 + 5,000 \times 24 \times 7 \times 4$  weeks/month x Rs.0.05 = Rs.11,16,000.

For the sake of simplicity, the actual usage considered here is 20 days a month.

The value of Rs.0.05 per sqft-hr will have to be derived for every site separately to arrive at the contractual sqft-hr for every building and site, and this value used to divide the net energy cost month on month, including DG energy cost as well as EB energy cost including the maximum demand.

Hence, the net out flow is Rs.12,16,000 per month.

9. Now, if the service provider has been contracted with the clause of uptime as well as minimum 3% energy reduction, he is bound to reduce the energy cost by Rs.33,480 per month.
10. The client can expect a net outflow of Rs.11,82,520 without loss in comfort, nor loss in uptime.

### Scenario I

If the service provider has been able to reduce the energy consumption by Rs.50,000, the management should not hesitate to share Rs.16,520 from that



continued on page 48

## A Case for Performance Based O&M Contracts

*continued from page 46*

with the vendor. In fact, to encourage that, the management should include in the contract that for 3% to 7.5% reduction in energy bills, the management would share 50% of savings with the service provider, subject to no decrease in satisfaction levels and uptime availability.

This encourages the service provider to keep the plant in excellent condition and operate it at its peak operational efficiency levels. Once the plant is serviced properly, preventive maintenance is done sincerely and timely, breakdowns automatically get minimized or eliminated. Since the plants and their operations are checked regularly, preventive maintenance becomes effective and the life of the equipment improves. The service provider benefits by reducing his breakdown/repair costs. The client benefits by better uptime and lower energy costs. Over and above the regular fees, the service provider gets the saving bonus.



Consider a case where regular attention to the equipment and its observation give the service provider an idea for enhancing energy conservation. This may require some investment. Now, most of the clients are in leased premises with equipment owned by developers. The developer does not benefit from investing his capital with no increase in revenue, since lease agreements are for a fixed period with defined charges. Energy bills are the end user's responsibility. Most of the developers do not even charge any mark up in the energy bills and pass on the same to the user on cost basis, other than common area maintenance charges. The user cannot make investments since he does not own the equipment, and contractual lease periods are 3-5 years only. Any investment with payback period beyond two years gets rejected by the management, because the approval procedure for a capital item

itself would take a year, and ordering and installation on working sites would take 5-6 months, ensuring that payback starts after the lease expires.

Thus, it is prudent to include in the contract a bonus clause for the service provider that, in case there is saving beyond 7.5%, the user shall pay the service provider the entire amount saved over 7.5%. We will explain the logic for this later in the article.

### Scenario II

For the above example of 1,00,000 sqft facility:

Minimum energy bill saving target in SLA with service provider is 3%, else Rs.33,480 will be deducted from his bill of Rs.100,000 per month.

If saving is between 3% and 7.5%, Rs.83,700 - Rs.33,480 = 50,220 (Rs.33,480 is part of 3% saving).

By sharing 50% of this saving, the end user saves Rs.33,480 + Rs.25,110 = Rs.58,590.

The service provider gets a bonus of Rs.25,110 per month, i.e. Rs.50.22 extra/TR/month, or 25% additional revenue.

### Scenario III

Assuming that the service provider is able to conserve 10% of the energy consumption:

Energy cost saving = Rs.1,11,600 per month.

Amount saved by the end user = Rs.58,590.

Extra amount generated by the service provider = Rs.1,11,600 less Rs.58,590 = Rs.53,010.

Now, the question is, why should the user pass on the entire benefit to the service provider over and above the 7.5% saving?

From the experience of the author, it would be very difficult for the service provider to save anything beyond 7.5% without incurring extra cost, extra effort and, sometimes, capital investment. Hence, it would enable him recover all that within a framework of 1 year, and then recover the investment, interest on investment (professional man-hours and money), so that he can make a profit over this amount. It would make it viable

for the service provider and encourage him to undertake this exercise. The user, anyway, is saving almost 4.8% expense without any investment, but with a smart implementable and simple performance-based contract.

**Let us go back to the beginning.**



The user has a traditional service contract for O&M. He is not satisfied with the level of service received and any kind of carrot and stick is not bringing about any improvement. The service provider is not happy with what he gets, and expects better rates from the user. The user says he is ready to consider better rates next year provided there is improvement in service for one year.

The service provider is wary of such promises; the user is also wary of the service provider's commitment to improve the service and response time. Penalty clauses in the contract are serving no purpose, as higher penalty does not benefit the facility and the user, while there is a possibility of the service provider refusing to continue with the service.

In an incentivized performance based SLA contract, what happens is:



The uptime improves. The service provider is now proactive in giving invaluable suggestions for improvement. Preventive maintenance is actually being

*continued on page 50*

## A Case for Performance Based O&M Contracts

*continued from page 48*

done and not only routine servicing. Records are being maintained. Uptimes are tracked in an organized manner.

Was it the main requirement? Have the satisfaction levels improved? Have end user complaints reduced? Is the motive behind performance level contract being achieved?

Hence, there is a marked improvement from the previous monthly outflow with poor satisfaction levels, poor response and unsatisfactory answers.

Over and above this, the client is getting potentially 4.8% saving.

Is it greed that prevents the user from sharing the saving that the service provider is getting from his efforts and his investment of time and money? Or is it lack of courage to put up such a proposal to the management? Or is it just that everyone is waiting for someone else to bell the cat? ❁



***In Part 3 of this article in the next issue, we shall discuss what impedes the O&M industry from achieving SLA based contracts, and possible solutions to the impediments.***