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Expert View: "Why India needs to undertake T&D Asset Management"

Utility Voice: P.A.R. Bende, MD, Madhya Pradesh Power Transmission Co Ltd

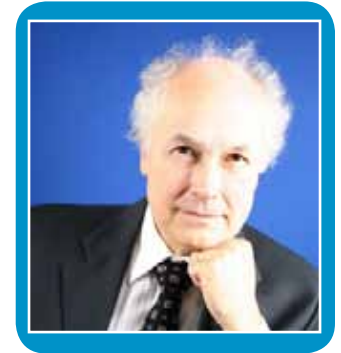
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ALEX MOGILEVSKY

Why India needs to undertake T&D Asset Management



DAVID CURTIS

There is a way for the power T&D sector to manage all challenges known today, as well as those that are not yet foreseen. The solution is the contemporary application of Asset Management, suggest Alex Mogilevsky & David Curtis.

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It is well known that India faces many challenges in the power T&D sector. Many of these challenges are those that are faced in utilities around the world and yet there are some that are unique to India. Let's look at some of these challenges. Electricity demand is continually increasing, requiring more and more T&D infrastructure to be built and integrated within the existing systems. Various parts of the T&D infrastructure are controlled by the Central sector or the state sectors or the private sector creating both technical operating issues and market concerns.

Incorporating renewable energy sources (RES) with conventional generation and accommodating this development on a going-forward basis creates challenges. Then there are the environmental and conservation matters that must be addressed. As well as meeting the growing electrical demands, there needs to be a balance with energy conservation, smart grid technology and improved electricity utilization. How can India's power T&D sector rise up to meet all of these challenges?

There is a way for the power T&D sector to manage all these challenges as well as those that are not yet foreseen. The solution

is the contemporary application of Asset Management.

Many power T&D utilities around the world will assert that they practise asset management. They will point to their asset management department and say that the application of asset management is sited there. In one sense, they are correct. These utilities typically follow asset management from a technical perspective which is asset-focused. They create asset-centric programs such as a breaker replacement program or a tower coating program. They will have specialists who are very knowledgeable about a set of assets on their system and who have the

responsibility for maintenance planning for those assets. In their planning, they may apply quite sophisticated analysis techniques such as Weibull Life Data Analysis to predict the lifecycle of an asset type. All of this is part of an asset management process. But in the contemporary approach to asset management, this is only the bottom-up approach to asset management.

The contemporary practice of asset management also includes the top-down approach that is embodied in the ISO-55000 set¹ of standards on asset management that was first published in January 2014. ISO-55000 is the international standard for the practice of asset management in any large asset owning organization. ISO-55000 recognizes that organizations, such as T&D utilities, have a corporate vision and mission. This strategic perspective means asset management in the T&D utility environment needs to consider the context within which the utility exists. This entails recognizing all the challenges such as those noted at the beginning of this article in the practice of asset management.

Furthermore, ISO-55000 recognizes that the utility's corporate vision and mission

“Power T&D utilities typically follow asset management from a technical perspective which is asset-focused. This is the bottom-up approach. However, the contemporary practice of asset management also includes the top-down approach that is embodied in the ISO-55000 set of standards on asset management.”

also lead to corporate goals and objectives. Asset management goals and objectives, therefore, exist only to promote the achievement of the corporate goals and objectives. Achieving these goals and objectives is through developing a strategic asset management plan. It is at this juncture that this top-down approach to asset management melds with the bottom-up approach, which provides the analytic and information basis for formulating the overall strategic asset management plan.

However, direction from the ISO-55000 standard extends beyond this. Recognizing that the senior management leadership is responsible for the corporate vision and mission as well as the goals and objectives means that senior management must also provide leadership for asset management

“Contemporary asset management starts by recognizing that the assets of a T&D utility are there to provide value for customers, owners, regulators and society.”

in order to achieve the goals and objectives. Leadership needs to come not only from the senior ranks but also within the utility at various levels to ensure proper asset management practice as well as the achievement of goals and objectives and taking ownership of the strategic plan.

An effectively and efficiently operating practice of asset management also requires support. This means appropriately integrating asset management with other functions in the utility such as finance, IT and human resources. Resources must be collectively allocated to achieve the goals and objectives both of asset management and the corporation,



Integration of electricity from renewable energy sources into the grid will be a key challenge for India.

and optimized to attain maximum efficiency.

Asset management should also include oversight and control of asset management activities. This would include matters such as setting and revising policies and procedures. Also, this would entail oversight of any aspects of asset management that are outsourced.

Power T&D utilities are typically very good at planning, building and maintaining, which is reflective of a process that is asset-focused. However, ISO-55000 also emphasizes the need in asset management for performance evaluation. There are two facets to this. Whenever the utility completes a significant project, time should be taken to determine lessons learnt from that project exercise. What went right? What went wrong? What lessons should be kept for the next time something like this is planned and executed? Lessons learned can provide a valuable source of information as part of this feedback. The other facet is the performance evaluation of asset management and asset management systems. This is the

opportunity to assess how well asset management is performing and whether there need to be changes or modifications made.

The final piece of ISO-55000 advocates for improvement. Lessons have been learnt, not only in the planning and execution of asset management activities but also in how asset management itself is performing. Time should be taken to assess, evaluate and implement improvements so that the practice of asset management within the utility can be continuously improved.

Now let's track through how contemporary asset management works. Take one of the challenges that the power T&D sector faces in India and apply contemporary asset management. Take "incorporating renewable energy sources (RES) with conventional generation". First, there needs to be a link to a corporate objective to make this a matter of concern for the utility. That corporate objective could be as simple as "provide quality customer service". Leading from this corporate objective, there could be an asset management objective to properly incorporate



Power T&D utilities typically follow asset management from a technical perspective which is asset-focused.

RES recognizing the presence of conventional generation. That, in turn, would lead to renewable energy incorporation to become part of the strategic asset management plan. Note that this would be done as part of an integrated planning approach looking at all the other asset plans and aiming at mitigating and reducing overall risk. The plan would then be executed and properly supported with effective asset management oversight and control. Completing this would be the performance evaluation of both the incorporation of renewable generation but also the performance evaluation of asset management in enabling this project followed by making any improvements such that this could be done better in the future.

So, what are the merits of following contemporary asset management in the power T&D sector? Contemporary asset management starts by recognizing that the assets of a T&D utility are there to provide value for customers, owners, regulators and society. It is there to create alignment across the entire utility to enable the accomplishment of corporate goals and objectives. Contemporary asset management rests on leadership from the senior ranks but also leadership across the utility. It also provides assurance not only in the achievement of

goals and objectives but also in the growth and improvement in the practice of asset management.

Contemporary asset management enables power sector T&D utilities to make asset investment decisions based on a sound knowledge base. It provides for the effective and efficient management of the utility's assets. It enables the utility to achieve its objectives. Overall, contemporary asset management aims at managing risk, maximizing value and improving performance for power T&D utilities.

Looking at how contemporary asset management faces current challenges for India's power T&D sector has left one aspect unaddressed. Will contemporary asset management aid utilities in meeting future unforeseen challenges? The answer is: Yes, it will. To illustrate this, examine one future challenge that is not yet generally considered in India. (By examining the following unforeseen future challenge does it now make it a current real challenge?) India has

been going through and continues to go through a tremendous growth in its electricity sector spurred by the large and growing demand for electricity. Other jurisdictions in the world have already experienced such fantastic growth. This rapid growth will end at some point in the future!

In other jurisdictions, electric utilities have been greatly and uncomfortably surprised by the often-sudden transition to dramatically lower load growth rates because of the total consumption of

"The overall goals of contemporary asset management are: managing risk, maximizing value and improving performance for power T&D utilities."

their attention in trying to meet ever growing and expanding electricity markets. Having a contemporary asset management system with its strategic focus would provide not only a warning of such an impending change but also the ways to effectively manage such change. When the boom for India's electrical expansion ends, it will be those utilities with a fully effective contemporary asset management practice in place that will best make this transition. ■

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