



SUMMARY

Bharat Light and Power®

Industry

Renewable Energy, Power
Generation

Business Value

- Energy Production Forecasting
- Weather Prediction Modeling
- Operations Management
- Predictive Equipment Maintenance
- Role-Based Data Visualization
- OT-IT Integration

PI System™

- Connected Services
- PI Server™
 - Data Archive
 - Asset Framework
- PI ProcessBook™

Partners

- IBM®
- ECG®
- ConnectM®

Ensuring Peak Wind Turbine Performance For Energy Generation

Founded in 2010, Bharat Light & Power (BLP) owns and operates 200 megawatts of renewable energy projects in India. To manage these assets, BLP developed the proprietary Orion platform, built on top of the OSIsoft PI System. At the 2015 OSIsoft Users Conference in San Francisco, Balakrishnan G. Iyer, Chief Development Officer, discussed BLP's new managed services operation, which enables other renewable energy companies to tap into the real-time data and predictive intelligence provided by Orion.

Bharat Light and Power has two parts to its business, Iyer told the audience. "One, it tries to improve the quality of life of people by providing clean energy at an affordable price," by building renewable energy power plants. "Then there is another aspect of it," Iyer said. "We try to provide world-class services by leveraging the advancements in big data and analytics in the renewable sector."

India has nearly three times the population of the United States. Yet, it has less than 4% of the U.S.'s electricity generation capacity, Iyer told the audience. "One in every 4 people in the world who don't have power live in India today." Therefore, "renewable [energy] advancements in India are a very critical element of how the country is going to get out of the power hole that it is in today. However, that brings with it its own challenges," he continued. Renewable energy facilities have unique issues. "First, the fact that you don't have real-time visibility into what is happening" with assets like wind farms, which are often very remote, he said. And, because "you can't plan the fuel, the way you can in a coal plant or a gas plant, [t]here is a lot more desire and need and demand for you to have real-time visibility into these assets." What companies need, he said, is "predictive intelligence."

To address these issues, BLP turns to the PI System. "You have to have a stable platform and a stable foundation," Iyer said. BLP's PI Server runs on a secure, cloud-based infrastructure. "Being where we are, we weren't bound by any legacy systems or bound by any legacy issues about which hardware or software to use. We just said, let's skip a few generations and go straight to the cloud."

"But what lies on top of it is what is really critical," he added. That's Orion, a data platform "which does everything from mobility solutions to situational awareness to visualization," in order to provide "real-time information at the right place to the right person at the right time."

BLP makes Orion available to clients of its managed services business, providing management, reporting, and integration with clients' ERP systems. Orion has a

“whole suite of application” built for different end users, from C-suite individuals to asset managers and field engineers. “All of these things have been built for all the layers of organization that are out there.”

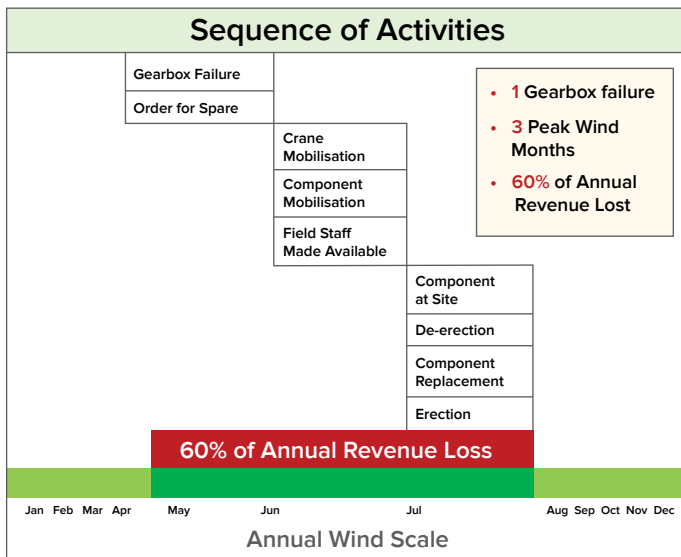
Pulse provides “24/7 active monitoring.” It takes real live data from the PI System and using ProcessBook and other things acts as “the control center”.

Publish is a tool for creating “customized”, “automated”, “instantaneous reports”.

Cognito offers “predictive intelligence.” Leveraging Notifications and third-party statistical and data analysis tools, Cognito allows BLP to “immediately send information out to the right person to ensure that they are taking some action”.

Predicto generates custom energy forecasts tool. Algorithms crunch “weather data,” “idiosyncratic information” from wind farms, and “macroeconomic data” to provide current info, “day-ahead,” “short-term”, and “long-term forecast[s]”.

Failure leading to losses



“The visualizations provide the situational awareness that you need in terms of providing real-time information at the right place to the right person at the right time.”

– Balakrishnan G. Iyer,
Chief Development
Officer, Bharat Light &
Power

The PI System “is the mechanism through which we collect all of the data,” Iyer explained. “To bring the best advancements of the data world into renewable energy makes a lot of sense, because you can bring up operational efficiencies without changing anything in the hardware, without changing anything about the physics.”

“That 10-15% efficiency makes a lot of sense business-wise,” he continued. “However, the impact is a lot bigger than that. Let me just leave you with this thought: that 10% increase in operational efficiency, if I did that for all of the plants sitting in India, 25% of the 300 million people who don’t have access to power today in India would have access to power. That’s what these operational efficiencies mean.”

Iyer, Balakrishnan. Bharat Light and Power: *Power Speed of Real-time*. OSISOFT.COM. 29 April 2015. Web. 17 June 2015. <<http://www.osisoft.com/Templates/item-abstract.aspx?id=12377>>.