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Electrical Monitor

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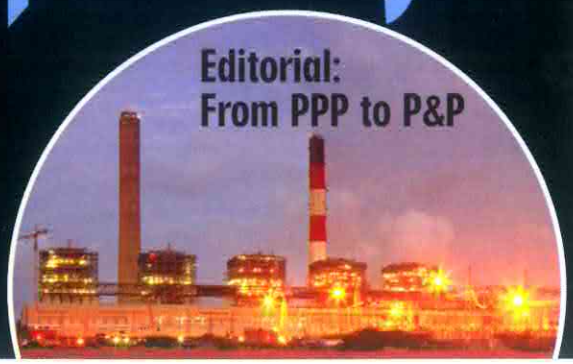


Editorial:
From PPP to P&P

Focus: India Powering Up
Special Report: Union Budget 2015
Technical Insight: STATCOM Technology

We expect grid-connected PV demand to grow significantly

— Ramani Kasi, President, Raychem RPG (P) Ltd

Raychem RPG, an equal joint venture between US-based TE Connectivity and RPG Enterprises, India, recently launched solar inverters (up to 750kW) and string combiner boxes for commercial and utility scale applications, in technical collaboration with Fimer SPA of Italy. **Ramani Kasi,** in this interaction with ***Electrical Monitor,*** tells us more on the new product from a technical and commercial perspective. Given the successful launch of the new product and the national thrust on solar energy, Ramani is duly optimistic about the inverter's prospects in the Indian market.

Tell us about the new range of solar inverters and supporting gear launched by Raychem RPG.

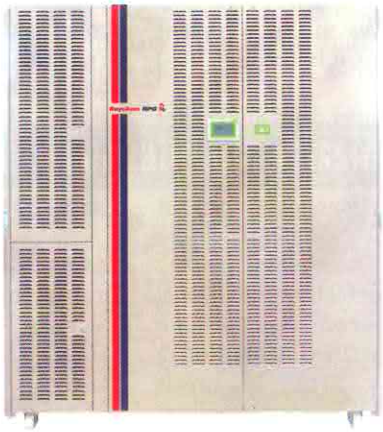
Raychem RPG is recognized as a bankable and innovative partner to the Indian solar industry for highly reliable products like cable accessories and jointing kits, connectors and fittings, insulators and protections, and specialty multiple winding transformers, for critical power evacuation and switchyard applications.

In our continued quest to serve our customers' critical applications across the complete value chain and become one-stop solution for electrical balance of system, Raychem RPG in collaboration with Fimer, Italy has central inverters for commercial and utility scale applications. In addition, Raychem has also launched smart string combiner boxes up to 24 inputs and monitoring solution.

To reduce installation and maintenance cost and time, Raychem RPG would also be offering turnkey containerized solution containing MV transformers, inverters, switchgear and LV panel in the near future.

What was the rationale of partnering with Fimer SPA of Italy? Please discuss how and why Fimer technology is relatively superior.

As I mentioned earlier, Raychem RPG brand is known for providing highly reliable products in critical applications. Having a critical understanding of what it takes to provide reliable products was the key to our choice of partner.



Fimer SPA is a recognized and respected company with highly reliable products in difficult and heavy duty industrial applications, such as welding, for more than 40 years. Their power conversion technology and architecture is state-of-the-art; and this technology is the foundation of the inverter. Fimer has been providing inverters to the solar market since 2007 and has an installed base of more than 500 mw globally with esteemed global giants such as Enel Green Power and Iberdrola. The partnership with Fimer SPA is our endeavor to provide highly reliable inverters to the Indian market.

Fimer's inverter architecture features advanced modularity at inverter and component level resulting in high redundancy and protection against energy loss. Currently, highest rating inverter has a 690 KW AC output power and is designed for 1,000V DC applications and can operate without de-rating ambient temperature up to 50°C.

High reliability and availability from independent power modules due to "pit-stop" serviceability as defective power modules can be easily replaced without stopping the functioning of the inverter by semi-skilled labor.

Electronic components works at lower temperature, as well as, modules switch on and off in a balanced way, with a full electronic control, until the machine reaches its maximum power resulting in longer product life. Besides, there is higher generation due to wider MPPT (maximum power point tracking) window, leading to longer working time for inverter (early start and late sleep)

Given that India is a tropical country, would the solar inverter need to be acclimatized to suit (relatively harsh) Indian conditions?

A Central inverter installed in cold conditions of Romania

Many of the 500 mw of installations mentioned earlier have been installed in difficult environmental conditions with high heat and intense cold climates. They have performed successfully for a number of years. Currently, deliveries are being completed for a large installation of 160 mw in the high desert region of Chile which will have high dust and temperature variations. Therefore, the inverters in their standard configuration have already proven effective in difficult climatic conditions.

As mentioned earlier, in our inverters, the electronic components work at lower temperature. Moreover, modules switch on and off in a balanced way, with a full electronic control, until the machine reaches its maximum power resulting in longer product life.

Having said this, if certain site-specific conditions require further acclimatization, we will be happy to meet those challenges working in concert with our customers.

Do you have plans of scaling up the inverter rating to beyond 750 kW in the near future, perhaps to cater more effectively to mw-sized plants?

We are working closely with our Italian partner to launch higher capacity inverters in the market shortly. We are

targeting sizes over 1 mw and can provide specific information closer to product launch.

How do you see the market for solar inverters in view of the huge national target of installing 20 GW of grid-connected solar power by 2022?

Since the start made in Gujarat, the Indian photovoltaic market has been growing in the last few years with the National Solar Mission. In the last 12 to 18 months, we have seen increased activity coming from the states such as Madhya Pradesh, Rajasthan, Punjab, Telangana, Karnataka etc.

There have been many announcements at the recent RE-Invest event and government has clearly laid out the solar prospects for the country. Finally, there appears to be an increased emphasis of the government to ensure compliance with REC and RPO.

We do expect the grid-connected PV demand to grow significantly over the next several years and the inverters are expected to follow the PV demand curve.

Does the Raychem RPG solar inverter support only photovoltaic plants or solar thermal (CSP) as well?

Central inverters are only meant for grid-connected PV plants.

When are you expecting to start manufacture (assembly) of solar inverters at the Chakan plant? What is the timeframe to increase the localization?

Assembly of the inverters would begin before end of Q3, 2015. We are targeting aggressive localization program and aim to complete the same before end of 2016.

Who would be your biggest clientele? Would you be marketing the product pan-India at the outset, or will it be phased over a period of time?

The product is targeted towards grid-connected utility and commercial projects. Our main customers would be developers and EPC contractors, and will be serviced through Raychem RPG's pan-India network. We had a very successful launch of the inverter at the RE-Invest event, and we expect to build momentum hereon.