

HPL: Steps forward with IoT-Integrated Streetlights



Gautam Seth
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HPL Electric & Power Ltd. is a well-established electric equipment manufacturing company in India, engaged in manufacturing a diverse portfolio of electric equipment, including metering solutions, switchgears, LED lighting and wires & cables, catering to the needs of market primarily through their pan-India network of 27000+ dealers and 2000+ distributors that are managed by the carrying and forwarding agents. In addition, HPL supplies their products to Power Utilities, which primarily includes supply of meters under direct contractual arrangements to electricity boards and power distribution companies, as well as through project contractors. Further, they supply their portfolio of products to developers of residential and commercial building projects, OEMs and to industrial customers through a mix of direct sales and supply through their authorised dealer network.

The company has recently announced the launch of its new product, Solar Home Lighting Solutions, which as the name suggests, is designed to provide solar lighting solutions for homes. The product is portable and is perfect solution for remote/rural areas especially where people don't have access to the power supply. In line with the government's rural electrification programme, the product is designed in a way so as to help people get access to electricity by means of using renewable energy sources like the solar energy, and thus improving living conditions.

"Requiring negligible maintenance, it is also a perfect fit for outdoor activities. While having all these advantages, the new product is backed by HPL's pan India service setup," says **Gautam Seth**, the company's Joint Managing Director with whom **LED World** team spends around an hour to discuss the state of Indian lighting industry and the company's presence in the market. Edited excerpts are here to follow:



HPL's Gurgaon Factory

How do you see the trend in streetlights?

The latest trend in the streetlights are that of integrated ones where the panel, battery and LEDs – all get integrated at the top in a single housing. Also, the streetlights are now Bluetooth-enabled. In the past couple of years, the way streetlights have changed or rather transformed is commendable as the applications have expanded and usage has escalated to new heights.

Going forward, the expected technology would be IoT-integrated streetlights which will catapult the way streetlights have been used till date. Also, with integrated inverters, we can expect much more improved and powerful systems where the excess power can be given back to the grid.

Further in future, these streetlights will become much more cost-efficient, which is going to be an important factor once there would be an integrated storage system. This has to have an affordable cost of ownership and association for upholding till the effective life of the system, which is seemingly possible with more agencies insisting on warranties and other associated things for longer maintenance.



HPL's R&D Unit



Integrated Solar Street Light

How do you see the role of solar in all this development? What would be contribution of HPL?

In the last couple years, although LED streetlights grew quite a lot but solar didn't grow so much mainly because of the maintainability over a period of time especially on how the storage devices or how the overall system would react. Keeping all this in view, we foresee a much more robust system in the making. This is because as the usage is going up, the cost is coming

down drastically. At the same time, each of the components are becoming much more efficient.

We have been in to lighting for so many years. We have two R&D teams comprising 100 people. Our R&D is very strong in lighting, in the communication technologies, and now in the storage part. We are in to the manufacturing of electronics. Now we have people who are capable of doing complete integration of all these components in one system. That is where our strength comes in.

In short, we have a focused solar team. At HPL, we are one of the few players where all our four verticals have products which cater to the solar industry. So, apart from lighting, we have net meters, solar cable, junction boxes and distribution boards & breakers developed and meant especially for solar.

What made you specialise in solar? How has been the response so far?

There were lot of small players who have come in to this segment, but we being an established one in the otherwise regular market, we felt that we need to enter this segment and put a strong R&D to develop more solar specific products. And since the generation is also shifting towards futuristic technologies like in some European countries, India is also shifting very fast. So, gradually the need arises to have those systems down the line for meeting out the need of future for distribution purposes. The advantage we had is a very rich and established background in the arena.

For solar LED streetlights, we already have got approval from a couple of states. In fact, these streetlights need a lot of approvals from renewable energy departments, which we are in process of. At the same time, we are also targeting various private players and agencies, which are either implementing or participating in various solar projects across the country.

For all this futuristic technology, are we infrastructure ready?

For now, no! But with the time passing by and the requirements getting generated, governments are also working on upgrading the basic infrastructure. For instance, HPL got its first order of smart city lighting from





LED Lighting from HPL

Bhopal, where all the streetlights were to be inter-connected through the CCMS system to the smart poles wherein every streetlight could be controlled through a centralised server using a protocol.

Initially, when we started, the basic infrastructure was not in place but eventually while the installation started happening, the communication system also got developed and the central server rooms were created. This is how it goes hand in hand. So, now when we see the change coming, the change is going to lead a big transformation where the infrastructure is also augmented and upgraded to meet the needed requirement.

How do you see the compatibility?

When we are looking to connect and getting data out of the system, we use international protocol of communication, which of course, is not proprietary to our kind of system only, but can be accessed by any compatible system which is in place. In Bhopal also, smart poles have the provisions of Wi-Fi, smart lighting, telecom and surveillance camera – all in to each pole. So, there is no reason why the technologies are not upgraded and implemented. But for all this to happen, time is needed. Also, for having robust systems, especially keeping in view the Indian conditions; rigorous R&D is going on to develop such systems.

We got to know that the industry is looking forward to individual control of streetlights!

In a project earlier we did for Ujjain Mela, we set up a cluster lighting system where we had installed group control where a group of 50 lights were controlled and communicated with centralised server. In a way, the efficiency of all those lights could be tracked together. While in Bhopal, we have

come up with a system, wherein individual lighting can communicate with each other and also to central server. But for individual lighting control, the system has to be cost efficient. It's still very early as a lot of R&Ds are happening to reach out to the best one. Overall, the industry is moving forward with all this in process.

Why should one stick to HPL?

Apart from our products which are already quite compliant with various specifications and can meet the needs of today, the important thing is that we have a very strong R&D experience as I ready mentioned. Besides, we have been in to one of the few companies with backward integrated manufacturing - right from electronics, mechanicals, plastics, optics, etc.

We do everything in-house. This is backed by our R&D and the expertise earned over the years on various communications on software development and on storage development. When you look at the solar lighting, one needs a partner over the effective life of the solution be it a government agency or a private entity. We are there to offer a solution right from the development till the effective life of the system.

The market has become lucrative enough to attract many small players, sourcing products from neighbouring countries. Is it impacting the ones like you?

Small manufacturers coming in with lower price tags do matter, but it doesn't last for long. Nonetheless, we have to be competitive. There are pressures each time on the pricing front. We have seen it in

meters and switchgears as well wherein we face the same situation. To cap this, we do certain value additions, for which people pay the premium based on certain qualities and technologies that we use. We are here to fight the competition – be it from India or outside. Consumers understand all these very well.

Therefore, in spite of so many components coming from outside which are cheaper than many established players in India, consumers have kept their faith intact with us and have continued showing their interest in our products. Keeping all these in view we have chosen to have backward integration in our manufacturing for most of the components and products. The consumer comes back to us with much more conviction of not deviating from a good quality product.

How do you see new players joining in the solar league?

This is obvious. Many people come and try their luck when such a huge potential is seen. This is irrespective of the industries. We have seen people coming in various other industries, which ultimately turn in to consolidation. Initially, there were a lot of people in the LED lighting market but then after sometime consolidation started happening wherein people played on their USPs, lot of other new players started losing interest, closed down units and moved away. It's pretty natural. The same is happening in solar also.

As far as HPL is concerned, our strength is always on the product range, technology and consumer requirements. We will remain doing what the consumers want. Eventually, we will find a better place and look to garner a considerable market share.



Lamp Photometry Testing

Although there are many people coming in, but the kind of expertise needed to perform the tasks and deliver the results are not owned by all. Normally, like we do in our meters, lighting or switchgears, we keep track on what is the latest and the newest technology and what the customer or the government agency can expect after three or five years. This provides us a base in such a way that we keep ourselves ready with the most contemporary as well as futuristic solution for that point in time.

What is current capacity at HPL?

In terms of LED Bulbs, we produce 1,00,000 bulbs per day. We are one of the few manufacturers, who do the plastics, the drivers, and the MCPCBs ourselves. We do the complete manufacturing in our state-of-the-art facility which houses 80 moulding machines for plastics, and three tool rooms for support in manufacturing. In similar fashion, we do the consumer, commercial, industrial and outdoor range. So broadly, we have a very huge capacity of manufacturing LED lighting products, of which, about 40% are streetlights, which can be converted in to solar if the time asks for as it would just be the augmentation of a couple of components like new circuit and solar panel.

Where do you get your products tested?

We do have our own lab for internal quality testing. When the product is ready, we do a quality test on our own. However, at times a third party test is done more for validation of the product. But many a time based on the requirements in tenders or in various certifications, a mandatory third party test is asked for, which we get done at various laboratories.

You said you are doing R&D for storage system. Are you planning to manufacture batteries?

As of now, neither we manufacture batteries nor do we have any such plan for the near future. In fact, the storage system is a different industry and needs different infrastructure altogether. There are lot of global players with huge investment in the R&D. They manufacture quality products from whom we source based on our own specifications. We have people in the R&D, who understand the storage systems and are well versed in this technology. They do the integration for us.

What is the contribution of lighting in the company's revenue?

Overall, the contribution is 20% from lighting, which is a growing vertical for us. But that doesn't mean all the other verticals are not increasing their chunks. Therefore, I can say that the share of lighting may go up a little bit but not much.

How has HPL been present in the market?

We have dealers who are common for our kind of products but we do have specialised dealers who only sell lighting products. Apart from that our sales team keeps meeting with lighting consultants, architects and electrical contractors.

Where the plant located and what is its capacity?

Our plant is in Kundli in Haryana which is dedicated to lighting and one is in Gurgaon. Overall we have seven manufacturing units. A lot of our capacity has been developed in the last two to three years. We have actually

factored-in our growth where the capacity utilisation is still at 65% to 70%. This shows that we are capable of meeting increased demand in future.

What made you develop home lighting solution?

There are certain government requirements of LED home lighting based on which we have developed our internal home lighting solution which caters up to 10 light points, one fan, a mobile charger, and some other thing. For this, the testing has already been done and we met the requirements of couple of such tenders. This is quite new but the government has big plans to distribute these systems in to rural areas.

What is the total revenue and which region is showing you more potential?

We are Rs.1200-crore-company and look forward to have double digit growth in near future. As of now, regional contributions comprise 60% from each North & West, 25% from South and 15% from East.

Having said all that how do you assess the future?

As we see, the way lighting is moving ahead, the products are shifting to solution-based. That is where we see the next level of demand coming from. The R&D is happening globally on chips and other critical components, which companies like us can better integrate to make the system much more energy-efficient. And those taking rapid strides to absorb new technologies and integrate all this in to the system; will be at the advantage.

