



## LV Switchgears



Switchgear is defined as an assembly of switching and interrupting devices, providing control, metering, protection, and current regulating applications. The primary components of a switchgear include switching and interrupting devices that are used for turning the power on or off, control devices, used for checking and/or regulating the flow of electric current, metering devices, used for measuring the flow of electric current and protective devices, used to protect power service from interruption and prevent or limit damage to equipment.

### Primary types of LV switchgear -

**Air circuit breaker :** These are circuit protection devices with air as the insulating medium. They are used when there is a need for high ampere ratings

**MCCBs :** These are circuit protection devices, whose current carrying components, mechanisms, and trip circuits are completely enclosed within a moulded case of insulating material

**Changeover Switches :** These are meant to move a circuit from one set of connections to another

**Contactors and relays :** A contactor is a type of relay that can handle high power required to directly drive an electric motor and a relay is an electrically operated switch, used where it is necessary to control a circuit by a low-power signal or where several circuits must be controlled by one signal

**MCB :** Is a small trip-switch operated by an overload and is used to protect an electric circuit, especially, in a domestic circuit as an alternative to a fuse

**Residual Current Devices:** They monitor residual current and switch off the circuit quickly if it rises to a preset level and can be broadly classified into earth leakage circuit breaker and residual current circuit breakers

**Distribution Board :** it is a component of an electricity supply system, which divides an electrical power feed into subsidiary circuits, while providing a protective fuse or circuit breaker for each circuit in a common enclosure with a main switch

Innovation in switchgears is primarily in terms of the aesthetics and customized features offered by the products rather than technological changes in the product, such as improving the product life cycle, tamper-proofing, increasing safety and handling, improving user-interface and focus on multi-functionality and niche functionality. Multinational companies and established manufacturers usually spend more on product improvement and the frequency of updating product features is usually two to three years.

### The market for LV switchgear

LT or low voltage ("LV") electrical equipment is a rapidly evolving industry segment, traditionally driven by demand from the Industrial segment. The LV switchgear market primarily depends on the growth of end-user segments. The segment comprising residential and commercial development are expected to witness positive growth, whereas the segment comprising industries and power utilities are expected to show resilience on account of low capital expenditure and investment in the near term.

The market for LV switchgear is expected to grow at a CAGR of 6.1% during 2016-2020 and is expected to reach ₹ 7,609 crore by 2020. Market players catering to the industrial segment have expanded their product portfolio to include modular switchgear devices increasing their reach to capture the residential market. Further, manufacturers of wires and cables continue to enter the market for modular switchgear devices enabled by sales and distribution synergies.

### Key growth drivers

- Revival of the industrial segment
- Growth in the residential segment
- Government initiatives and reforms for expansion and development of the transmission and distribution



-network and power capacity augmentation  
-Increased demand from the renewable energy segment

Raw material constitutes around 70% of the aggregate cost of production of LV switchgears and copper, steel and silver are the key raw materials used therein, constituting almost 75% of the total raw material cost. Manufacturing cost includes factory expenses, power and fuel, repair and maintenance.



## HPL Smart Energy Meters



Smart energy meter is an electronic device that measures the most accurate amount of electricity consumed by a residence, business or any electrically-powered device. A smart meter is reliable source for most accurate information of consumed energy that reduces the chance of error in the existing billing system to minimal.

Smart meter comprise first-generation smart meters or AMR meters and second-generation meters or AMI meters. AMR meters provide for self-health check of the meter, data communication using secure and open standard protocols, periodic upgrade of meter software remotely over the transmission network, multi utility metering capabilities, consumption data acquisition and demand management and control. Comparatively, AMI meters or smart meters provide effecting utilisation and management of metering data, automatic management of meters, two-way

communication with meters, demand response capabilities and further provides data to implement energy efficiency practices.

### Smart Meter includes-

(a) **Meter**, which is used to measure the flow of electric power from input to the output terminal.

(b) **LCD Display**, which is used for displaying readings of the parameters that are being metered and

© **Communication**, which is present in modern electricity meters, which is used for one-way or two-way communication of information with the billing utility During 2016-2020, the overall market for electricity meters is expected to grow at a CAGR of 11.5%, with prepayment meters expected to grow more than the overall growth rate, at a CAGR of 15.1%, and smart meters expected to grow at a CAGR of 5.3%. However, the market for meters is expected to witness explosive growth subsequent to 2022, when the proposed civil works for smart cities and smart grids will near completion, paving way for a robust demand for smart meters. Particularly smart meters are expected to see a double digit growth once bottle-necks surrounding the smart grid projects are cleared. Demand for electronic meters dominates the market for meters and will continue due to replacement market for electrochemical and old meters and orders from power utilities. Of this, power utilities account for nearly 90% of the revenue generated from sale of tariff meters. Additionally, due to various initiatives of the Government for efficient utilization of present generation capacity, such as the 'perform, achieve and trade scheme' for high energy consuming industries, panel meters are expected to witness nearly a 12% growth, coupled with energy efficient solution systems. Renewable integration and energy management practices will also fuel the growth of panel meters during 2016-2020.

for more information please visit

Website : [www.hplindia.com](http://www.hplindia.com)



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**Please outline the tangible benefits and your expectations of participation in Elecrama 2018, the biggest showcase of the world of Electricity, especially since the 2018 mega show is slated to be the largest ever?**

**E**lecrama provides an outstanding platform to showcase our latest product offerings and hands-on experience of products and technology in electrical equipment and manufacturing space. It is also a meeting place for the suppliers, consultants and industry experts. Our experience over the last few years has motivated us in a big manner. What also amazes us is that the relevant people from different states and power utilities gather to witness the technological developments, as it is one of the best places to get to the end consumer.



**Mr. Gautam Seth**  
Joint Managing Director  
HPL Electric & Power Ltd.



Elecrama provides a massive platform for showcasing the latest in Technology & Innovation to a huge audience. Please outline in brief the Product range your company will be putting on display, as well as the new Technology & Innovations you wish to introduce.

Elecrama layers the relevant audience for our products and it gives extra mileage to our products in the right segment at the right place. This year we have big plans of introducing our Smart & prepaid meters, Solar Specialty cables and distribution boxes, Energy efficient lighting products, Switchgears range and our brand new MCB range "Osafe".

Please provide a brief outline of your vision for the company's growth & investment plans, in view of the opportunities available in the Electric & Electricals sector in India today.

We see a high potential in electrical metering category in the coming years, where we have a range of smart & prepaid meters. Also, with short term disruptions like demonetization & GST set to reduce, we believe to enhance our opportunities to establish our reach in the market. Government run projects are extremely good platforms for companies like ours and are on growth trajectory and we assume is an opportunity to grow with.



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## LED Lighting



**I**ndia is an attractive market for both domestic as well as international LED players. The reason for this is the benefit that they provide in terms of energy saving and conservation. The new applications which are coming are related to connectivity, better controls, and application of sensors and moving towards wireless technology. When it comes to an individual, what they are looking for is more convenience and comfort, apart from the cost. The efforts towards wireless technology and application of controls which help in controlling the light intensity are things which will benefit them. For a commercial outlet, the

*LED lighting is much more Eco-Friendly and are up to 80% more efficient than traditional lighting such as fluorescent and incandescent lights. What we are seeing is that people are realising these benefits and are moving towards LED lighting realising that. The market has witnessed a phenomenal growth over the past few years and the trend is expected to continue in the coming years. Further, there is an increased focus by the Government towards energy conservation and efficiency, boosting the demand for LED lights. The Government of India has expressed increased interest in converting existing street lights into LED and this is expected to increase demand for LEDs in coming years.*

