

# Smart Energy Meters

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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
- c. 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 bottlenecks 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.

## HPL Electric & Power Ltd Pioneering Metering Space

HPL Electric and Power Ltd an established electric equipment manufacturing company in India, manufacturing a diverse portfolio of electric equipment, including, metering solutions, switchgears, LED lighting and wire & cables, catering to consumer and institutional customers in the electrical equipment



**Table 1: Meters manufacture & categorized based on their end-use**

Domestic application	Industrial Application
Single phase / three phase, whole current counter / LCD type meters	Digital Panel meters
Dual source projection metering solutions	Digital energy meters
Special long range metering solutions	LT Tri-vector meter
Smart metering solutions	Single module meter
Prepayment metering solutions	Multi-function meter
DLMS metering solutions	Load manager and demand controller
RF / Optical port / LPR meters	Power factor control and regulators
	Prepayment metering solutions
	DLMS metering solutions
	Long range integrated metering solutions
	Net metering solutions
	Smart metering solutions

industry. HPL manufacturing capabilities are supported by a large sales and distribution network with a pan-India presence. The company currently manufacture and sell its products under the umbrella brand 'HPL', which has been registered in India since 1975.

The company has one of the widest portfolios of meters in India. It has a whole range of metering solutions with advance communication interfaces like LPRF (low power radio frequency), GSM/GPRS, IrDA, Modbus, Ethernet. In addition, HPL supply 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.

HPL strong research & development capabilities have enabled it to keep it abreast of technological developments in the electric equipment industry. The company's research and development efforts include design and development of all types of energy metering solutions, including interactive communication between metering devices and metering infrastructure that includes AMR and AMI, prepayment metering solutions, solar net metering solutions, smart meters with two way communication and a complete range DLMS compliant meters, amongst others, and technologies and solutions that allow for active monitoring of energy consumption for electric equipment.

The company's portfolio of meters includes single phase, three phase and LTCT/HT energy meters, smart meters, panel meters, prepayment meters (whereby a monetary limit can be set on the electricity

to be supplied to a particular consumer), net metering solutions and transformer metering solutions remote communication facilities. All our tariff meters are certified by the BIS as conforming to the Indian Standards Index.

Set forth in Table 1 are certain meters that we manufacture, categorized based on their end-use, as domestic and industrial.

The market for meters in India was estimated to be ₹ 3,000 crore in fiscal 2015, with organised participants, contributing to over 80% of the total market. There has been a continued and visible shift from demand for traditional meters to demand for metering solutions, which helps in energy management as compared to mere monitoring and billing functionalities. 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 bottlenecks surrounding the smart grid projects are cleared.

The market for electricity meters is growing in India and initiatives of the Government such the Deen Dayal Upadhaya Gram Jyoti Yojna and Integrated Power Development Scheme are expected to give impetus to the meter market. ❶

Credits: HPL Electric & Power