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**SMART  
CITIES**

[www.ul.com](http://www.ul.com)

Founded in 1894, UL is a world leader in certification and conformity assessment services and a global Standards Development Organisation (SDO). We are pioneers in standards development for safety, health and sustainability. It is this market positioning, backed by decades of technical expertise that has helped us provide robust solutions to our clients. We help organisations develop standards using our online Collaborative Standards Development System (CSDS). Organisations benefit from our unique offering of testing, inspection and advisory services that go beyond standard development and encompass implementation of go-to-market compliance mechanisms. In addition, we run a highly effective compliance programme through Follow-up Inspections and Anti-Counterfeiting Operations to keep non-compliant products out of the marketplace.

Our vast experience indicates that we have a body of knowledge to bank on; we use that to help manufacturers and policy-makers across the world manage risks and ensure technological progress through our consulting and training services.

# WHO ARE WE?



## SMART CITIES IN INDIA

As India's population continues to grow, more people will inhabit cities. Specialists predict that about 25-30 people will migrate every minute to major Indian cities from rural areas in search of better opportunities. It is estimated that by the year 2050, the number of people living in Indian cities will touch 843 million! To accommodate this massive expansion, India needs to find smarter ways to manage complexities, reduce expenses, increase efficiency and improve the quality of life. As we move towards building smart cities, we will embrace newer technologies. Through our work over the last 120 years, we have pioneered an approach to address the risk that is inherent in progress. We make new technologies functional, reliable and safe.

# WHAT IS A SMART CITY?

A smart city is one that has universal access to basic services, empowered citizenry that contributes to effective governance and environmental sustainability. At the core, if a city is **Safe, Green and Connected**, it is in a great position to achieve all the goals that lead to it being called a smart city. Social, Physical and Institutional Infrastructure need to come together to make a smart city – our tenets of **Safe, Green and Connected** cut across these pillars and contribute in a multitude of ways towards making a city smarter.



## • Transaction Security

With technology transforming transactions offering greater ease, speed and mobility, it also creates potential security risks. UL provides end-to-end services in the world of electronic transactions ensuring security, compliance and global interoperability within the mobile, payment, e-ticketing and data security sectors. For nearly two decades we have worked with banks, mobile network operators, governments, public transport operators and vendors to help ensure that their transaction technology is trustworthy, compliant with all standards and interoperable, worldwide.

We work on Euro MasterCard Visa (EMV) migration, contactless and mobile payment implementations (NFC/HCE/BLE), data security (PCI, Common Criteria), border control solutions and e-ticketing (AFC) implementations.

### Services include:

Testing & Certification, Test Tools, Advisory, Training, Security Evaluation

## • Interoperability

UL believes the marketplace is clearly heading towards different inherent technologies to function and communicate, and addressing contactless interoperability is vital to facilitate a smart city.

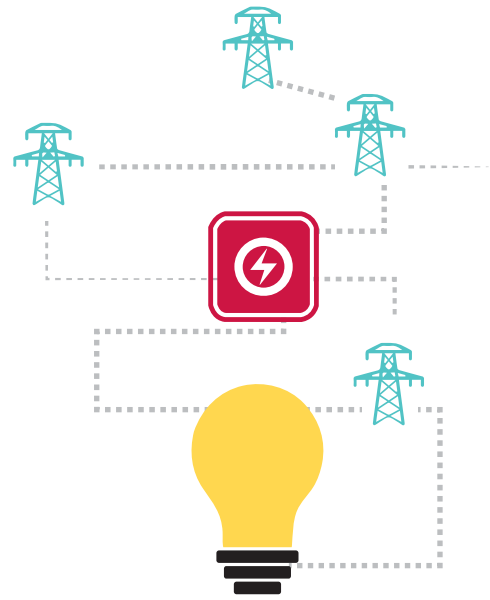
We work closely with companies to verify that their wireless products are compliant, compatible and reliable. With our understanding of new technologies, participation in standards formulation and cross-industry experience, UL with its depth of EMC and wireless industry expertise offers full support and advice to customers, from design concept to product completion.

### Services include:

Environmental Testing (for humidity, dust, temperature, shock, vibration handling), Electromagnetic Interference & Compatibility (EMI-EMC) Tests, Certification for full range of Wireless Technologies – M2M Regulations, Wireless Charging, Cellular Regulatory Conformance, Bluetooth® Compliance



# CONNECTED CITIES



## • Smart Grids

With rising energy issues such as sustainability, renewable sources and greater efficiency, there is heavy emphasis on Smart Grid as one of the key technologies driving an energy revolution. Utility providers, businesses and consumers are empowered alike in managing energy more efficiently with greater control on delivery and consumption. As world leaders in Smart Grid deployment, we are at the forefront of enabling manufacturers to bring their new technologies to the market.

### Services include:

Providing Compliance, Market and Regulatory insights, Certification of Energy Meters to Indian and International Safety and Performance Standards



# SAFE CITIES

## • Safe Products

The wide range of UL's safety, performance and compliance services helps our customers develop safer and superior quality products. UL is dedicated to partnering with manufacturers through the product life cycle. Our services start with design; move through prototyping to functional testing and certification; and culminate with factory inspection, audits and ongoing in-field management. This comprehensive approach supports everything from industrial and energy-related products to commercial and consumer products, from basic materials to advanced components.

### Product Range includes industries such as:

Building Materials, Appliances, Lighting, HVAC, Energy & Power Systems, Medical Devices, Consumer Electronics, Performance Materials, Wire & Cable



## • Safe Buildings

UL's Building Inspection Service demonstrates the strength of vast testing experience, inspection and certification, and thorough knowledge of national and international codes. These inspections result in comprehensive reports that building owners, developers, managers and architects use to identify building compliance gaps and to guide improvements which produced confidence that fire and life safety and security systems will operate properly in the event of a fire.

### Inspections Services include:

Fire Prevention, Life Safety, Fire Protection, Indoor Air Quality, Energy Efficiency Audit

## • Safe Living and Working Environments

The health and safety of people at work are essential for any organisation and the right of every employee. UL's workplace health and safety solutions empower people to protect the well-being of workers, ensure organisational compliance and peace of mind and drive measureable business improvements. We work closely with our customers to understand their business needs, offering software solutions to help improve operational and financial performance through strong health and safety programs.

### Services include:

Learning, Safety Management, Occupational Health, Clinic and Practice



# GREEN CITIES

## Renewable Energy

UL offers a suite of services that helps owner-operators, developers, financiers, EPCs, insurers and manufacturers manage risks associated with building and operating a PV plant or a wind farm. We help manage risks by providing technical information and data for energy yield assessments, technical due diligence and measurements and inspection. Our extensive, flexible service portfolio covers needs that include project planning, construction, ongoing operations and maintenance.

### Services include :

Certification of Components and Systems, Bankability & Insurability Services, Site Assessment & Plant Inspection, R&D Support & Advisory

UL works to advance global sustainability by supporting the growth and development of environment-friendly products, services and organisations. From product and organisational certifications to transparency, we help customers benefit from effective sustainability strategies. UL's expertise and guidance can help transform sustainability initiatives into a platform for growth and market leadership.

### Services include :

Testing of Products to Energy Efficiency Standards and Programmes (Star Labelling under EESL, BEE), Building Assessment for Energy Efficiency under the Energy Conservation Building Code (ECBC), Environmental Claims Validation; GREENGUARD and ECOLOGO Certifications, Advisory and Verification of Products for use in Green Buildings and Sustainable Programmes

## Green Products

## Electric Vehicles

As more electric vehicles and related devices become available, building confidence in the safety of the technology is the key to growing the market. For consumers, the presence of third-party certification is the cornerstone of buying with confidence. UL is working with manufacturers to develop safer EV equipment, and is now recognised as the premier third-party testing organisation for the industry. For EV equipment, the UL Mark delivers peace of mind. And as the electric vehicle industry steadily evolves, UL is helping support growth by using UL Standards for the certification of charging systems and grid connection equipment.

### Certification Services include :

Level 1, 2 & 3 Charging Systems, Supply Equipment, Functional Safety at Component and ECU levels

