



LIVING THE PUBLIC SAFETY MISSION

How UL is helping ensure public safety in India



ABOUT UL

UL fosters safe living and working conditions for people everywhere through the application of science to solve safety, security and sustainability challenges. The UL mark engenders trust, enabling the safe adoption of innovative new products and technologies. Everyone at UL shares a passion to make the world a safer place. We test, inspect, audit, certify, validate, verify, advise, and train. We support these efforts with software solutions for safety and sustainability.

To learn more about us, visit [UL.com](https://www.ul.com)

ADOPTING A SAFETY- CENTRIC APPROACH TO PROGRESS

India's Evolving Public Safety Demand

India is currently witnessing unprecedented growth in nearly every sphere of its rapidly burgeoning economy. Often, however, the growth has traded speed for safety – leading to long-term, far-reaching consequences.

Among the many hazards identified in Indian infrastructure, roads are nearly unanimously recognized as the worst. Several reports have ranked Indian roads among the most unsafe in the world. Thus, road safety has emerged as one of the most serious public safety challenges in India, with fire and electrical safety close behind.

If India is to achieve its dream of becoming a global super power, it has to first realize that it must adopt globally accepted best practices in safety. However, this is one area where the country has long struggled to make adequate progress – not only in terms of forging a comprehensive regulatory framework, but also in terms of implementing it. With globalization being a stark reality, which is as much an opportunity as a threat, India must support its developments with sturdy safety standards that are at par with the strongest in the world.

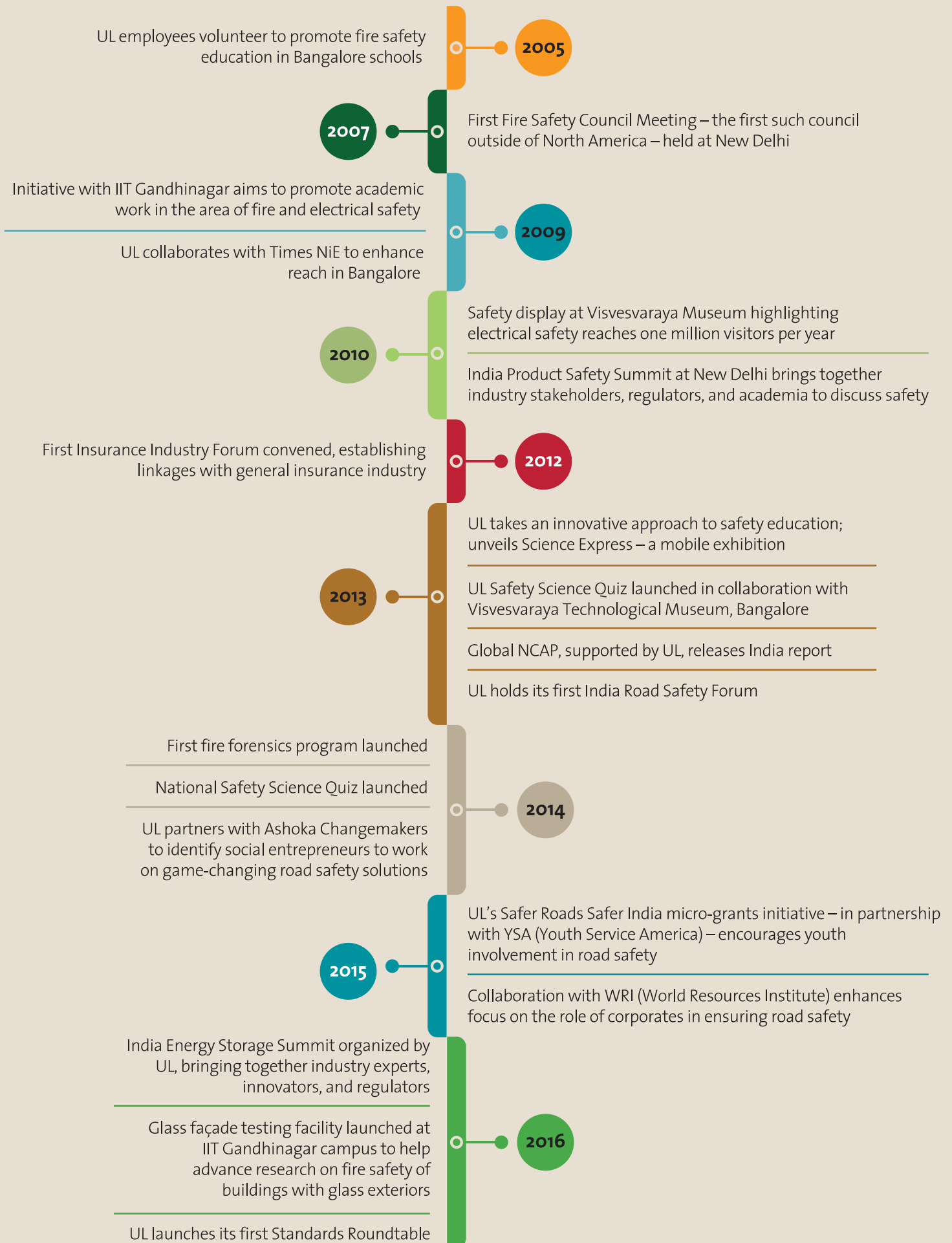
UL's Vision to Fulfill these Needs

UL, being a global leader in safety science, is committed to its mission of promoting safe working and living conditions across the world. The company partners with manufacturers, retailers, trade associations, and governing authorities to conduct scientific research and develop standards that address an extensive range of safety issues.

In India, since safety awareness starts with young people, UL is focusing on building a safety-centric culture in schools. By seeding safety with the younger generations, safer, better practices will gradually seep into the everyday lives of people.



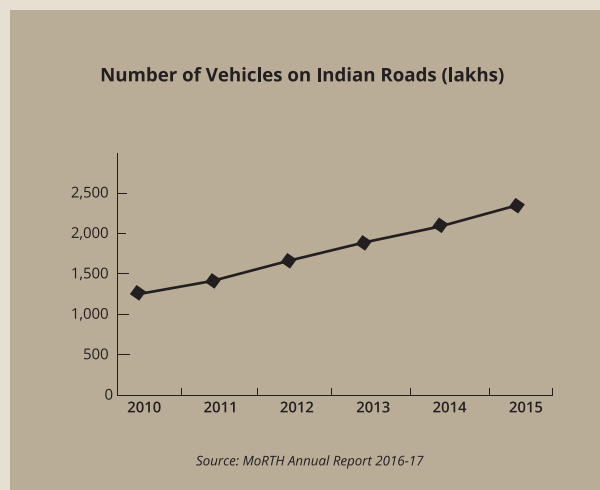
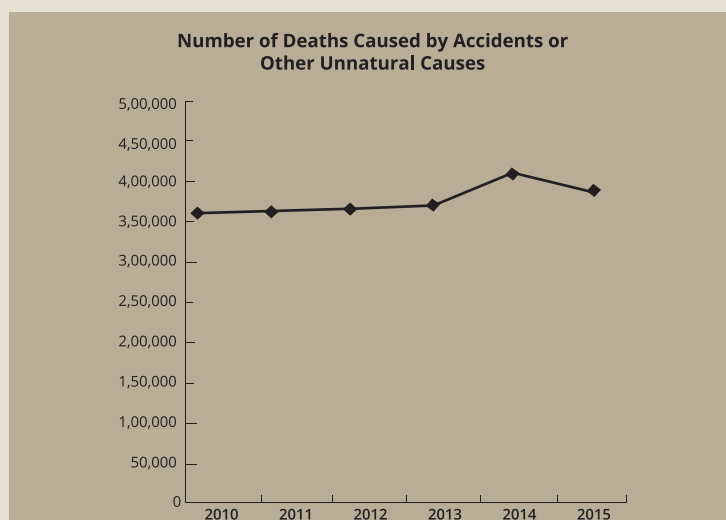
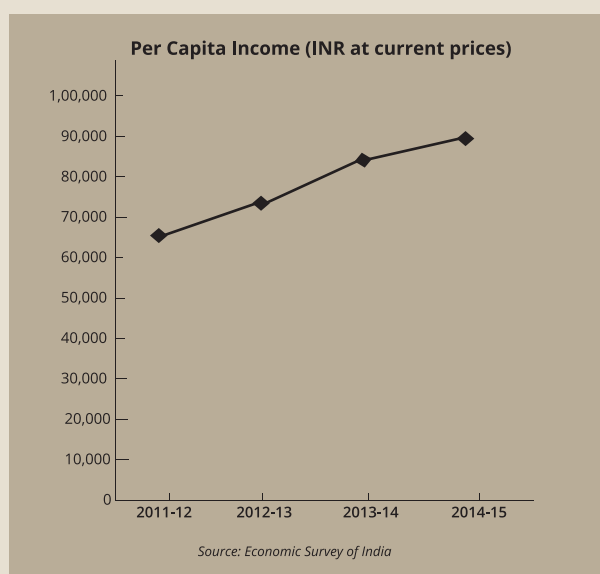
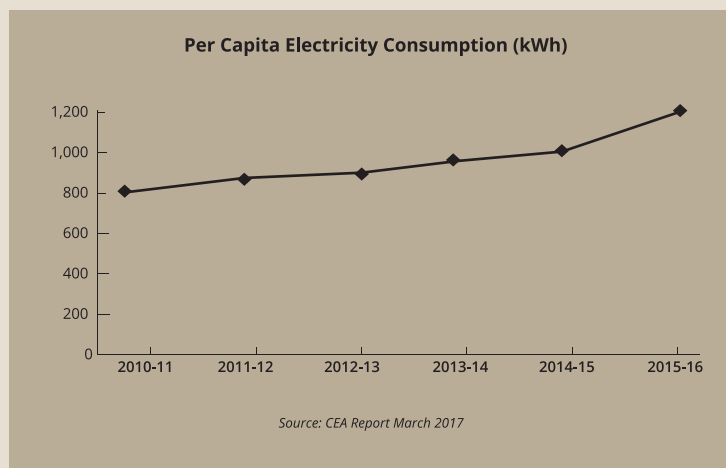
OVER 10 YEARS OF SAFETY MISSION IN INDIA



ANALYZING THE SAFETY CHALLENGES

Public Safety: The Numbers Today

India is witnessing rapid urbanization – its overall population currently stands at 1.3 billion*, and its urban population is projected to grow by 50% to about 850 million by 2051**. This brings with it several related challenges such as the demand for better infrastructure. Therefore, the country is in need of sound, efficient, and effective policies more than ever to ensure sustained progress.



Major Causes of Accidental Deaths (due to unnatural causes) in 2015

Cause	Deaths
Structural collapse	1,885
Drowning	29,822
Electrocution	9,986
Accidental explosion	831
Falls	1,6759
Factory/machine accidents	695
Accidental fire	17,700
Traffic accidents (rail & road)	17,7423

Source: NCRB Report 2015

*Source: <http://data.worldbank.org/indicator/SP.POP.TOTL?end=2015&locations=IN&start=1997>

**Source: Urban Statistics Handbook



TURNING THE NUMBERS AROUND: UL'S STRATEGY

UL's public safety efforts follow a four-pronged approach that focuses on Safety Smart[®], Safety Science, Safety Conversations and Safety Standards.

Safety Smart[®]

Since more than 50% of India's population is under the age of 25 years, UL believes that the most effective way to achieve a long-term impact is to engage young people and nurture them to think innovatively. Therefore, UL focuses extensively on spreading safety awareness among young people and on promoting safety leadership through experiential learning opportunities. Through such efforts, UL aims to build an ecosystem of safety that can aid India's sustainable growth.

Safety Science

UL believes in basing strategy on a strong, scientifically sound foundation to ensure consistency in implementation. Therefore, it does considerable research to identify robust safety solutions. It partners with leading research and training institutes to promote the development of safety science. The aim of this approach is to build a knowledge base that will help shape an effective public safety strategy as well as locally relevant solutions.

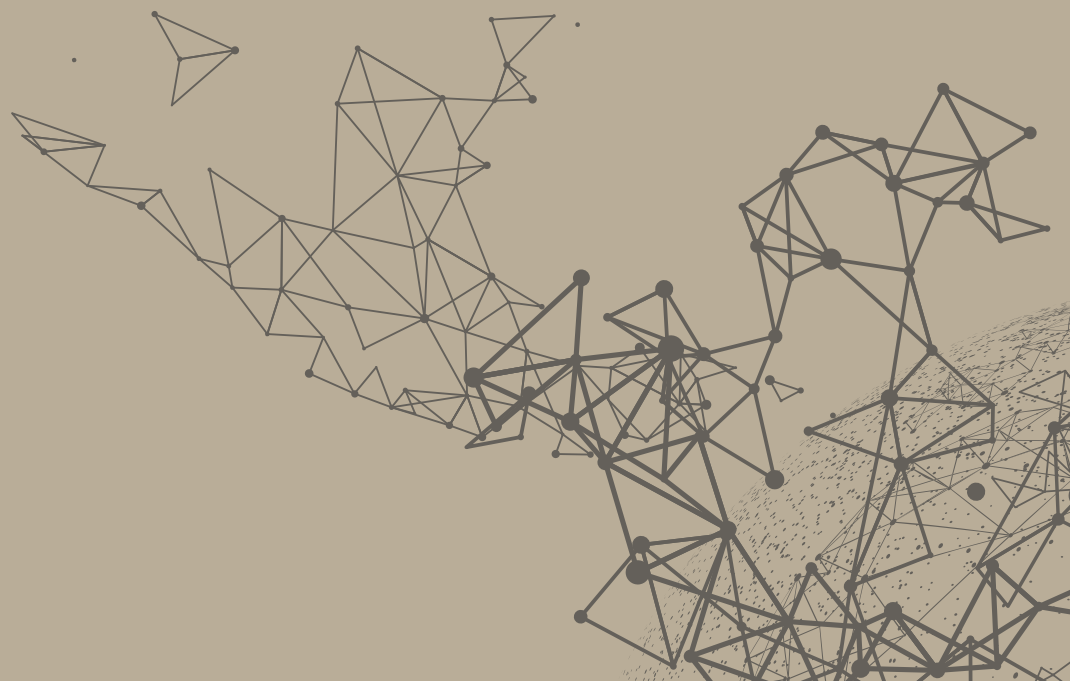
Safety Conversations

UL works with several stakeholder communities and advocacy groups to discuss rapidly evolving safety challenges and initiate action on issues that require urgent attention. It brings thought leaders from various government and industry verticals together to engage them in discussions on strategies to advance safety.

Safety Standards

UL's prime focus is on the continued analysis and development of quality assurance practices and safety standards. It is dedicated to promoting studies on the effects of various new technologies on everyday life. UL also helps manufacturers and retailers conduct thorough checks to ensure output of the highest possible quality. This not only aids better risk management but also the development of products that are safe, sustainable, and compliant with globally accepted regulations.

Moreover, as a part of its "India for India" strategy, UL is involved in several technical committees formed by various ministries of the federal and state governments. Through these forums, UL shares its global expertise with policy makers and guides them to create locally relevant standards that are in line with global norms.



ACHIEVEMENTS IN 2016

As a company deeply passionate about safety, UL invests substantial resources in advancing public safety in India. UL's work can be broadly categorized into four key areas:

Safety Smart®

UL partners with many leading organizations to promote safety education among young people in the age group of 5–25 years. It firmly believes that in India, the youth hold the key to addressing nearly any problem as it constitutes the largest chunk of the country's population.

Safer Roads, Safer India:

UL collaborated with Youth Service America (YSA), a global non-profit organization, for the second year in a row to encourage youth engagement in road safety.

According to World Health Organization (WHO), globally, over 500 children die on roads everyday. India alone loses six lives under the age of 25 to road mishaps every hour. UL decided that the youth, who constitute the demographic that is so adversely affected, should be empowered to help solve the road safety challenge in India.

The Safer Roads Safer India (SRSI) program was initiated in 2015 across four major cities – Bangalore, Mumbai, Pune, and Delhi. This year, the program extended to Ahmedabad. SRSI provides micro-grants and capacity-building training to selected teachers and youth to help them lead projects aimed at improving road safety at a community level through youth engagement. The program involved about 50 teachers and youth volunteers this year.

Selected volunteers worked on 4-month projects to improve road safety in their communities. They collaborated with various road safety stakeholders such as schools, NGOs, traffic police, and other city authorities.

About 90 micro projects have been supported since the initiative was launched in 2015.

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“I thank both UL and YSA for providing me with this fabulous opportunity to work for a humanitarian cause. I am confident that this initiative will lead to a positive reform in the country in terms of changes related to road safety.”

– Nagarjun Reddy, Student, R V College of Engineering, Bengaluru

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“The Safer Roads, Safer India initiative provided us with a platform to help our students actually apply in day-to-day life what they learn in the classroom. It convinced them about the significance of following safe road practices, and thereby they could spread awareness among others too. Conducting road safety audits and road safety drives in the vicinity of the school and interacting with the local administration and traffic police officials were amazing learning experiences for students and teachers as well.”

– Poorna Vidwans, Principal, New India High School, Pune

National Safety Science Quiz:

UL, in partnership with leading English news channel NDTV, sponsored the National Safety Science Quiz (NSSQ), its unique national quiz property that highlights public safety issues, for the third consecutive year in 2016. The quiz also encourages children to identify and understand the everyday public safety issues around them, and to deliberate on safety solutions with safety organizations and other stakeholders. This year's quiz was themed "Safety in Everyday Life," and it attracted entries from 250 schools across New Delhi, Kolkata, Mumbai, Bangalore, and Chennai.

Six teams – Delhi Public School (Gurgaon), L.S. Academy (Kolkata), I.E.S. Modern English High School (Mumbai), Sindhi High School Hebbal (Bangalore), C.V.A. School (Chennai), and D.A.V. Boys School (Chennai) – battled to win this year's quiz.

And the winners were:

- **C.V.A. School Chennai (champions)**
- **D.A.V. Boys School Chennai (first runners up with a cash prize of INR 30,000)**
- **L.S. Academy Kolkata (second runners up with a cash prize of INR 20,000)**

The champions won a 4-day trip to UL Taiwan, where they visited our cutting-edge laboratory.

While the quiz in itself reached about 300 schools, the collaboration with NDTV provided UL with access to an audience of 2.4 million people across 1.12 million households.

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“I really like quizzing, and I chose NSSQ because it's the first time I came across the topic of safety science. I thought this will be a good experience in learning.

– NSSQ 2016 Participant, C.V.A. School Chennai

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“I think it's a very important part of child education because academics is important, but this is a life skill...I think safety science is a very important chapter, it should be introduced in books...it'll be an excellent idea.”

– Teacher, NSSQ 2016

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“Quizzes are so much fun. And just being in the quiz, just being a listener itself is so much of a learning experience. After seeing the quiz, I believe that safety as a concept needs to be more emphasized, may be introduced as a separate section in one of the subjects like Social Science.”

– Parent, NSSQ 2016

Safety Science

UL partners with research and academic institutions to create safety science that can be locally tested, replicated, and easily implemented.

Corporates for Safer Streets:

UL worked with World Resources Institute (WRI), a global think tank, to study the accident data compiled by the Bangalore Metropolitan Transport Corporation (BMTC) and Brihanmumbai Electric Supply and Transport (BEST) Undertaking, the local bus services in Bangalore and Mumbai, respectively, between 2008 and 2012 to analyze how corporate organizations can play a role in understanding the causes for road fatalities and developing effective solutions to reduce them.

Two pilots are now being implemented to enhance bus infrastructure, accident reporting, and driver training practices. The collaboration with WRI is ongoing and will soon expand to bus networks in other cities across India.

UL and WRI also facilitated a discussion on the role of corporates in improving road safety, involving close to 40 companies. The talk covered the need to adopt road safety practices, build safe infrastructure, and set standards in office campuses. The partners aim to establish a forum for corporates to share best practices and work toward a standardized system of preventive and response mechanisms.

UL also supported WRI's launch of a toolkit for its "Streets for All" campaign, an initiative that encourages inclusive street design. The toolkit is designed to be a guide for authorities looking to launch a "Streets for All" movement in their city.



"The accident analysis has actually helped us in making decisions that will help us improve the training processes that we follow and removing anomalies in the vehicles that will ultimately help us in reducing accidents. We are keen to implement solutions that will ultimately improve road safety, we are committed to the India Vision Zero, and we need visionary partners like WRI and UL to continue their support and guidance."

– Mr. Victor Nagaonkar, Officer on Special Duty, BEST, Mumbai

National Report on Road Safety:

About 140,000 people were killed in road accidents in India in 2015. However, there is a wide margin of variance in the data reported by different sources. Recognizing the need to study the various data sources and develop an accurate analysis of the real burden of road mishaps, UL partnered with premier medical institution National Institute of Mental Health & Neuro Sciences (NIMHANS) in Bangalore. This collaboration resulted in the launch of a national report titled “Advancing Road Safety in India: Implementation is the Key” on May 12, 2017.

UL hopes that this national study will aid the development of a wholesome perspective on the problems faced by the country in preventing road accidents and recommend data-driven steps to advance road safety.

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“I am happy that in collaboration with UL, NIMHANS has brought out this much-needed comprehensive report on road safety, which will serve as a useful resource to advance the road safety situation in India. This evidence-based road safety report can be used by policy makers, road safety professionals, health managers, and researchers, and is a wake-up call for all of us to act. I wish them all the best!”

– Dr.B.N.Gangadhar, Director, NIMHANS



Dealing with Fire in Glass Facade Buildings:

UL partnered with the Indian Institute of Technology (IIT) Gandhinagar, a premier Indian technology institute, to execute an innovative study on the impact of fire on buildings with glass facades. The objective of the study is to highlight the need for performance-based codes and the alignment of norms governing fire safety with country-specific standards.

The live testing took place at UL's eighth Annual Fire Safety Council (FSC) at IIT Gandhinagar, Ahmedabad. The event, which replicated real-world scenarios, was implemented with a fire load that is compliant with National Building Code specifications. The experiment measured and recorded crucial data on how fire spreads within glass buildings.

The collaboration with IIT Gandhinagar is ongoing, and it aims to encourage young students to study safety challenges and devise innovative solutions. The "Safety Center" at the college campus is steadily evolving into a center of excellence in India.

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"Today, most standards that we have for buildings, high rises or others are prescriptive in nature. With the push globally on performance-based design, UL and IIT Gandhinagar collaborated to build an actual high-rise structure to simulate how a fire can spread in a building... Through this simulation, we noticed a leapfrog-like action of fire from one storey to another from outside the facade of the building. With this unique testing facility, we are now able to simulate various fire scenarios that a glass facade building might see in its lifetime. We will now be able to expect the unexpected."

— Gaurav, Assistant Professor, IIT Gandhinagar

Safety Conversations

UL brings together various stakeholders, advocacy groups, and authorities across communities to discuss evolving safety challenges and prioritize urgent points of action.

Fire Safety Council:

The Fire Safety Council (FSC) was held in December for the eighth successive year with the objective of encouraging industry experts and regulatory bodies to advance the conversation on fire safety.

The UL South Asia Fire Safety Council, the first UL Council outside of North America, was established in India in 2008. The objective was to provide a neutral forum to discuss fire safety, taking into account unique local situations. The council has evolved over the years into a forum that discusses several issues ranging from technological advancements to the challenges of regulations and their implementation. Through this forum, UL has been able to initiate locally relevant advancements in fire safety.

Services such as market surveillance, building inspection, and specialized training were launched in response to the demand that emerged from the council discussions.



India Energy Storage Summit:

The use of lithium-ion batteries and other energy storage technologies requires the stringent implementation of safety standards and best practices to avoid large-scale, long-lasting catastrophes.

UL held its first ever India Energy Storage Summit (IESS) with thought leaders from the industry as well as the government to discuss evolving battery technologies and the need for safety during their deployment. Experts across the battery supply chain discussed the current state of battery safety and explored potential areas of collaboration to further safety in this field.

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“We need to adopt standards so we can effectively and more safely deploy these technologies in India and grow them in a sustainable way, but at the same time, by adopting these standards, actually Indian manufacturers can find a quicker entry into the global marketplace.”

– Dr. Rahul Walawalkar, India Energy Storage Alliance (IESA)





Safety Standards

UL works with government as well as industry bodies to further the agenda of developing and implementing safety standards.

Facilitating a Robust Quality Ecosystem Built on Standards:

As India is rapidly working toward becoming an aggressive competitor in the global manufacturing industry, it is imperative for the country to match global quality standards. Better standards need to be set and implemented not just to increase exports but also to compete with imports from the global economy. UL facilitates an annual Standards Roundtable to highlight the importance of focusing on standardization as a key business imperative that has a direct and strong impact on the economy.

In 2016, UL collaborated with leading industry associations and organized a closed-door roundtable discussion for the first time in India. The event, “Make in India – Path to ZED: Standards as an Enabler,” encouraged participants to dwell on the need to develop a strong ecosystem for quality in India. The conference brought to light the importance of centering business processes on robust quality standards to bring India to par with global manufacturers.

NEXT STEPS

What does The Road Ahead Look Like?

UL wants to streamline its approach in all its four areas of focus, adopting the following strategy:

Prioritizing Needs:

It aims to select problem areas that have high public safety implications and require urgent action.

Leveraging its Expertise:

It will focus on safety science areas where it can make an immediate and lasting impact, those in which it has ready expertise based on 123 years of safety thought leadership.

Achieving Meaningful and Measurable Outcomes:

The company wants to invest in strategies that not only produce short-term measurable results, but also create long-term meaningful change.

Developing Scalable Solutions:

It aspires to develop tested solutions that are scalable, replicable, and sustainable.

UL aims to continue developing locally relevant knowledge by sustaining its collaborations with academic and research institutions. It is committed to promoting a safety culture within schools not only through high-reach programs, but also by creating self-sustaining models that will continue to advance safety awareness and action. UL aims to sustain its efforts toward influencing national policies and aiding the development of safety standards, while building impactful relationships with the government, industry bodies, and innovators.



A NOTE FROM THE VPs



“We have a wonderful, dedicated team in India, and the leadership here is committed to collaborating with government, industry, and consumer advocacy groups to provide safer living and working environments for its people. With our focus steadfast on promoting safety science through research and education, initiatives are being undertaken in road safety, fire, electrical, and standards so that we can work toward balanced progress. Although there is still much to do, I am very proud of the progress we have engineered together, and look forward to continuing the advancement of public safety in India.”

– Clyde Kofman, SVP & Chief Operating Officer



“As a global leader in safety science, UL is eminently positioned to contribute to improving the public safety scenario in India, which requires urgent attention, as the National Crime Records Bureau (NCRB) statistics reveal. Along with strong institutional frameworks, locally relevant safety standards, and effective compliance, we also need to address enhanced public awareness and a responsible attitude. To this goal, UL has been actively collaborating with the authorities, regulators, industry, academia, the media and others, and is looking for support and engagement from other similar organizations.

The foundational work executed so far and the progress achieved by UL over the last several years has been very encouraging, giving us the confidence to say that a safer India with improved public safety metrics is definitely within our reach in a decade from now. This needs coordinated and collaborative work among the various stakeholders. UL is committed to being a serious contributor to this effort.

– R.A.Venkitachalam, VP, Public Safety



BANGALORE

Kalyani Platina, 3rd Floor,
Block I, No.24, EPIP Zone,
Phase II Whitefield,
Bangalore - 560 066
India

HARYANA

A-12, Infocity, Sector 34
Gurgaon,
Haryana - 122 001
India

MUMBAI

No. 102, 1st Floor,
"Platina", Plot No. C-59,
G Block, Bandara
Kurla Complex,
Mumbai - 400 051
India



Tel: 91 80 4138 4400
Fax: 91 80 2841 3759
Email: sales.in@ul.com

Tel: 91 124 4215 706

Tel: 91 124 4698 100
Fax: 91 124 4698 110