
eTECHnxt
#changethepowergame
the future comes only in two flavours
innovate | perish
ieema
your link to electricity
ELECRAMA
we are all about electricity
10-14 MARCH 2018
INDIA EXPO MART
GREATER NOIDA, NCR, INDIA

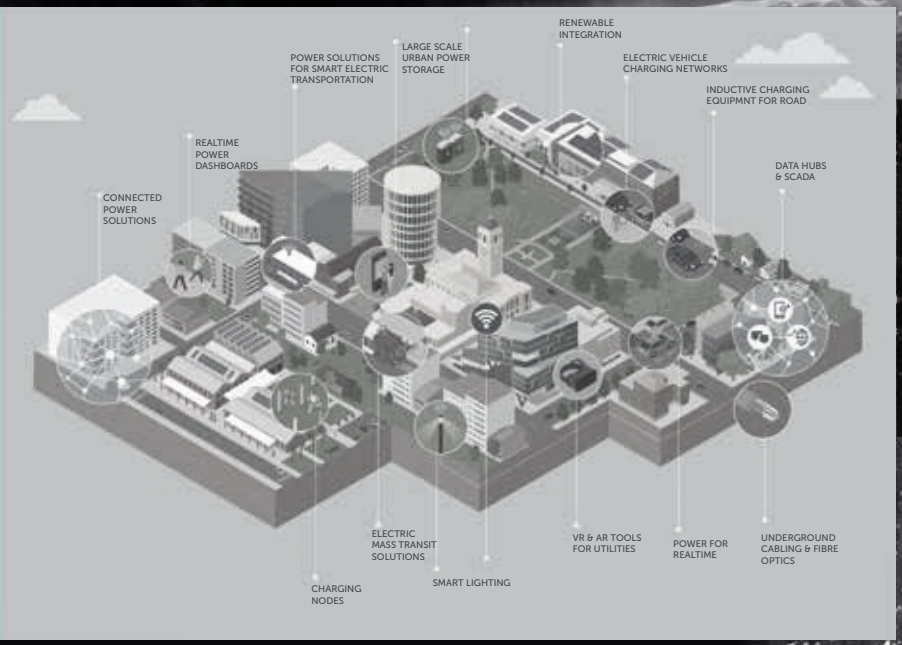

disruption
digital divide
and deliverance
app cabs vs taxis
net movies vs cinemas
lodging app vs hotels
e-commerce vs retail
microblogging vs media
cars vs uevs
technology leads
the transformation
of the landscape
so what disruptive transformation is
in store for the electrical industry
and how is it going to impact the
industry?

India
at the digital threshold

India is rapidly transforming. Aspirations are evolving faster than before. A recent report by Morgan Stanley, a financial services firm, projects India's GDP to cross US$ 6 trillion by 2027. Winds of change are in motion.

The Electricity domain is getting intertwined with digital/internet tech (including IoT & AI), Industry 4.0, energy storage, transportation electrification & evolution of next gen consumer behavior. This is driving the metamorphosis of the Industry.

Globally new value in trillions of US$ is expected to be created, globally and India shall be among the "new value" creation hotspots.



'electech'
electricity delivered by technology

- What's the future of the **Indian Electrical & Electronics Industry**?
- How should it **innovate, transform & grow**?
- On which **business areas** should focus be intensified?
- Which are the **key obstacles** & **threats?**

IEEMA & ELECRAMA
present

eTECHnxt

#changethepowergame

deciphering the 'electech' future through
discussions & dialogues
startups - display & demonstration
student innovation showcase

featuring
technology leaders & innovators
students, startups & incubators
and the
electrical industry ecosystem

Message from the Convener

CONVENER

Mustafa Wajid

Convener,
eTechNxT

Chair,
IET Communities
Committee,
South Asia

Chair,
IEEE LVDC Forum

Member,
IET Power Engineers
Panel

CEO,
Meher Energy
Ventures Pvt. Ltd.

eTechNxT – The Electrical & Electronics Industry's Pathfinder

India is rapidly transforming. Aspirations are evolving even faster.

A recent report by Morgan Stanley, a financial services firm, projects India's GDP to cross US$ 6 trillion by 2027.

What will be the future for the Indian Electrical & Electronics Industry? How should it innovate, transform & grow? On which business areas should focus be intensified? Which are the key obstacles & threats? These are, among several key questions that need answers.

Winds of change are in motion. The Electricity domain is getting intertwined with digital/internet tech (including IoT & AI), Industry 4.0, energy storage, transportation electrification & evolution of next gen consumer behavior & is thus set to undergo a metamorphosis.

New value is thus expected to be created, globally, in trillions of US$. India shall be among the "new value" creation hotspots. The Electrical & Electronics Industry in India thus has many new opportunities.

eTechNxT is an IEEMA led initiative that will be launched at ELECRAMA 2018, & is designed to be a pathfinder for the industry.

eTechNxT as a platform is supported by key partner organisations, namely IEEE, IET, India Energy Storage Alliance (IESA), India Electronics & Semiconductor Association (IESA), NASSCOM IoT CoE, Society of Indian Automobile Manufacturers (SIAM), SMEV & TiE.

This is a unique confluence of thought leadership from diverse industry segments.

Involving yourself in the eTechNxT movement is a key to accessing future opportunities.

Engage. Be there. Smell the future!

why

Create a co-creation platform for collaborative engagement between IT, Telecom, Energy Storage, Electric transportation

Engage the electrical industry with the rapidly evolving "startup ecosystem" in India & thus kick start the concept of "new value co-creation

Engage with engineering students, academia & researchers to promote new thinking & high quality innovation, development of new ideas/concepts as well as high quality sustainable innovation

Showcase technologies & innovations and give a perspective of the future & enable thought leaders to interact with industry leaders & visitors

Enable Policy makers, Professionals, Indian industry & IEEMA members to plan future direction & growth

who

This platform is a first-of-its kind coming together of thought leadership from diverse industry segments to form a unique cross-industry platform. The collaborators are IEEE, IET, India Energy Storage Alliance (IESA), India Electronics & Semiconductor Association (IESA), NASSCOM IoT CoE, Society of Indian Automobile Manufacturers (SIAM), SMEV & TiE.

eTechNxT activities are overseen & broadly managed by a committee constituted by IEEMA & involves the leadership of all the above activities, representatives of partner organisations in addition to nominees from ELECRAMA & IEEMA

how

Digital Transformation of Power Delivery

Chair – Dr. Kannan Tinnium – Technology Leader, GE Global Research
Co-Chair – Mr. Akilur Rahman, CTO, ABB India.

Energy Storage Systems

Mr. Atul Arya, Head – Energy Division, PANASONIC;
Co-Chair – Mr. AS Subramaniyan, General Manager, SIEMENS

IoT, AI & Electricity

Chair – Dr. Rishi Mohan Bhatnagar, President, AERIS Comm. Inc.
Co-Chair – Mr. Vikram Gandotra, General Manager, SIEMENS

eTransportation

Chair – Dr. Jaijit Bhattacharya, Partner, KPMG;
Co-Chairs – Dr. A. Naikodi, Head – E&E, MAHINDRA Electric Mobility;
Dr. Rahul Walawalkar, Executive Director, IESA;
Mr. DVS Subramanyam, Sr. DGM, LARSEN & TOUBRO.

Startup Forum

Chair – Mr. A. Tiwary, Chairman IoT Forum, TiE
Co-Chair – Mr. S. Malhotra, CEO, NASSCOM IoT – CoE

Engineer Infinite Technology Conference

Chair – Dr. S. Mukhopadhyay IEEE Delhi Section;
Co- Chair – SK Soonee, Advisor, POSOCO;
Technical Program Chair – Dr. Bhim Singh, IEEE Delhi Section.

Digital Transformation of Power Delivery

CHAIR

Dr. Kannan Tinnium
Technology Leader,
GE Global Research

CO-CHAIR

Mr.Akilur Rahman,
CTO - ABB India

With the development of new technologies, the electric power grid across the world is undergoing a massive transformation. Many types of renewable energy sources (especially Wind & Solar) have significantly penetrated the grid, and now with the advent of distributed generation & microgrids, energy storage and electric vehicles, the grid is becoming more and more complex. Handling the intermittent power from Wind and Solar, maintaining grid reliability and stability and accommodating bi-directional power flow from distributed power and electric vehicles are some of the key challenges.

On the other hand, significant technology developments have taken place over the last decade in the areas of sensing, communication, data management and data analytics. The convergence of physical and digital innovations coupled with technology advances in energy systems has begun to drastically impact the ecosystem. The future of the power ecosystem will include more electrification, (Centralized & Distributed) and more digitization. New players coupled with new business models will emerge in order to address the challenges of balancing the fuel mix, integrating new technologies and maintaining physical and cybersecurity. This will present unprecedented opportunities to multiple stakeholders.

The objective of this track is to showcase the physical-digital innovations that would help transform the electricity ecosystem.

The following are the themes in this track.

1. **Digital Power Plants/Farms** - Increased availability/reliability/throughput
2. **Digital Power Evacuation** – Efficient delivery of power to the grid
3. **Digital Grid** - Resiliency, Enhanced reliability/efficiency of T&D systems
4. **Digital Microgrids** - Reliable and efficient operation of microgrids
5. **Digital Home/Building Energy Systems** – Enabling effective energy utilization
6. **Digitization of Assets** - Maximizing Asset Life and Utilization across the ecosystem
7. **Cyber security** – Securing the system operation and power delivery

Energy Storage Systems

CHAIR

Mr. Atul Arya,
Head – Energy Systems Division, PANASONIC India

CO-CHAIR

Mr. A.S Subramaniyan,
General Manager - Strategy, Energy Management Division, Siemens.

Energy generation and consumption chain has witnessed very large transformations due to urbanization, industrialization, transportation & lifestyle changes. Our energy needs and usage patterns have created needs for concentrated energy guzzlers like cities and industrial estates,T&D networks, large power plants running on coal, gas, nuclear.

Depleting fossil fuels and global warming served as wakeup call and we are looking back towards Sun and Wind. "Distributed Generation" becomes necessity as these resources are ubiquitous in nature and can't be transported or concentrated like fossil fuels in one place. Intermittence, unpredictability and variability are creating stress for the electrical networks and Sun's duty hours don't really matchup to our consumption patterns.

Energy Storage is magic bullet for these and there has been a lot of work around it for a long time. However with rising share of Renewables in the energy basket, electric mobility, growing urbanization there is a renewed impetus on this and a large amount of scientific attention is being aimed towards it. Technologies in use for few decades are Pumped Hydro, Fly wheel, Compressed Air, Batteries and Super capacitors

In this track the key themes being addressed / showcased are linked with current issues and potential issues brewing up in INDIA.

- **Diesel free power generation**
- **Micro grid**
- **RE Integration**
- **Grid Stability**

IoT, AI & Electricity

CHAIR

Dr. Rishi Mohan Bhatnagar, President, AERIS Communications Inc. India

CO-CHAIR

Mr. Vikram Gandotra, General Manager, Smart Grids Business Strategy, Siemens Ltd

With the development of new technologies, the electric power grid across the world is undergoing a massive transformation. Many types of renewable energy sources (especially Wind & Solar) have significantly penetrated the grid, and now with the advent of distributed generation & microgrids, energy storage and electric vehicles, the grid is becoming more and more complex. Handling the intermittent power from Wind and Solar, maintaining grid reliability and stability and accommodating bi-directional power flow from distributed power and electric vehicles are some of the key challenges.

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The following are the themes in this track.

- **Using IOT for electricity networks** - Self healing networks
- **Impact of IOT on utility** - impacted, disrupted or transformed
- **Wireless charging for large scale applications**
- **Telecom and electricity intertwined** - electric network to carry data & communication
- **Complete smart grid and deep analytics for Ajmer smart city** - A pilot case study
- **Solar panel monitoring and improved efficiency of solar panels** - A startup perspective

e Transportation

CHAIR

Dr. Jaijit Bhattacharya, Partner, KPMG

CO-CHAIRS

Dr. A. Naikodi, Head – E&E, MAHINDRA Electric Mobility

Dr. Rahul Walawalkar President & MD, Customized Energy Solutions (India)

Mr. DVS Subramanyam Sr DGM Sales & Marketing (Industrial Automation) Larsen & Toubro Limited

To intensify participation by Indian Electrical & Electronic companies in the upcoming technology & business opportunities in electric vehicles with specific focus on

- Energy Systems (Batteries, Battery packs, Battery swapping and Battery Management Systems)
- PowerTrain (On-board Chargers, DC-DC Converters, Motor Controllers, Motors, Wiring Harnesses & Protection equipment)
- Charging Products & Infrastructure, Grid Power Interface,
- EV Specific Diagnostics and Prognostics

To engage with government, policy makers & regulatory authorities & play a role in **evolving an "Indian industry centric" policy & strategy for developing the supply chain, standards & regulatory mechanisms** (such as modification of IE Rules etc.,) needed for achieving the PM's vision of 100% electric mobility by 2030.

Transition from current technology to 100% electric mobility may involve infrastructural challenges that call for deployment of "interim" technologies such as hybrids to play a role. **Alignment of the Electrical & Electronics Industry with the automotive industry during such a transition phase** shall be a focus area.

To engage the Electrical & Electronics Industry with the players in the domain of **Intermediate Public Transportation (IPT)**, so as to define the technologies & business paths the industry should adopt to serve this segment.

To evolve thoughts & strategies on **mitigating risks of "Lithium dependence"**. Apart from securing lithium supplies it is necessary to also evolve policies/strategies for re-using such batteries for other energy storage applications as well as develop a strong battery recycling capabilities within India.

To provide a platform for exchange of new ideas relating to various types of transportation electrification… some examples being **"Electric Highways","Hyperloop", "Flying Taxis"** etc. & their prospective application in India.

Policy perspectives in terms of (a) skill development in EV technology, (b) mandatory transition of public vehicles into electric through a predefined timetable, (c) mandatory charging stations in all new apartment complexes and institutional buildings, (d) all new parking infra to mandatorily support charging, (e) adoption of equivalent of ITDM in defence procurement for procurement of EV by governments etc

Startup Forum

CHAIR

Chair – Mr.Arvind Tiwary, Founder, SangEnnovate

CO-CHAIR

Mr. Sanjeev Malhotra CEO, IOT Centre of Excellence - Nasscom

In today's India, it is the start-up community which is at the forefront of innovation. Many new ideas, and breakthroughs have come about and will continue to flow in from this segment of the industry.

It is lean, new, agile and ready to adapt. This nature of start-up function is very important of the world of energy and electricity as it moves towards a convergence with newer technologies.

The is where eTechNxt comes in, it gives innovative start-ups a much needed platform to showcase and discuss their work which will redefine the future energy ecosystem.

At eTechNxt, you will meet around 30 such agencies with their prototypes and exhibits, raring to get into a dialogue and envision a future convergence with students, industry leaders and visionaries.

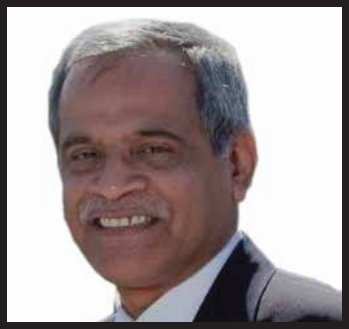
This showcase will be jointly powered by IEEMA, TIE-Global and NASSCOM.

Engineer Infinite

CHAIR

Dr. Subrata Mukhopadhyay, IEEE Delhi Section

CO-CHAIR



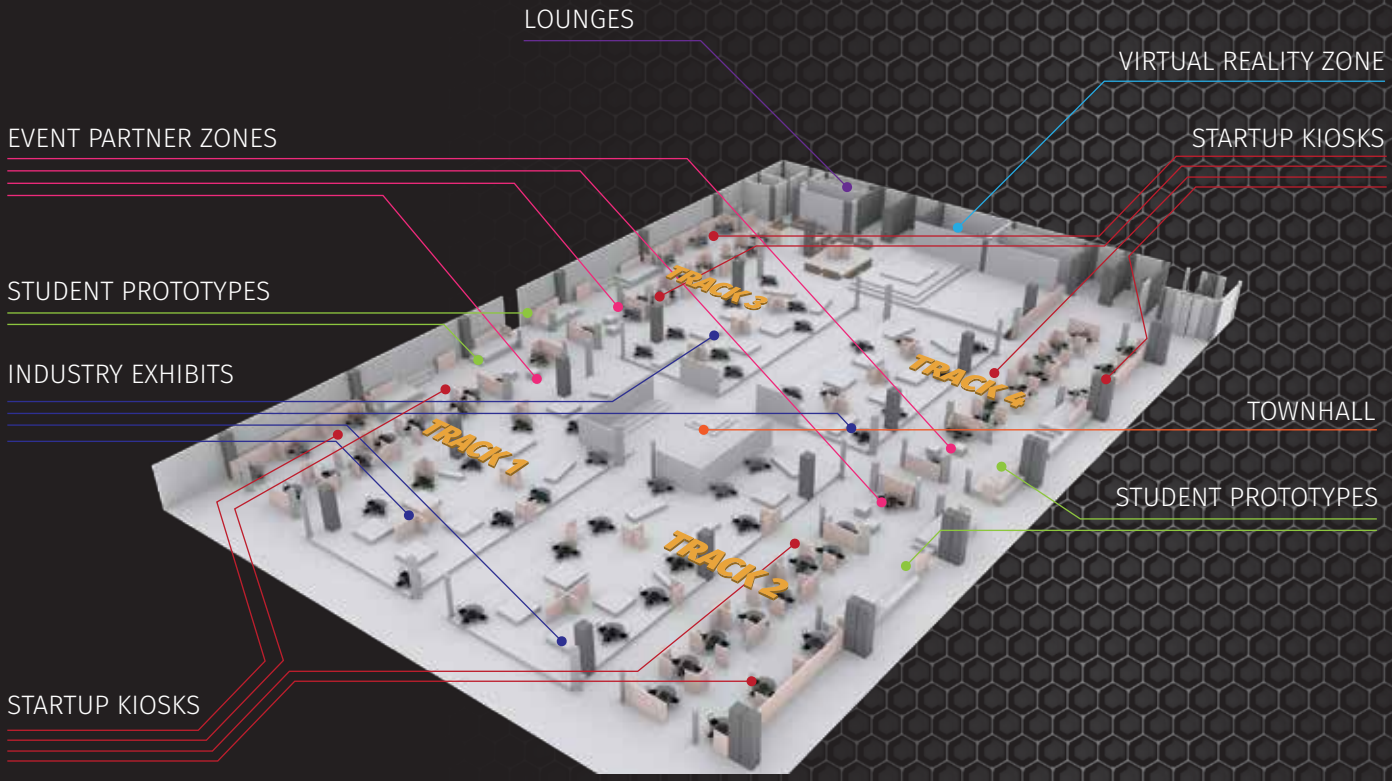
Mr. S.K Soonee, Advisor, POSOCO (Power System Operation Corporation

The prime objective of Engineer Infinite, an international conference is to connect the electrical & electronics industries to research, academia and bring out new technologies / products & markets that are "NxT".The conference will provide an opportunity for researchers, academicians, scientists and professional engineers to present their work, publish results, exchange ideas and network for scientific and industrial collaborations in an international forum. The preference will be given for high quality technical papers having demonstration/product setup for exhibition.

The tracks are:

- Power Electronics & Digital Transformation of Power Delivery.
- Energy Storage Systems and Solutions
- IoT, AI and Electricity
- E-Transportation

space

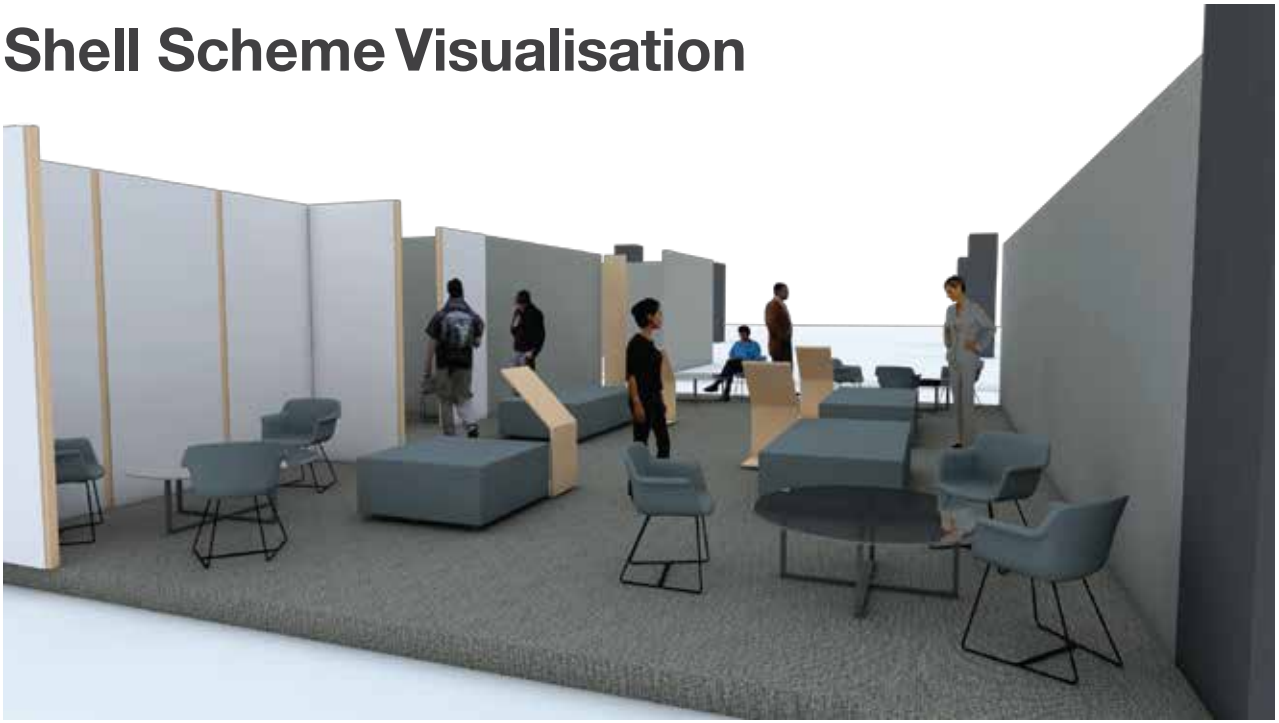


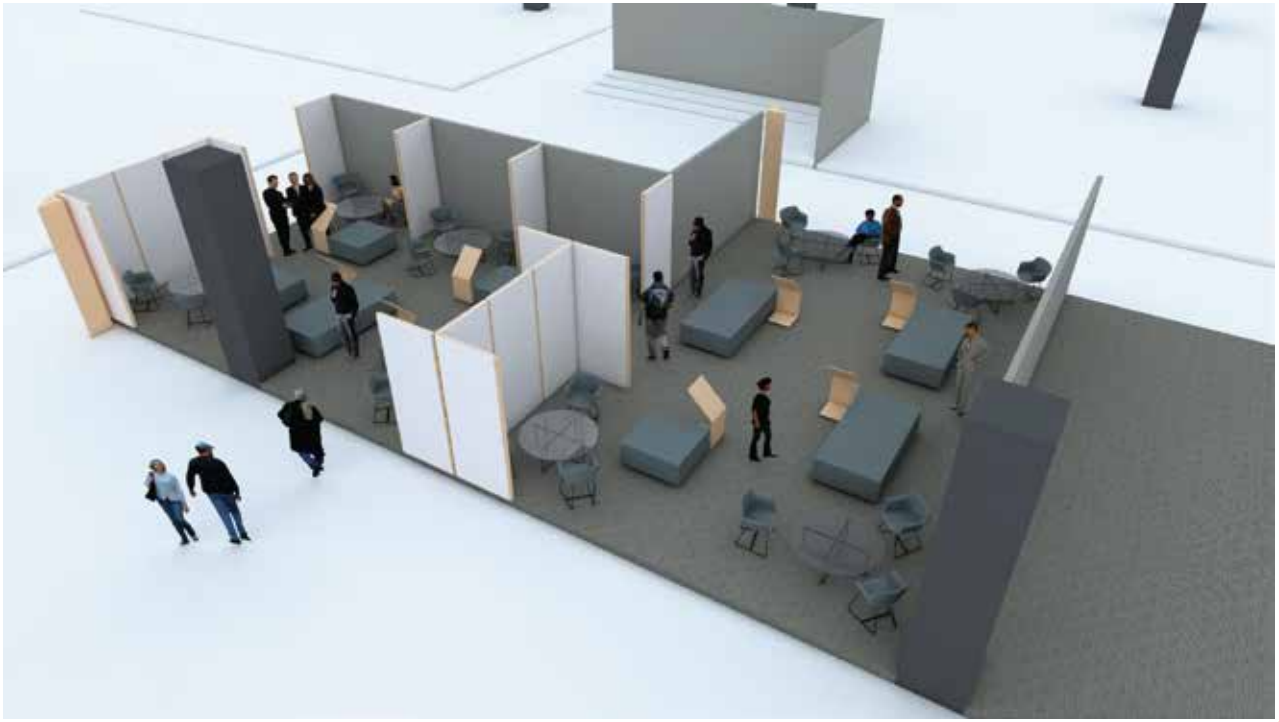
E-TECHNXT PAVILION @ ELECRAMA-2018
2,000 M^2 of interactive spaces

For Sponsorship Information, Contact:

Muralikrishna
Executive Officer
E: murlikrishna@ieema.org
M: +91- 9980053992

Shell Scheme Visualisation





Virtual Immersion Zone Visualisation

A physical model of a generic city. Blank spaces with AR markers for sponsors to highight their products & solutions.
Volunteers show the AR markers morph into various possibilities using tablets and mobile handsets.

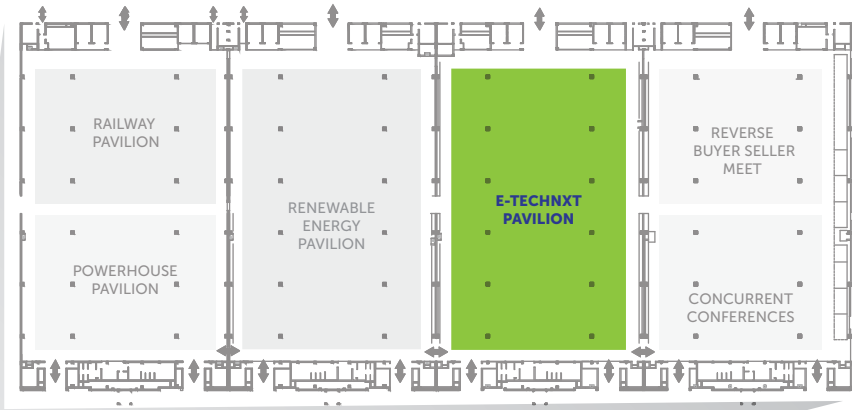
where

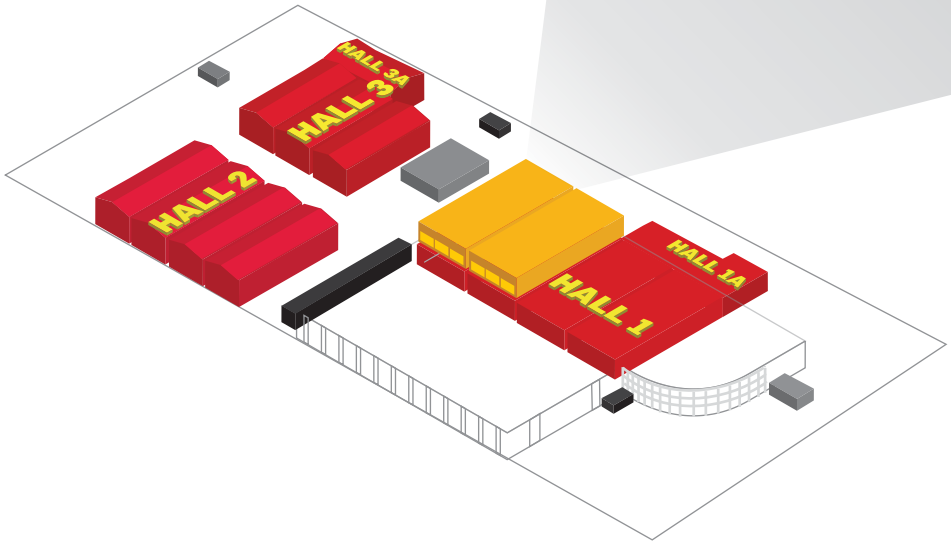
ELECRAMA
we are all about electricity

10-14 MARCH 2018
INDIA EXPO MART
GREATER NOIDA, NCR, INDIA

PAVILIONS HALL LAYOUT:
INDIA EXPOMART LTD.,
GREATER NOIDA NCR DELHI

> 80,000 m² gross space
> 1000+ exhibitors
> 8+ country pavilions
> 5 new technology areas
> 5 industry & trade summits





organisers

ieema
your link to electricity

INDIAN ELECTRICAL & ELECTRONICS MANUFACTURERS' ASSOCIATION (IEEMA) is the first ISO certified industry association in India with 800+ member organisations encompassing the complete value chain in power generation, transmission and distribution equipment. IEEMA members have contributed to more than 90% of the power equipment installed in India.

ELECRAMA
we are all about electricity

10-14 MARCH 2018
INDIA EXPO MART
GREATER NOIDA, NCR, INDIA

ELECRAMA is the flagship showcase of the Indian Electrical Industry ecosystem and the largest congregation of power sector ecosystem in the geography. ELECRAMA brings together the complete spectrum of solutions that powers the planet. Featuring not just equipment & technology, but peerless thought leadership platforms for everything electric - from technical conclaves to industry summits.

awareness, networking, dialogue and a vision of the future!

KEY OPPORTUNITIES & TAKEAWAYS
- Networking
- Funding
- Employment
- Collaboration
- Industry exposure
- Awareness
- Thought leadership

WHO SHOULD BE THERE
- Students
- Start-up founders
- Fraternity Members
- Senior Management
- Manufacturers
- Contractors/Consultants
- Utilities
- State Representatives

VISITOR PROFILE
- C-suite Executives
- Venture Funds
- Incubation Labs
- Industry Experts
- Academic
- VIPs & Government
- General Visitors

For Sponsorship Information, Contact:

Muralikrishna
Executive Officer
E: murlikrishna@ieema.org
M: +91- 9980053992

For Event Information, Contact:

Akeel Khan
Executive Officer
E: akeel.khan@ieema.org
M: +91-90157 21725

Indian Electrical & Electronics Manufacturers' Association
85A, First Floor Rishyamook Building, Panchkuian Road,
New Delhi-110001, INDIA.

T: +91-11-23363013
F: +91-11-23363015
W: www.ieema.org

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your link to electricity