Note: The following themes are just guidelines to help you. You are free to think like an unconventional thinker and come up with great innovations. Do not limit yourselves to these problem statements.

AIM

Participants are required to come up with new innovative solutions that are directed towards solving the problem statements described through the following end Goals with the given themes

PROBLEM STATEMENT

- **Electricity to all**
  Almost 1.3 billion people worldwide remain without access to electricity and 2.7 billion are still cooking on harmful and inefficient stoves. Access to electricity can act as a catalyst for the development of villages which in turn will support further improvements in access to energy.

  Participants are invited to come up with innovative technical solutions for the following:
  - Make remote, inaccessible villages self- sustainable, energy efficient with the help of nonconventional energy sources where conventional power infrastructure is not viable
  - Supply of power with quality, reliability with security
  - Providing cost effective energy solution to all

- **Smart Street Lights**
  Each year, in the world, several trillion kWh are expended on street lighting. A high consumption means a high amount of generated energy, which in turn translates into high level of noxious emissions during production of electricity.

  Participants have to come up with innovative technical solution that should make existing street light poles provide following features in addition to luminosity:
  - Design the pole to be Self-sustainable in terms generating its own power. It should be able to monetize the smart services it could provide-for future maintenance. Participants can think of various Revenue models that will be deemed fit and applicable in this case
  - To encompass Citizen centric services and provide security aspects too
  - The pole should have a well-defined stable infra-backbone to support the publicly offered services, detect any damage/issues, connectivity to other devices but keeping the design overall to be aesthetic

- Participants are encouraged to come up with more utilities and/or features than the existing street light poles design to turn it into a smart pole or a multi-purpose pole

- **Industrial Luminaires Improvements:**

  Industries remain the key aspect for the development of the country and also, this is an area where technology is extensively used. Industrial sector continuously strives to achieve competitive edge by improving operational efficiency in all aspects of operations. Energy Cost constitutes a major portion of process cost for any product and any saving in energy cost helps the manufacturer to make end product more competitive in market place. As per the estimate energy spent for lighting of industrial Workspace constitutes approximately 20% of total energy spent in industry.

  Initiatives like "Make In India "and other promotional schemes launched by Government has ensured revival of investment in industrial sector in India. If we are able to use technology to make the lighting systems used in Industrial Workspace more energy efficient, it will save lots of energy cumulatively for the nation.

  We have witness a major change in use of Technology in all aspects of production by Industrial users. They are now redesigning their factories and making them smarter - connected workplace using latest communication technology.

  Participant can offer solutions that will use technology to give smarter energy efficient lighting system. They can come up with innovative lighting systems that use power of internet and LED technology to offer energy efficient, low maintenance lighting system for industries that can be controlled and monitored effectively.

EVALUATION

Abstracts will be judged by a panel of experts. Following are the broad guidelines for judging:

1. **Creativity and Novelty:** How novel is the idea? How different is it from the current solutions available? The innovation must be ingenious and novel in its area of application and should have a high potential for leaving an impact on the society.
2. **Originality:** The innovation should not, by any means, include copied or stolen work. Such applications will be disqualified immediately.
3. **Performance**
4. **Cost/Market Value, Life-cycle cost and Acceptance**
5. **Durability and Usability:** Durability of the prototype/method proposed.

6. Implementation ability: Is the solution implementable as described? Is it repeatable? Is the solution feasible for diverse and changing conditions?
7. Scalability: Is the solution scalable to a higher level, how easy is it to scale up and what are the factors affecting it?
8. Potential of Impact: How does it benefit the society? The scale of problem that it solves, intensity of the solution and number of people catered from the solution directly and indirectly.
9. Design: Has the design been taken into consideration? How optimized is the product?
10. Ergonomics (if the team decides to make a well-designed product)

In case of any discrepancies, the decision of the Organizers or Judges will be final and binding on all.

ABSTRACT FORMAT

1. **Title**
2. **Abstract**
   a. Objectives
   b. Beneficiaries (For whom)
   c. Value of results (Usage)
3. **Background**
4. **Statement of Problem**
   a. Succinct definition of problem addressed (follows from material in the background section)
5. **Research**
   a. Present methods of tackling the problem (if any)
   b. Proposed Solution
   c. Alternate solutions/approaches
   d. Novelty of Approach: How is/will your solution be better than the existing products that address the same problem?
6. **Technical Report**
   a. Description of concepts, theories and/or approach involved in the proposed solution
   b. Technical aspect of the proposed solution
   c. Detailed technical specifications and pictorial representations (block diagrams/ flow chart)
   d. Description of the flow of operations demonstrating key features and functionality
   e. Performance estimate of the solution
   f. Experimentation/Verification done to establish the workability of the above
   g. A link to the video of the working model/ prototype

7. **Results**
   a. Actual findings, significant output of tests and analysis (Must be readable)
   b. Include problems encountered, credibility of results, accuracy estimates
   c. Pros and cons of your solution
   d. Utility of results
8. **A link of the Google Drive Folder** which contains Pictures and Video of the working model/ prototype**.**
9. **Application**
   a. Your idea as a solution to the problem
   b. Additional applications
   c. Benefits to the users
10. **Future prospects, research in it and further development (in brief)**

REGISTRATION AND SUBMISSION

The Participants have to register on the official Techfest Website and fill all the necessary details.
www.techfest.org -> Ideate -> BEL Innovate to illuminate-> Explore More -> Register -> Fill all your details -> your team will be formed and now you can add other team members

ABSTRACT SUBMISISON

Teams are required to submit one report to belinnovate@techfest.org. This report should contain the idea they are looking forward to work on.

PROJECT REPORT SUBMISISON

The project report should be mailed to **belinnovate@techfest.org** with the subject 'Ideate: 'BEL Innovate to illuminate'' Project Report: <Team Id>'
(For eg. Ideate: 'BEL Innovate to illuminate' Project Report: **BI1234**). Teams must follow the following details for the submission:

1. The abstract must be submitted in PDF format only
2. Font: Arial
3. Size: 11
4. Spacing between two lines: 6 pts
5. Spacing between two paragraphs: 10 pts
6. Bottom margin: 1 inch

SHORTLISTING

Top 20 teams will be selected and would get the chance to present their model/idea in the Final Round at Techfest, IIT Bombay which is from 14th -16st December 2018. Participants will get a slot for presenting their model/idea to the Judges based on which they will be evaluated.

GENERAL RULES

1. Every team has to register online on our website for the competition. A Team ID will be allocated to the team on registration which shall be used for future references.
2. A team can register at any point of time before 30th October 2018 and submit the final abstract and video (as mentioned in the structure).
3. The decision of the organizers or judges shall be treated as final and binding on all. Techfest has all the rights to verify the identity and accuracy of the details provided by the participants.
4. No responsibility will be held by Techfest, IIT Bombay for any late, lost or misdirected entries.
5. The idea presented by the teams should be original (not protected by means of patent/copyright/technical publication by anyone else).
6. Note that at any point of time the latest information will be that which is on the website. However, registered participants will be informed through mail about any changes on the website.
7. All modes of official communication will be through the Techfest e-mail.

Techfest Office
Students' Activity Centre
IIT Bombay, Powai, Mumbai
Maharashtra - 400076

TIMELINE

First Project Report Submission	16th September 2018	Submission of First Draft Report
Mentorship Stage	22nd September to 30th October 2018	Mentors will be allocated for the guidance of the participants.
Last Date of Registration	30th October 2018	Participants need to register before this date.
Final Project Report Submission	2nd November 2018	Submission of final project report with documentation of work along with video prototype (if any) has to be submitted before this date.
Declaration of Result	10th November 2018	Declaration of shortlisted teams for final presentation at Techfest, IIT Bombay on the basis of final report and the supporting materials.
Improvisation Stage	10th November to 5th December 2018	Shortlisted participants are to improve upon their model and prepare a presentation for the final round.
Final Presentation and Video submission	6th December 2018	Participants have to submit the final video of prototype and presentation to be displayed during the festival before this date.
Presentation Stage	14th -16th December December 2018	Final presentation along with a demonstration of working prototype.

TEAM SPECIFICATION

A team may consist of a maximum of 4 participants.
Students from different educational institutes can form a team.

ELIGIBILITY

All students with a valid Student identity card(s) of their respective educational institutes are eligible to participate.

CERTIFICATE POLICY

The top four teams will be awarded with the Certificate of Excellence at Techfest, IIT Bombay. E-Certificates of participation will be awarded to all the participants after completion of event.

PRIZES

Top 4 teams will be given prizes as:

1st Prize – INR 65,000

2nd Prize – INR 45,000

3rd Prize – INR 35,000

4th Prize – INR 25,000

Apart from these top three out of box ideas will get INR 10,000 each.

The Prize money will be awarded to winning teams via NEFT within 20 working days after the completion of event. The members of winning team have to mail the following information (immediately after announcement of results) to **rohan@techfest.org**.

Subject: BEL Innovate to illuminate, Team ID - Your position (Example- BEL Innovate to illuminate, BI01003 - 3rd Position)

Body of mail:

1. Account Holder's Name
2. Account Number
3. Bank name and Branch name.
4. IFSC Code

IMPORTANT NOTE:

Intellectual Property Rights-

The IP rights in the content(s) of the submitted entries and related prototype shall be assigned to Bajaj Electricals Limited ("BEL") without any further consideration. BEL shall have the rights to implement and commercialize the innovative solution submitted in the entries and prototype on industrial and manufacturing level.