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**FISUEL General Information****For consistent newsletters**

Thank you for continuing to enrich the newsletters with your articles.

As them, if you have topics that you would like to share with the recipients of the FISUEL newsletter, send us a page with photos to the e-mail address fisuel@fisuel.com

Next dates for Fisuel meetings in 2019 and 2020

- AWG, Africa working group: July / August 2019 in Gabon, September 2019 to Cameroon, November 2019 in Mali, meeting for AWG directors committee in November 2019 in Côte d'Ivoire.
- APWG, Asia/Pacific working group : monthly communication by e-mail
- EU/MO WG, Europe Middle East working group: September / October 2019 in Beirut with neighbours countries invited

- The meetings of the Board of directors are the 9th of October in Paris, in March 2020 by e-mail and in May 2020 in Japan.
- The GAM 2020 will be between the 11th and the 15th of May 2020 in Tokyo Japan, including the General Assembly and the Symposium.

The Newsletter is available on website www.fisuel.org

Website FISUEL:

For technical reasons and updating with the new possibilities, the FISUEL website is being rebuilt. It will offer a better user-friendliness as well as a tree structure adapted to the immense works realized by FISUEL and by its members since 2002. It will be opened before the end 2019.

Reminder

- The address for any letter to Fisuel : Fisuel chez Promotelec, Tour Chantecoq, 5 rue Chantecoq, 92808 Puteaux Cedex, France.
- The e-mail address to Mrs Annie Besançon: fisuel@fisuel.org,
- Phone number : + 33 (0) 9 52 19 68 75
- Head office is 21 rue Ampère, Paris, 75017, France.
- **Some information will changed beginning of 2020 (information on Newsletter November).**



FISUEL, already 17 years old

A little history on the Fisuel to present the impact, the added value and the sharing that there was in 17 years, to contribute to advance the safety of the users of the electricity in the world.

53 members from 31 countries since 2002 were able to bring their experience, their skills, their organization, their results which make the Fisuel library is in 2019 a very rich and accessible by all, via the website www.fisuel.org. This database only needs to be regularly reinforced, completed and updated. Sharing is the keystone of the Fisuel.

Fisuel has international recognition. At the annual event, the GAM (General Annual Meeting), the number of speakers, participants and exhibitors grows from year to year. Partnership contracts signed by Fisuel with various international bodies bear witness to this. Many conventions have also been signed between the different members of Fisuel, from all regions of the world. Lately an agreement has been signed between Kesco and Consuel. This was also the case a few years ago between Kesco or Consuel and some African members and many others. But they are also exchanges of a few days as a training in order to share experiences, knowledge, infrastructures, field visits, national situations and the procedures, law and decree put in place. Fisuel has the ability to federate these contacts and thus to grow the markets of electrical safety in the world. Recall that in 2004, Fisuel launched in France "the world day of electrical safety" which had a great success shared until Australia.

Since 2017, the GAM has a project of local scale, related to electrical safety. For example, it was the securing of 20 boxes in the Divo market in Côte d'Ivoire or the Innovate for Safety in Renewable Energy awards in Beirut, Lebanon.

17 topics, defined to date by Fisuel, directly related to electrical safety, are illuminated by numerous presentations:

- regulation and standardization
- initial verification for new electrical installations
- periodic inspection for existing electrical installations.
- diagnostics of electrical installations
- market surveillance
- fight against counterfeits and non-compliant products
- qualification and skills
- quality management
- conformity assessment, certification
- Risk Assessment
- training
- communication
- awareness and prevention
- security and new energies
- security and access to security
- electrical safety and local context (tsunami, earthquake, flight, ...)
- impacts of new technologies (electric vehicles, photovoltaic production, ...)

To complete these topics, there is need and obligation to have credible, reliable and sustainable statistics that can be compared between countries. For this we have 2 internal Fisuel tools that take roots from year to year.

- The OISE (International Observatory on Electrical Safety), set up a few years ago, aims to identify, country by country, the data related to fires, the causes and circumstances, the human consequences, the number of electrocutions, etc. Some examples are mentioned as ONSE in France, FEEDS in Europe, Kesco in South Korea, Fesia in Japan, others in countries in Africa, etc. The purpose will be to consolidate these data at the global level. You can all contribute and bring the stone to the building. (Fisuel@fisuel.org)
- The Safety Barometer (website created by Copperalliance and given to Fisuel) which allows through 13 criteria, to evaluate the score "electrical safety" of your country but also to discover the unknown criteria, partially filled or operational. It is also a wonderful tool that offers the possibility of comparing itself to all the countries of the world provided you have transmitted the necessary information. For this, let visit the Fisuel website, tab "barometer". ([Http://www.safetybarometer.org/](http://www.safetybarometer.org/))

The Fisuel library recounts in 2019, nearly 700 reports, about 70 newsletters, to which are added the various presentations made during the meetings of the 3 Working Groups, Africa, Asia / Pacific and Europe / Middle East.

If you want to advance electrical safety in the world, contact us, join us via the website or directly to the general delegate : patrick.aubelis@fisuel.org

The functioning of the Fisuel has evolved enormously and changed in 17 years. During the first 8 years, nearly 5 people (in addition to the general delegate) funded by certain bodies such as Consuel, Schneider Electric, Legrand, Copperalliance, were promoting this Federation and therefore worldwide electrical safety.







Since 2012, Fisuel's choice has been to build on the creation of three regional working groups (Europe / Middle East, Africa and Asia / Pacific). The leader of each WG, mandated by his authority (Consuel for the 1st, Techno Zentrum for the 2nd and Kesco for the 3rd), has the heavy burden to boost this goal "electrical safety" in his region. The experts responding to the calls of the leaders of the WGs, to contribute to the works, are more and more numerous. The new dynamic is launched.

The Fisuel in the continuity of its world day of the electrical safety in 2004, launches a new initiative, that to share at the world level the 6 points of safety of an existing electrical installation based on the French decree, N° 2008-384 of the 22 April 2008 on the situation of the domestic electricity installation in residential buildings.

This subject has already been the subject of a presentation during the last 3 GAM, by France, the last by Promotelec in Beirut in May 2019 accompanied by small video.

→ Let see on the website Fisuel the presentation in English: <http://www.fisuel.org/index.php?id=256&d=1634>.

The 6 electrical safety points are:

<p>1. presence of a general control and protection device, easily accessible (general switch, often located near the electricity meter)</p> 	<p>2. presence of at least one differential protection device (earth leakage circuit breaker) of appropriate sensitivity to grounding conditions</p> 
<p>3. presence of an overcurrent protection device, adapted to the section of conductors</p> 	<p>4. presence in wet rooms (kitchens and bathrooms in particular) of an equipotential bonding and respect of the rules related to the zones in the rooms containing a bath or a shower</p> 
<p>5. absence of obsolete electrical equipment, unsuitable for use</p> 	<p>6. absence of mechanically unprotected conductors (insulators)</p> 

These 6 points of electrical safety should answer more than 90% of the different cases of regimes of neutrals in the world for the existing residential.

This idea is being studied and validated by the experts in the 3 WGs, in different regions of the world.

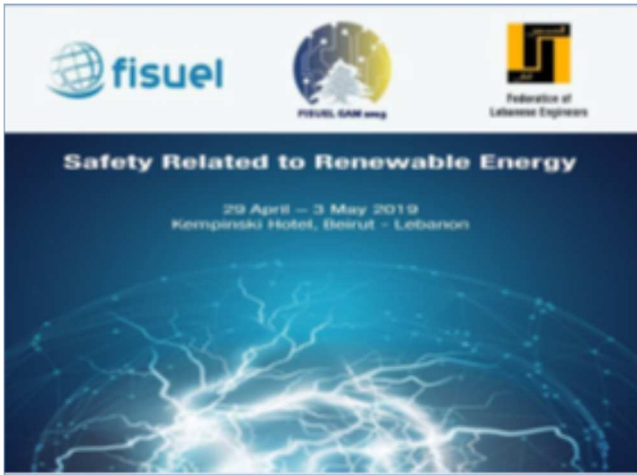
If the verification is validated, it will then remain to transcribe the text in the maximum national language and to adapt the photos.

Patrick Aubelis – GD of Fisuel

GAM 2019 in Beirut Lebanon

GAM 2019 (General Annual Meetings) took place between April 29 and May 3, 2019 in Lebanon. For the second time the GAM includes a specific event to the welcoming country. This year, the event was awarded to groups of university students on renewable energy security. This event is further developed by this newsletter. As a reminder, in 2018, in Abidjan the event was "securing markets in Africa".

For this wonderfully successful GAM2019 in Beirut, FISUEL would like to thank the entire OEA (Order of Engineers & Architects of Byerouth) and FLE (Federation of Lebanese) Engineers), technicians, sponsors (below), partners, interpreters, speakers, representatives of members of Fisuel and Lebanese and people from neighbouring countries.



The official opening took place on Tuesday, April 30, in the presence of Dr. Joseph Assad representing the Minister of Energy and Water, Her Excellency Mrs. Nada Boustani Khoury, President of the Branch of Electrical Engineers at OEA, the President of FLE and that of Fisuel.

The symposium, April 30 and May 2, and outdoor stands hosted an assembly of nearly 200 people.





The 3 working groups, Europe / Middle East, Africa and Asia / Pacific met on Tuesday 1st May. You will find a summary of this work in one of the following points.

The aim of the symposium was to share all the initiatives under the theme of "Renewable Energy Security" with many testimonials related to Fisuel's vision of affordable and sustainable access to electricity for all users in complete security). This strong and shared dynamic during Fisuel's annual symposiums, through the diversification of speakers and the topics discussed, was once again present in Beirut. It is a place of essential exchanges.

We had 44 presentations with 38 speakers from 11 countries.

All these presentations are available on Fisuel's website (www.fisuel.org). In June 2019, the FISUEL library brings together some 700 documents accessible to all.

Whatever the document, it is related to the safety of electricity users. Each support, each topic, can help you for each country in the advance of electrical safety and consequently reduce the risks.

Two sessions were devoted to renewable energies. Then many other testimonials have developed other criteria that contribute to "electrical safety", such as standardization, conformity assessment, market surveillance, and so on.

One session offered the discovery of 4 lectures on the regenerative power of lifts:

- the regenerated power on the networks
- regenerated power storage
- the use of additional powers available from variable speed lifts
- new technologies and the new generation of lifts

Before finishing the interventions by the 2018 assessment of each working group, we had the session "awards". Each selected group of students had the opportunity to present their project to the Assembly and the jury whose theme was "Innovate for Safety in Renewable Energy".



The image of the next website Fisuel was presented followed by the closing of this symposium which will leave us a very beautiful memory of this very positive FISUEL week in Beirut.

See you in Japan for the GAM 2020.

Patrick Aubelis – GD of Fisuel

GAM 2019 : Session 5: Regenerative power of lifts

Summary:

1. Introduction
2. Typical Re-generative power: Using the generated power in the grid
3. Storage of Re-generative power: Usage of battery to use the lifts with single phase supply with low rated current (1.5A) to charge this battery; the generated power will be used to charge the battery
4. Using the extra power in the lift itself: i.e. increasing the speed beyond the rated speed...
5. Out of the subject of regenerative power: we are still checking the possibility to provide a presentation about the next lift generation: pure electrical system without machine nor ropes, the synchronous linear machine.

Note: All the presentations included videos that elaborated the concept.

Introduction

The basis behind the regenerative power of the lift is that a traditional lift generates power while traveling up with no load or traveling down fully loaded. In traditional lifts, the generated power is usually dissipated by means of resistance. Now, with the new technology, this power could be re-used. This was the subject of the introductory presentation of this session. It was presented by Mr. Habib Srour, the representative of the Order of Engineers and Architects (Beirut) in the Technical Committee related to lifts in Libnor (the standardization body of Lebanon).

Presentation 51: Regenerated power to grid

Speaker: Mr. Ali Assaad, the Technical Manager of Kay Systems (the representative of Kone lifts).

Mr. Assaad highlighted that the re-generative system is an unexpected Source of Energy. Its optimal output will be during the lift travelling up with no load or travelling down fully loaded. The system is more beneficial when the building is taller with bigger capacity and having more traffic.

Presentation 52: Storage of re-generated power

Speaker: Mr. Sarkis Abdallah, the Sales Manager of OTIS Lebanon.

Mr. Abdallah elaborated the “switch” technology by OTIS. This technology is based on the introduction of battery in lieu of the rectifier of a VVVF drive system. This system reduces the power demand to 1.5 A single phase which is less than a microwave. The generated power will be used directly to charge the battery. During power failure, the lift can work up to 100 starts without need to recharge the battery.

Presentation 53: Optimization of the lift machine power

Speaker: Mr. Abdo Achkar, the New Sales General Manager for Mitsulift (the representative of Mitsubishi lifts)

Mr. Achkar explained the system introduced by Mitsubishi elevators (variable travelling speed). The machine power is rated based on the rated speed and the rated load. Even though the lift is travelling traditionally on a its rated speed, but the rated load differs based on the demand. This means that during several travels, the machine will have spare power. This extra power will be used to increase the speed.

Presentation 54: Lift Next Generation

Speaker: Mr. Charbel Zakhia, the Sales Manager for Trust for Elevators (the representative of Thyssen lifts)

Mr. Zakhia put us in the future of the lift industry where the linear synchronous machine will be used instead of the traditional rotating machines that are the base of the industry for almost a century. This revolutionary technology will provide multi-possibilities. There will be no limitation on the height (traditionally 500 m), possibility of having several cars in the same well, possibility of vertical and horizontal movement of the same car and lot of other advantages that will change the concept of the transportation within the buildings.



Find all GAM 2019 videos link in Beirut, Lebanon

The 2-day symposium was broadcast live.

You will find below the video links of each session of this symposium

- **The opening ceremony:** https://www.youtube.com/watch?v=B_FSeJ6DKSQ
- **session 1 « renewable energy »** with 6 speakers : https://www.youtube.com/watch?v=2LuXS5D7y_Q
 - Renewable Energy in Japan from FESIA Japan
 - Renewable Energy in New Caledonia from Cotsuel New Caledonia
 - Analysis and characterization of faults in PV panels from USEK University
 - Renewable Energy in Lebanon from Ministry of Water and Energy – Lebanon
 - Regulation Measures for safety of solar PV Sys in Lebanon from CEDRO – Lebanon
 - Safety in Renewable Energy, Integration into EDL's Grid from EDL - Lebanon
- **session 2 : « renewable energy »** with 4 speakers : <https://www.youtube.com/watch?v=tH7PmTR98K8>
 - Renewable Energy Philosophy from Schneider Electric
 - Renewable Energy Facilities from KESCO South Korea
 - Evolvement of electrical safety from BAU university
 - Safety relative to ER in Cameroon from ENEO Cameroon
- **session 3 « testimonies »** with 6 speakers : <https://www.youtube.com/watch?v=GRIYJ9HXQWk>
 - IEC - IECEE - IECRE from IEC
 - EVCI – Electric Vehicles Charging Installations from CONSUEL France
 - ASEC from ASEC France
 - Actions supporting Market Surveillance Authorities from IGNES France
 - Batteries & self-consumption from CONSUEL France
 - The 6 safety Points in electrical renovation from Promotelec France
- **session 4 « testimonies »** with 5 speakers : https://www.youtube.com/watch?v=9uDI_-Nn38s
 - For a healthy, safe and loyal market from Schneider Electric
 - Initial certification of electrical installations, expérience from LBTP Cote d'Ivoire
 - Lightning Design for Photovoltaic Solar Farm from AUD University
 - E-learning Photovoltaic from CONSUEL France
 - Pedagogy to Advance Safety in Renewable Energy from AUD University
- **session 5 « regenerative power of lifts »** with 5 speakers and **session 6 « defense of projects by the 7 groups of university students »** : https://www.youtube.com/watch?v=rRP_4Ha0smc
- **session 7**, new members of Fisuel, **session 8**, reports of 2018 WGs activities, the award ceremony and the closing ceremony : <https://www.youtube.com/watch?v=aP6yH4i6uoU>

For memory

2 vidéos on GAM 2018 in Abidjan, Côte d'Ivoire :

- https://www.youtube.com/watch?reload=9&v=3C6jCv2p_rl
- <https://www.youtube.com/watch?v=tIOYCACbZpc>

Other realised by Konsuil during the GAM 2017 in Indonesia :

- <http://www.konsuil.or.id/id/category-blog/item/595-video-kegiatan-gala-dinner-sightseeing-tour-fisuel-gam-2017.html>
- <https://www.youtube.com/watch?v=cbfxJGLt8Ng>
- https://www.youtube.com/watch?v=UO4_soTXpnY
- <https://www.youtube.com/watch?v=equLIXcCgCA>
- <https://www.youtube.com/watch?v=Fqi1i8gkZ9A>
- https://www.youtube.com/watch?v=MxHDy_EeJM8

Videos of the AWG meeting in 2017 in Cotonou with the preparation from Contrelec:

- <https://www.youtube.com/watch?v=-u7PTEddJNE>
- <https://www.youtube.com/watch?v=7gd86Vio10U>

Awards GAM 2019 in Beirut in Lebanon

Since 2018, on the initiative of the new President of Fisuel, Mr. Dominique Desmoulin, each GAM is associated an event to boost electrical safety. During the GAM2019, the organizers (OEA and FLE) launched a competition with the Universities. The theme was "**Innovate for Safety in Renewable Energy**".

To better understand, here is the mail sent to Universities

« Call to Participate in a Student Competition - As a part of the FISUEL Symposium - "Safety Related to Renewable Energy" »

The Federation of Lebanese Engineers will host this year the General Meeting and the Symposium of FISUEL (The International Federation of the Safety of Electricity Users) between 29 April and 2 May 2019, in Kempinski Summerland Resort & Hotel – Beirut. The theme of the conference is "Safety Related to Renewable Energy".

International organizations will be represented in this event, as well as Lebanese officials, non-governmental organizations and industrialists. As a side activity of the event, there will be a competition for students' projects for the Faculty of Engineers of the different Universities of Lebanon. The subject of the competition is: **Innovate for Safety in Renewable Energy**. The aims are as follows:

- raise awareness about safety in Renewable Energy Devices, Systems, and Projects;
- drive innovation in this field;
- enable the youth to innovate in order to solve problems for the community;

Competition Philosophy : Competing groups will be required to survey the problems that can be solved by making use of renewable energy. The group will identify a problem and design an engineering solution that will solve it. The group will present the results of their survey, design and possible implementation and testing of their solution before a jury consisting of industrial experts.

Who may participate : Students and faculty mentors from one or more universities in Lebanon may team up with community supporters to work on projects to solve a problem related to renewable energy.

- The team size is limited to 5 students.
- Graduate and undergraduate students can participate in the competition.
- Participating team members should be enrolled in a degree program, or have graduated less than one year ago.

Important Dates and Deadlines :

Application submittal deadline: Monday April 1st, 2019, the application should include : Name of the University(ies), Name of the team, Responsible tutor contacts, Team leader contacts and Project Theme (up to 25 words),

The application should be submitted by email to: fisuel2019competition@gmail.com

Submission of project abstract: Sunday April 14th, 2019, the abstract should define the project (up to 500 words)

Notification of Project Acceptance: Tuesday April 16th, 2019, accepted projects will be considered to enter in the competition.

Project Exhibition & Evaluation date: Tuesday April 30th, 2019, other details will be conducted to the accepted teams.

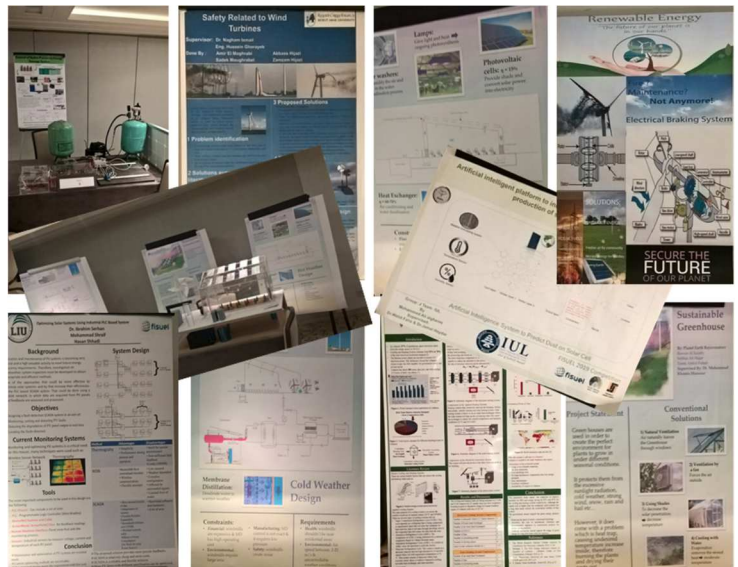
Expected Deliverables: A1 Poster (including the survey result, the system design, the implementation plan & any other useful information) and the implementation could be addressed either on the poster or by a prototype (could be a system or a software), as applicable.

Awards : First, second and third place winners shall receive an award. The competition will be an opportunity for industrials to select students for internships. The competition will be reported on Lebanese media and posted on the FISUEL GAM 2019 website. Participating teams will be able to attend the FISUEL GAM 2019 presentations."

Seven groups of students were selected to explain and support their project on the 2nd day of the symposium before the Assembly and before a jury composed of 3 directors of Fisuel, 2 representatives of OEA and 3 representatives of the Lebanese industry. The projects and models exposed, the students were able to answer all the questions asked by the visitors.

The different solutions were:

- for the groupe B from BAU (Beirut Arab University) : Hydro pneumatic energy storage system
- for the groupe C from BAU : Safety and Efficiency of Wind Turbine
- ofr the groupe D from USEK (Holy Spirit University of Kaslik): Safety of Wind Turbine
- for the groupe E from LIU (Lebanese International University): Solar Cooling, Heating and Electricity Generation for residential building
- for the groupe H from LIU : Optimising solar systems
- for the groupe J from IUL (Islamic University of Lebanon) : Improving the performance of solar panels
- for the groupe L from BAU : Renewable Energy in Agriculture - Sustainable Greenhouse



After the passages of all the student groups, the jury deliberated. This allowed us to make a small souvenir photo with all the students and the organizers



The presentations of each group of students are available on Fisuel's website (www.fisuel.org). Then it's the awards ceremony

- 3rd place is awarded to LIU Group E
- 1st place went to BAU, B and L groups that the jury could not decide



Finally all recipients with the members of the jury and the organizers.



Results of works of the 3 WGs

The main Fisuel Orientations 2019 – 2020 taking into consideration the main axis which is the continuity of the dynamic of the FISUEL, are:

Maintain present members

The vision and the added value of Fisuel need to be better explained in ways that increase motivation.

Involve the members and make a very good next GAM 2020 with sharing and exchange between members and guests to create the dynamism of previous years in recognition still strong internationally.

Train, explain to bring new members and new experts

The safety of users of electricity which takes a stronger place in the world is a real subject in all countries. Everybody is aware of that.

All people everywhere is concerns to have an affordable, safe & sustainable access to electricity

If you could bring locales experiences, skills, don't hesitate, contact us quickly to become members or experts of working groups.

The sectors defined by Fisuel are residential and non-residential.

Diversify an manage activities contributing to electrical safety

FISUEL wants to share best practices of all criteria which contribute to electrical safety in new and existing buildings residential and non-residential, as:

- Initial and periodic controls
- Renewable energy, access to electricity
- Statistics, measurement, detection, maintenance,
- qualification, skills
- market surveillance, fight against unfair products, etc.

We have many criteria to explore for which, many examples certainly exist somewhere.

Don't hesitate, let contact us rapidly.

Consolidate the international image of Fisuel

For end of 2019, a new website FISUEL including SafetyBarometer, more communicative and more dynamic is in progress. Twitter Fisuel begin to be dynamic and will be relayed by regional twitters.

The global recipient network of the newsletter is worldwide and if you know, interested people, let give us their e-mail.

In progress we are going to create the Fisuel Wikipedia page

Master electrical safety diagnosis in the 3 regions

There are 3 Regional Working Groups, Africa, Asia - Pacifica, and Europe - Middle East

They contribute hardly to consolidate the vision and they are the relays in region of FISUEL.

All experts are invited to contribute to the works.

These are the main topics for all working groups:

- Specific action plan and orientations on "electrical safety" per Regions or per country
- Approval of professional training courses with establishment of Fisuel training certificate.
- develop communication (newsletters, best practices, website, twitter, Wikipedia, YouTube, Why join Fisuel, European Forum for Electrical Domestic Safety, local organisation or forum (UEMOA, CEMAC Pacific Ocean, ASEAN, Energy Safety forum in Singapore), IEC organisation, etc) based on our bibliotheca
- **statistics - Sustainable energy for all:** How to link and create a good synergy between our website "Safety barometer" (<http://www.safetybarometer.org/>) and the website "rise.worldbank" (<http://rise.worldbank.org/>).

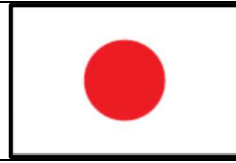


- Next meeting
 - of WG EuMe in Lebanon with invitation neighbour countries.
 - of WG Africa in Gabon
 - of WG AaPa by e-mail

GAM 2020 in Tokyo Japan – invited by FESIA

**Next GAM 2020
in Tokyo, Japan**

FESIA



FESIA has proposed to host FISUEL GAM 2020 and international Symposium.

FESIA which consist of ten Electrical Safety Inspection Associations (ESIAs) in Japan very much appreciates and respects the Board for kind efforts concerning FISUEL members including FESIA.



It goes without saying that experiences from various countries and entities are useful to solve electrical safety issues. The electrical safety ability of FISUEL members to offer electrical safety would be greatly improved with this approach.

Especially the use of technologies and systems including legal matters to ensure electrical safety should be promoted in order to reduce risk of fire and electrical shock risks and decrease electrical incidents.

FESIA has various useful and effective technologies and systems to enhance ability and productivity of electrical safety inspection.

In addition, FESIA has legal systems to promote electrical safety such as Electrical Chief Engineer System, Survey / Diagnosis System and Safety Management Service System in accordance with electrical business Act in Japan.

In this sense, it would be valuable, fruitful and useful for foreign countries to exchange experiences with technologies and systems including legal matters among FISUEL members.

In order to further enhance FISUEL activities, FESIA has proposed to hold the 2020 General Annual Meeting and the international Symposium in Tokyo, Japan in May 2020. The main theme will be “Electrical Safety Enhancement by Technologies & Systems”.

The Board and the General Assembly have validated this proposal and thanks FESIA for this invitation.

The GAM 2020 will be between 11th and 15th of May 2020.