

**BUREAU OF INDIAN STANDARDS****MINUTES**

Name of the Committee	No. of Meeting	Day	Date	Time	Mode	Venue
Instrument Transformers Sectional Committee, ETD 34	23rd	Thursday	06.06.2024	1030 h	Hybrid	Lal C Verman Hall, BIS, New Delhi

**MEMBERS PRESENT**

Sl. No.	Organization	Member	Email	Mode of Participation
1	In Individual Capacity (Ex GM & HOD Electrical, NTPC Limited)	Sh. Dinkar Devate (Chairman)	<a href="mailto:dinkar.devate@gmail.com">dinkar.devate@gmail.com</a>	Virtual
2	Bureau of Indian Standards, New Delhi	Sh. Abinash Bordoloi (Member Secretary)	<a href="mailto:eetd@bis.gov.in">eetd@bis.gov.in</a>	Physical
3	CG Power and Industrial solutions, Mumbai	Sh. Santosh Bhong	<a href="mailto:santosh.bhong@cgglobal.com">santosh.bhong@cgglobal.com</a>	Virtual
4	Calcutta Electric Supply Corporation Limited, Kolkata	Sh. Rajiv Kumar Singh	<a href="mailto:rajiv.singh1@rpsg.in">rajiv.singh1@rpsg.in</a>	Virtual
5	Central Electricity Authority, New Delhi	a) Sh. Bhanwar Singh Meena b) Sh. Pankaj Verma	a) <a href="mailto:Bhanwar.cea@gov.in">Bhanwar.cea@gov.in</a> b) <a href="mailto:kverma@nic.in">kverma@nic.in</a>	Virtual
6	Central Power Research Institute, Bengaluru	Sh. Swaraj Kumar Das	<a href="mailto:skdas@cpri.in">skdas@cpri.in</a>	Virtual
7	Gilbert and Maxwell Transformers Private Limited, nashik	Sh. Pradeep Deshpande	<a href="mailto:gmtpl.nsk@gmail.com">gmtpl.nsk@gmail.com</a>	Virtual
8	GE T & D India Limited, Noida	Sh. Mayank Yadav	<a href="mailto:mayank.yadav@ge.com">mayank.yadav@ge.com</a>	Virtual
9	Hivoltrans, Halol, Gujarat	a) Sh. Akre G.V b) Sh. Shitij Khattar	a) <a href="mailto:gvakre@gmail.com">gvakre@gmail.com</a> b) <a href="mailto:sharad@vishalgroup.in">sharad@vishalgroup.in</a>	Virtual
10	Indian Electrical and Electronics Manufacturers Association, New Delhi	a) Ms. Pragati Sohoni b) Ms. Mira	a) <a href="mailto:pragati.sohoni@ieema.org">pragati.sohoni@ieema.org</a> b) <a href="mailto:mira@kappaelectricals.com">mira@kappaelectricals.com</a>	Virtual
11	Instrans Engineering and Manufacturing Private Limited, Bengaluru	Sh. V. Rajasekharan Nair	<a href="mailto:instrans@zoho.com">instrans@zoho.com</a>	Virtual
12	Narayan Powertech Private Limited, Vadodara	Sh. Chetas Parikh	<a href="mailto:chetas@narayanpowertech.com">chetas@narayanpowertech.com</a>	Virtual
13	Nortex, Jokhabad	Sh. S. K Sharma	<a href="mailto:nortex_delhi@hotmail.com">nortex_delhi@hotmail.com</a>	Physical

14	Power Grid Corporation of India Limited, Gurugram	Sh. Sunkara B R Rao	<a href="mailto:sbrao@powergrid.in">sbrao@powergrid.in</a>	Virtual
15	Yadav Measurements Private Limited, Udaipur	a) Sh. Narendra Paliwal b) Sh. Vivek Jaiswal	a) <a href="mailto:narendra.paliwal@yadavmeasurements.com">narendra.paliwal@yadavmeasurements.com</a> b) <a href="mailto:vivek.jaiswal@yadavmeasurements.com">vivek.jaiswal@yadavmeasurements.com</a>	Virtual

## **Item 0 GENERAL**

### **0.1 Welcome and Opening Remarks by the Chairman**

Sh. Dinkar Devate, Chairman welcomed all the members present in the meeting. He requested the members to confine their discussions to the agenda and to participate actively in the discussions during the course of the meeting.

Sh. Abinash Bordoloi, Member Secretary welcomed all the members present in the meeting. He briefed about the agenda items of the meeting. He requested the members to ensure participation in all the meetings of the committee and wished for the active participation of the members in the discussions during the meeting.

### **Item 1 CONFIRMATION OF THE MINUTES OF THE LAST MEETING**

The minutes of the 22<sup>nd</sup> Meeting of ETD 34 Instrument Transformers Sectional Committee held on 06.09.2023 have been confirmed by the committee.

### **Item 2 COMPOSITION OF ETD 34- INSTRUMENT TRANSFORMERS SECTIONAL COMMITTEE**

#### **2.1 The present composition of ETD 34 is given in Annex 1.**

It has been informed to the committee that the absence of a member in two consecutive meetings of the committee would result in termination of membership. It was further informed that the membership of members who haven't participated in any of the last three sectional committee meetings or two consecutive meetings of ETD 34 Sectional Committee have been terminated. The updated composition of the committee as on 06.06.2024 is given in Annex 1.

The committee noted.

The committee noted the status of participation of the Members in the Previous three sectional committee meetings.

#### **2.2 Status of Participation of Members in the Previous Three Meetings.**

The committee noted the status of participation of the Members in the Previous three Meetings.

It has been decided to remove the inactive members from the committee as per the BIS guidelines.

#### **2.3 Notified Vacancy for membership in ETD 34 Sectional Committee.**

The committee noted the vacancy notified for membership in ETD 34 Sectional Committee.

### **Item 3 ANNUAL ACTION PLAN FOR STANDARDIZATION 2024-2025**

The committee noted the Annual action Plan for Standardization of ETD 34 Sectional Committee for 2024-2025

### **Item 4 REVIEW OF PERFORMANCE OF ETD 34-INSTRUMENT TRANSFORMERS SECTIONAL COMMITTEE (2023-2024)**

The Committee noted the performance of ETD 34-Instrument Transformers Sectional Committee for 2023-2024.

**Item 5 ACTIONS ARISING OUT OF PREVIOUS MEETING**

Sl. No.	Item No. of last minutes	Subject	Decision	Action Taken/Proposed	Decision Taken
1	Sl. No. 1 of table under Item No. 3.	IEEMA was requested to seek willingness/fresh nominations of the following non-participating organizations: a) Lustre Engineering Corporation b) Paras Power Eng. Pvt. Ltd. c) Prayog Electricals Pvt. Ltd. d) Silkans Electrical Mfg. Co. Pvt. Ltd. e) Vamet Electric Pvt. Ltd.	Mail sent to IEEMA to seek fresh nominations from these organization.  Update was not available in those mentioned absence of IEEMA. The committee decided that the Member Secretary should send an email to these organizations to request nominations.	Email with respect to active participation in the ETD 34 Sectional Committee meetings has been sent to all the members including those mentioned under column 3 in this table.  The committee may note.	It has been informed to the committee that the membership of the organizations i.e. (Paras Power Eng. Pvt. Ltd, Prayog Electricals Pvt. Ltd, Silkans Electrical Mfg.Co. Pvt. Ltd and Vamet Electric Pvt. Ltd) have been terminated due to their non-participation in any of the last three meetings of ETD 34 Sectional Committee.  The committee noted.
2	Sl. No. 2 of table under Item No. 3.	Preparation of new Indian standard on " <b>Condition Monitoring of Instrument Transformers</b> ". The Committee observed that the subject is of utmost importance in the present scenario and as such, draft need to be prepared at the earliest. The Committee had re-constituted the working group as per the following details: i) Shri G.V. Akre, M/s Hivoltrans - Convener ii) Ms Seema Soni, PGCIL iii) Shri Uday Sanvatsarkar, M/s CG Limited iv) Ms. Geetha Joshi, M/s Hitachi Energy India Ltd (Erstwhile ABB India Ltd) v) Shri Swaraj Kumar Das, CPRI vi) Shri Kiran Kelapure, YMPL vii) Shri Shailesh Patel, ERDA viii) Shri Y.V. Joshi, GETCO	Shri G.V.Akre informed that the panel requires additional time to update the document.  The Chairman requested the panel to expedite their work	G.V. Akre may update the committee.	It has been decided to circulate the draft on "Condition Monitoring of Instrument Transformers", submitted by the working panel responsible for the preparation of aforesaid draft as 'P-Draft' for '30 days' for the review of the same by the committee.
3	Sl. No. 3 of table under Item No. 3.	<b>Revision of IS 4146: 1983</b> Application guide for voltage transformers and <b>IS 4201:1983</b> -Application guide for current transformers	Some comments to be incorporated in the prepared draft. Shri Uday Sanvatsarkar was requested to go through the draft and update the draft accordingly.  Update was not available in absence	The panel may update the committee.	The panel has requested for an extension of two months for the preparation of the draft.  The committee considered the request and decided to provide an extension of 'two months' to the working panel ETD 34/P2 responsible for the

			<p>of Shri Uday Sanvatsarkar in the last meeting. Shri G.V. Akre requested the sharing of the prepared draft with the panel members and informed them that the panel will review and update the draft for further processing.</p> <p>The following Panel (ETD 34/P2) with the following members was constituted during the 20<sup>th</sup> ETD 34 Sectional Committee meeting dated 15/07/2021.</p> <p>i) <i>Shri G.V. Akre, M/s Hivoltrans - Convener</i></p> <p>ii) <i>Dr. Uday Sanvatsarkar, M/s CG Power and Industrial Solutions</i></p> <p>iii) <i>Ms. Geetha Joshi, M/s Hitachi Energy India Ltd (Erstwhile ABB India Ltd)</i></p> <p>iv) <i>Shri Kiran Kelapure, M/s Yadav Measurements Private Limited</i></p> <p>v) <i>Shri Shailesh Patel, M/s ERDA, Vadodara</i></p> <p>vi) <i>Shri Pradeep Deshpande, M/s Gilbert &amp; Maxwell Trans. Pvt. Ltd</i></p>		<p>preparation of working draft for the revision of IS 4146:1983 and IS 4201:1983.</p>
4	Sl. No. 4 of table under Item No. 3.	<p><b>Revision of IS 5547: 1983</b> Application guide for Capacitor Voltage Transformers and <b>IS 6949:1973</b> - Summation current transformers</p>	<p>Update was not available in absence of Shri Uday Sanvatsarkar in the last meeting.</p> <p>The panel (ETD 34/P2) was asked to review the document and submit the draft for further processing.</p>	<p>The panel may update the committee</p>	<p>The panel has requested for an extension of two months for the preparation of the draft.</p> <p>The committee considered the request and decided to provide an extension of 'two months' to the working panel ETD 34/P2 responsible for the</p>

					preparation of working draft for the revision of IS 5547:1983 and IS 6949:1973.
5	Sl. No. 5 of table under Item No. 3.	Revision of IS 16227 (Part 1):2016/IEC 61869-1:2007- Instrument transformers: Part 1 general requirements	It was informed to the committee that the IEC has revised the standard from IEC 61869-1:2007 to IEC 61869-1:2023.  It was decided that the panel would study the document and prepare the draft for the revision of IS 16227 (Part 1) in case any changes have been made in the IEC standard.	The panel may update the committee.	The panel has requested for additional time for the study of IEC 61869-1:2023.  The committee considered the request and decided to provide the working panel ETD 34/P2 'three months' time to complete the study of IEC 61869-1:2023 and prepare the draft for the revision of IS 16227 (Part 1):2016/IEC 61869-1:2007 in case any changes have been made in IEC 61869-1:2023.

#### Item 6 PRESENT POSITION OF WORK

The committee noted the present position of work of ETD 34 Sectional Committee.

#### Item 7 REVIEW OF INDIAN STANDARDS FOR REVISION/REAFFIRMATION

7.1 The committee noted the List of Indian Standards due for review given in Annex 5 of the Agenda.

#### 7.2 Indian Standards adopted from IEC which are due for review:

- The committee has been decided to Reaffirm all the Indian Standards mentioned at Annex 6 of the agenda except for (IS 16227 (Part 1):2016/IEC 61869-1:2007 and IS 16227 (Part 6):2018/IEC 61869-6:2016); since these Indian Standards are identical adoption of the corresponding IEC Standards and there are no changes in the base IEC Standards.
- The committee has been decided to review and revise IS 16227 (Part 1):2016/IEC 61869-1:2007 since IEC 61869-1: 2007 has been revised to IEC 61869-1:2023 and IS 16227 (Part 1):2016 is an identical adoption of IEC 61869-1:2007.
- The committee has been decided to review IS 16227(Part 6):2018/IEC 61869-6:2016 since IEC 61869- 6:2016 has been withdrawn and replaced by IEC 61869-1:2023 and IS 16227 (Part 6):2018 is an identical adoption of IEC 61869-6:2016.

#### Item 8 NOMINATION/CO-OPTION REQUESTS FOR MEMBERSHIP IN ETD 34 SECTIONAL COMMITTEE

The Nomination/Co-option request of 'M/s Heptacare Power Industries Pvt. Ltd' for membership in ETD 34 Sectional Committee has been accepted by the committee.

#### Item 9 COMMENTS RECEIVED ON INDIAN STANDARDS UNDER ETD 34 INSTRUMENT TRANSFORMERS SECTIONAL COMMITTEE

The following comments on Indian Standards under ETD 34 have been received.

Sl. No.	IS No. & Title	Commentator	Comments	Decision
1	IS 16227 (Part 4): 2015/ IEC 61869-4:2013- Instrument transformers Part 4	M/s MGVCL, Vadodara	Applicability on 11kV CTPT unit (Three Single Phase CTs and One Three Phase PT) since IS 16227 (Part 4) does not specifically	The committee has been decided to seek clarification from IEC TC 38 regarding applicability of IS 61869-4:2013 on the

	additional requirements of combined transformers		applicable to combined CTPT unit having three single phase CTs and one three phase PT.	combined Instrument transformers unit with the combination of Three Single Phase CTs and One Three Phase PT against the comments on IS 16227 (Part 4):2015/IEC 61869-4:2013 received from M/s MGVCCL, Vadodara since IS 16227 (Part 4):2015 is an identical adoption of IEC 61869-4:2013 and the applicability of IEC 61869-4:2013 on the combined Instrument Transformers other than the combination of 1 CT and 1 PT is not specified in the said IEC standard.
2	IS 2705 (Part 1):1992- Current transformers - Specification: Part 1 general requirements (Second Revision)	Central Electricity Authority (CEA), New Delhi	It is to be informed that IS 2705 (Current Transformers-Specification) may be withdrawn after release of IS 16227. IS 2705 part-1 being still active. This is creating conflict for manufacturing and type testing. In this regard, instruction may be circulated to all concerned to stop using IS 2705 in testing and others.	The committee has been decided to withdraw IS 2705 (Part 1):1992 (Current Transformers-Specification: Part 1 general requirements) since another standard i.e. IS 16227 (Part 1):2016/IEC 61869-1:2007 (Instrument Transformers: Part 1 general requirements) has already been published and is in use at present.

#### Item 10 NEW WORK ITEM PROPOSAL

1. The committee noted the status of work of New Work item Proposal (NWIP) i.e. Condition Monitoring of Instrument Transformers.
2. The New work item proposal (NWIP) i.e. Formulation of Indian Standard on “Maintenance and Installation of Current Transformers and Potential Transformers” has been accepted by the committee.
3. It has been decided to constitute a working panel constituting of the following members for the preparation of working draft for the formulation of Indian Standard on “Maintenance and Installation of Instrument Transformers”.
  - a) Shri Akre G.V (M/s Hivoltrans, Halol, Gujarat)-Convenor
  - b) Shri Mayank Yadav (M/s GE (T & D) India Limited, Noida)
  - c) Dr. A. J. Chavda (M/s GETCO, Vadodara)
  - d) Shri V. Rajasekharan (M/s Instrans Engineering and Manufacturing Pvt. Ltd, Bengaluru)
  - e) Shri Chetas Parikh (M/s Narayan Powertech Pvt. Ltd, Vadodara)
  - f) Shri S.K. Sharma (M/s Nortex, Jokhabad)
  - g) Shri S B R Rao (M/s PGCIL, Gurugram)

The scope of the working panel as decided by the committee is given below:

*‘Preparation of the working draft for the formulation of Indian Standard on “Maintenance and Installation of Instrument Transformers” within 3 months’.*

#### Item 11 PROPOSAL RECEIVED THROUGH ANNUAL STANDARDIZATION PLAN (2024-2025) OF DEPARTMENT OF ATOMIC ENERGY, MUMBAI FOR FORMULATION OF INDIAN STANDARD

Sl. No.	Subject	Decision
1	Fly Back Transformers	The committee has been decided to collect necessary inputs on the new work item proposal i.e. Formulation of Indian Standard on ‘Fly Back transformers’ received from Department of Atomic Energy, Mumbai before taking decision on the same.

## **Item 12 INTERNATIONAL ACTIVITIES**

**12.1** The committee noted the Programme of Work (POW) of IEC TC 38 as given in Annex 8.

**12.2** The committee noted the information on balloting details as given in Annex 9 of the Agenda.

### **12.3 Identification of IEC publications for harmonization**

The committee noted the list of published IEC Standards corresponding to IEC TC 38 as given in Annex10 of the agenda and review all Indian standards which have been adopted from the IEC Standards; when the corresponding IEC standards get revised.

### **12.4 Review of Nominated Experts in IEC TC 38**

- a) The request of Sh. Mayank Yadav (M/s GE (T & D) India Ltd) for nomination in Working Group (WG-47) under IEC TC 38 as expert has been approved by the committee.
- b) The committee has noted and decided to nominate experts in the working groups of IEC TC 38 where no experts are nominated, on the basis of their expertise on the domain of work of the respective working groups.

## **Item 13 DATE AND PLACE FOR THE NEXT MEETING**

The committee noted the information given in the agenda.

## **Item 14 TERMS OF REFERENCE (TORS) FOR RESEARCH AND DEVELOPMENT**

The committee noted the information given in the agenda.

## **Item 15 ANY OTHER BUSINESS**

There being no other business, the meeting ended with a vote of thanks to the chair.

**ANNEX 1**

**ETD 34 – Instrument Transformers Sectional Committee Composition as on 06.06.2024**

S.No.	Organization	Member Details	Role
1	IN INDIVIDUAL CAPACITY	Name : Shri Dinkar Devate Email : dinkar.devate@gmail.com Alternate Email : Phone : 9650992237 Designation : Ex – General Manager & HOD Electrical, NTPC Limited	Chairperson
2	GE (T & D) India Limited, Noida	Name : Shri Subhash Kulkarni Email : subhash.kulkarni@arevaed.com Alternate Email : Phone : 9740983954 Designation : Manager	Alternate Member
		Name : Mayank Yadav Email : mayank.yadav@ge.com Alternate Email : Phone : Designation : Sr. Engineering Manager	Principal Member
3	Bharat Heavy Electrical Limited, New Delhi	Name : Shri P. V. K. Bara Email : pvk_bara@bhel.in Alternate Email : Phone : 9453001113 Designation : Sr DGM	Alternate Member
		Name : Shri Kulamani Naik Email : kmnaik@bhel.in Alternate Email : Phone : 9425604732 Designation : Sr. DGM	Principal Member
5	CG Power and Industrial Solutions, Mumbai	Name : Mr. Uday Sanvatsarkar Email : uday.sanvatsarkar@cgglobal.com Alternate Email : Phone : 9673333932 Designation : Assistant General Manager - Design & Technology	Principal Member
		Name: Mr. Santosh Bhong Email : santosh.bhong@cgglobal.com	Alternate Member



		Alternate Email : Phone : Designation : Senior Manager	
5	Calcutta Electric Supply Corporation Limited, Kolkata	Name : Shri Santosh Chattopadhyay Email : santosh.chattopadhyay@rpsg.in Alternate Email : Phone : 9163361863 Designation : Manager (Testing)	Principal Member
		Name : Shri Rajiv Kumar Singh Email : rajiv.singh1@rpsg.in Alternate Email : Phone : 9831869165 Designation : Dy. Manager (Testing)	Alternate Member
6	Central Electricity Authority, New Delhi	Name : Shivani Sharma Email : shivani@gov.in Alternate Email : shivani.cea@gov.in Phone : 9717686780 Designation : Director (DPM)	Principal Member
		Name : Shri Bhanwar Singh Meena Email : bhanwar.cea@gov.in Alternate Email : Phone : 8750251805 Designation : Director (PSE & TD)	Principal Member
		Name : Pankaj Kumar Verma Email : kvermap@nic.in Alternate Email : Phone : 9654565269 Designation : Deputy Director (PSE&TD)	Alternate Member
7	Central Power Research Institute, Bengaluru	Name : Swaraj Kumar Das Email : skdas@cpri.in Alternate Email : Phone : 9886643757 Designation: Joint Director-Short Cir.Lab	Alternate Member

7	Central Power Research Institute, Bengaluru	Name : Shri S. Bhattacharya Email : bhattacharya@cpri.in Alternate Email : Phone : 9425300080 Designation : Joint Director	Principal Member
8	Electrical Research and Development Association, Vadodara	Name : Shri Ravi Nandwana Email : ravi.nandwana@erda.org Alternate Email : Phone : 9887113514 Designation :	Principal Member
		Name : Shri Shailesh Patel Email : shailesh.patel@erda.org Alternate Email : Phone : 9978940468 Designation : Sr. Manager	Alternate Member

9	Gilbert and Maxwell Transformers Private Limited, Nashik	Name : Shri Pradeep Deshpande Email : deshpandepa@hotmail.com Alternate Email : Phone : 9822612511 Designation : CEO	Principal Member
10	Gujarat Energy Transmission Corporation Limited, Vadodara	Name : Dr. A. J. Chavda Email : ceengg.getco@gebmail.com Alternate Email : Phone : 9925209590 Designation : CE(Engg)	Principal Member
		Name : Dipak Panchal Email : jeequip1.getco@gebmail.com Alternate Email : Phone : 9925211076 Designation : DE(Engg)	Alternate Member
11	Hitachi Energy India Ltd., Karnataka, Bangalore	Name : Ms. Geeta Joshi Email: geeta.joshi@hitachienergy.com Alternate Email :	Principal Member

		Phone : 9601268745 Designation : Asst. Vice President	
11	Hitachi Energy India Ltd., Karnataka, Bangalore	Name : Shri Sunil Nannaware Email : sunil.nannaware@hitachienergy.com Alternate Email : Phone : 9970994051 Designation : Manager	Alternate Member
12	Hivoltrans, Halol, Gujarat	Name : Shri Shitij Khattar Email : shitij@vishalgroup.in Alternate Email : Phone : 9897022000 Designation : Director (Commercial)	Alternate Member
		Name : Shri Chowdhury Roy.A. Email : aroy@hivoltrans.com Alternate Email : Phone : Designation : Director(Technical)	Alternate Member
		Name : Shri Akre G.V. Email : gvakre@hivoltrans.com Alternate Email : Phone : 9824063410 Designation : Director (Production)	Principal Member
13	Indian Electrical and Electronics Manufacturers Association, New Delhi	Name : Pragati Sohoni Email : pragati.sohoni@ieema.org Alternate Email : Phone : 9820071173 Designation :	Principal Member

		Name : Shri Kumar Rahul Email : kumar.rahul@ieema.org Alternate Email : Phone : 8789098209 Designation :	Alternate Member
14	Institute for Design of Electrical Measuring Instruments, Mumbai	Name : Pradeep Gujarathi Email : pd@idemi.org Alternate Email : ecl@edemi.org Phone : 9892070351 Designation : Deputy Director (Elect.)	Alternate Member
15	Instrans Engineering and Manufacturing Private Limited, Bengaluru	Name : Shri V. Rajasekharan Nair Email : instrans@zoho.com Alternate Email : Phone : 9841544083 Designation :	Alternate Member
		Name : Shri Kishor S. Jinsiwale Email : instrans@dataone.in Alternate Email : Phone : 9845033173 Designation :	Principal Member
16	JSL Industries Limited, Anand	Name : Shri A. D. Mistry Email : admistry@jسلمogar.com Alternate Email : Phone : 9726771680 Designation : Sr. Manager	Principal Member
16	JSL Industries Limited, Anand	Name : V. N. Prajapati Email : vnprajapati@jسلمogar.com Alternate Email : Phone : 9328157910 Designation : AGM (D&D, QC)	Alternate Member
17	Kapco Electric Private Limited, Noida	Name : Shri S. D. Kulkarni Email : sdkulkarni@kapco.in Alternate Email : Phone : 9810001660 Designation : Director	Principal Member
18	Lustre Engineering Corporation, Chandigarh	Name : Shri Vikas B. Patharkar Email : lustre@lustreengineering.com Alternate Email : Phone : Designation :	Principal Member
19	Narayan Powertech Private Limited, Vadodara	Name : Chetas Parikh Email : chetas@narayanpowertech.com Alternate Email : Phone : 9227569367 Designation : General Manager-R&D	Principal Member

20	Nortex, Jokhabad	Name : Shri Saseendran V. Email : nortexmarketing@gmail.com Alternate Email : Phone : 9899168373 Designation :	Alternate Member
		Name : Shri S.K. Sharma Email : nortex_delhi@hotmail.com Alternate Email : nortexmarketing@gmail.com Phone : 9810076230 Designation :	Principal Member
21	Power Grid Corporation of India, Gurugram	Name : Shri S B R Rao Email : sbrao@powergrid.in Alternate Email : Phone : 9971399088 Designation : Manager (R&D)	Alternate Member
		Name : Shri Dheeraj Srivastava Email : dheeraj@powergridindia.com Alternate Email : Phone : 9717890976 Designation :	Alternate Member
		Name : Shri A.P. Gangadharan Email : apganga@powergrid.in Alternate Email : Phone : 9910378122 Designation : DGM (Engg)	Principal Member
22	Pragati Electrical private Limited, Mumbai	Name : Shri Sajin K.T. Email : sajin.kt@pragatielectricals.com Alternate Email : Phone : 9916924430 Designation : Marketing Consultant	Alternate Member
		Name : Shri Prashant. P. Gune Email : prashant.gune@pragatielectricals.com Alternate Email : Phone : 9664451600 Designation : Managing Director	Principal Member
23	Siemens Limited, Mumbai	Name : Shri Jyotirmoy Dutta Email : jyotirmoy.dutta@siemens.com Alternate Email : Phone : 9860442059 Designation :	Principal Member
		Name : Shri Vishnu Ingle Email : vishnu.ingle@siemens.com Alternate Email : Phone : 9049990054 Designation :	Alternate Member

24	Yadav Measurements Private Limited, Udaipur	Name : Balmukund M Vyas Email : Balmukund.vyas@yadavmeasurements.com Alternate Email : Phone : 9829267374 Designation :	Principal Member
		Name : Shri Narendra Paliwal Email : narendra.paliwal@yadavmeasurements.com Alternate Email : Phone : 9784635386 Designation :	Alternate Member
		Name : Vivek Jaiswal Email : Vivek.Jaiswal@yadavmeasurements.com Alternate Email : Phone : 8586831503 Designation :	Alternate Member