کمیته ملی برق و الکترونیک ایران

Iranian National Electrotechnical Committee

نشست تاسیس کمیته فنی

INEC TC 8 متناظر با IEC TC 8

“System aspects of electrical energy supply”

«جنبه های سیستم تامین انرژی الکتریکی»

مکان: جلسه مجازی (سامانه جلسات آنلاین سازمان)

۱۴۰۰/۰۶/۳۰

« بسمه تعالی»

کمیته ملی برق و الکترونیک ایران(INEC)

دستور کار: نشست تاسیس کمیته فنی INEC TC 8

زمان: روز سه شنبه مورخ ۱۴۰۰/۰۶/۳۰ از ساعت ۹:۰۰ الی ۱۰:۳۰

مکان: جلسه مجازی (جهت دریافت لینک شرکت در جلسه با شماره تلفن ۸۸۶۵۴۰۶۰-۰۲۱ تماس حاصل شود).

ردیف	ساعت	موضوع
۱	۹:۰۰ الی ۹:۰۵	ثبت نام برای شرکت در جلسه
۲	۹:۰۵ الی ۹:۱۰	خوشامدگویی
۳	۹:۱۰ الی ۱۰:۰۰	الف- اهداف، وظایف، ساختار و فعالیت های سازمان بین المللی الکتروتکنیک (IEC) و کمیته ملی برق و الکترونیک ایران (INEC) ب- ساختار و فعالیت‌های کمیته فنی IEC TC 8
۴	۱۰:۰۰ الی ۱۰:۲۵	انتخاب هیات رئیسه
۵	۱۰:۲۵ الی ۱۰:۳۰	اعلام نتایج و اختتام جلسه

TC 8

System aspects of electrical energy supply

Scope of TC 8

To prepare and coordinate, in co-operation with other TC/SCs, the development of international standards and other deliverables with emphasis on overall system aspects of electricity supply systems and acceptable balance between cost and quality for the users of electrical energy. Electricity supply system encompasses transmission and distribution networks, generators and loads with their network interfaces . This scope includes, but is not limited to, standardization in the field of:

- Terminology for the electricity supply sector,

- Characteristics of electricity supplied by public networks,

- Network management from a system perspective,

- Connection of network users (generators and loads) and grid integration,

- Design and management of de-centralized electricity supply systems e.g. microgrids, systems for rural electrification.

While relying on efficient and secure data communication and exchange, TC 8's scope does not include standards for communication with appliances and equipment connected to the electric grid or for communication infrastructure serving the electric grid. TC 8 is responsible for the maintenance of basic publications (horizontal standards) on standard voltages, currents and frequencies ensuring the consistency of the IEC publications in these fields. TC 8 cooperates also with several organizations active in the field of electricity supply such as CIGRE, CIRED, IEEE, AFSEC, IEA.

Officers of TC 8

- **Chairman: Mr Hervé ROCHEREAU (FR**
- **Secretary: Mr Christian Noce (IT)**
- **Secretariat: Italy**
- **Participating countries: 27**
- **Observer Countries: 18**

Structure of TC 8

Subcommittees	
SC 8A	Grid Integration of Renewable Energy Generation
SC 8B	Decentralized Electrical Energy Systems
SC 8C	Network Management in Interconnected Electric Power Systems
Working Group	
WG11	Power Quality
Project Team	
PT 60099-11	Prepare Surge Arresters - Part 11: Metal-oxide Surge Arresters to Protect Power Line Insulation
Maintenance Teams	
MT 1	Maintenance of IEC 60038, IEC 60059 and IEC 60196
MT 8	To define a general framework and procedures for maintenance of electrical energy supply networks
Joint Working Groups	
JWG 1	Terminology linked to SC 8A, SC 8B, SC 8C,
JWG 9	LVDC distribution linked to SyC LVDC
JWG 10	Distributed energy ressources connection with the grid linked to TC 120, TC 82,
JWG 12	Requirements for measurements used to control DER and loads linked to TC 85, TC 95, SC 77A,
JWG 44	Prosumer's Low Voltage Installation Managed by TC 64
Advisory Groups	
AG 1	Chairman's Advisory Group (CAG)
AG 13	Digital content and system approach

Members of TC 8

Country	Country Code	P/O Status	IEC Membership
Australia	AU	P-Member	Full Member
Austria	AT	P-Member	Full Member
Belarus	BY	O-Member	Full Member
Belgium	BE	P-Member	Full Member
Bulgaria	BG	O-Member	Full Member
Canada	CA	P-Member	Full Member
China	CN	P-Member	Full Member
Croatia	HR	O-Member	Full Member
Czech Republic	CZ	O-Member	Full Member
Denmark	DK	P-Member	Full Member
Egypt	EG	P-Member	Full Member

Finland	FI	P-Member	Full Member
France	FR	P-Member	Full Member
Germany	DE	P-Member	Full Member
Greece	GR	O-Member	Full Member
Hungary	HU	O-Member	Full Member
India	IN	P-Member	Full Member
Indonesia	ID	O-Member	Full Member
Iran	IR	O-Member	Full Member
Ireland	IE	O-Member	Full Member
Italy	IT	P-Member	Full Member
Japan	JP	P-Member	Full Member
Korea, Republic of	KR	P-Member	Full Member
Malaysia	MY	P-Member	Full Member
Mexico	MX	O-Member	Full Member
Netherlands	NL	P-Member	Full Member
New Zealand	NZ	O-Member	Full Member
Norway	NO	P-Member	Full Member
Oman	OM	O-Member	Full Member
Poland	PL	O-Member	Full Member
Portugal	PT	P-Member	Full Member
Romania	RO	P-Member	Full Member
Russian Federation	RU	P-Member	Full Member
Saudi Arabia	SA	O-Member	Full Member
Serbia	RS	O-Member	Full Member
Slovakia	SK	O-Member	Full Member
Slovenia	SI	O-Member	Full Member
South Africa	ZA	P-Member	Full Member
Spain	ES	P-Member	Full Member
Sweden	SE	P-Member	Full Member
Switzerland	CH	P-Member	Full Member
Ukraine	UA	O-Member	Full Member
United Kingdom	GB	P-Member	Full Member
United States of America	US	P-Member	Full Member

TC 8 Liaisons

Internal IEC Liaison	
TC 1	Terminology
TC 2	Rotating machinery
SC 8A	Grid Integration of Renewable Energy Generation
SC 8B	Decentralized Electrical Energy Systems
SC 8C	Network Management in Interconnected Electric Power Systems
TC 9	Electrical equipment and systems for railways
TC 13	Electrical energy measurement and control
TC 18	Electrical installations of ships and of mobile and fixed offshore units
TC 21	Secondary cells and batteries
TC 22	Power electronic systems and equipment
SC 22E	Stabilized power supplies
TC 23	Electrical accessories
TC 57	Power systems management and associated information exchange
TC 64	Electrical installations and protection against electric shock
TC 73	Short-circuit currents
TC 77	Electromagnetic compatibility
SC 77A	EMC - Low frequency phenomena

TC 82	Solar photovoltaic energy systems
TC 85	Measuring equipment for electrical and electromagnetic quantities
TC 88	Wind energy generation systems
TC 95	Measuring relays and protection equipment
TC 99	Insulation co-ordination and system engineering of high voltage electrical power installations above 1,0 kV AC and 1,5 kV DC
TC 105	Fuel cell technologies
TC 108	Safety of electronic equipment within the field of audio/video, information technology and communication technology
TC 114	Marine energy - Wave, tidal and other water current converters
TC 115	High Voltage Direct Current (HVDC) transmission for DC voltages above 100 kV
TC 120	Electrical Energy Storage (EES) Systems
TC 122	UHV AC transmission systems
TC 123	Management of network assets in power systems
SyC LVDC	Low Voltage Direct Current and Low Voltage Direct Current for Electricity Access
SyC Smart Energy	Smart Energy
Liaison ISO	
ISO/TC 301	Energy management and energy savings
Liaison A	
CIRED	International Conference on Electricity Distribution
EURELECTRIC	International Union of Producers and Distributors of Electrical Energy

IEA	International Energy Agency
R-Member	
SyC Smart Energy	Smart Energy

SC 8A

Grid Integration of Renewable Energy Generation

SC 8A Scope

To prepare and coordinate, in co-operation with other TC/SCs, the development of international standards and other deliverables for grid integration of variable power generation from renewables such as PV and wind energy with emphasis on overall system aspects of electricity supply systems (grids) as defined in TC 8 scope, but not covering issues usually covered by regulation such as renewable policies.

SC 8A focuses on the impact of a high percentage of renewables connected to the grid, considering that their variability and predictability impact the functioning of the whole electricity grid. It covers grid integration standards for renewable energy, aggregating contributions of all grid users and prescribing interaction modes between the grid and power plants. This includes requirements for interconnection and related grid compliance tests, as well as standards or best practice documents for planning, modeling, forecasting, assessment, control and protection, scheduling and dispatching of renewables with a grid level perspective.

Note 1: SC 8A deals with the grid level requirements enabling secure, non-discriminatory and cost effective operation of electricity supply systems with a significant share of renewable generation and cooperates with TC 82, TC 88, TC 95, TC 114, TC 115, TC 117, TC 120 and other product committees to ensure technical feasibility and verification of the implementation of the grid level requirements.
Note 2: SC 8A coordinates with TC 8 which covers standards related to Distributed Energy Resources (e.g. interconnection with the grid, design and operation of micro grids).

SC 8A Officers:

- **Chairman: Mr Bernhard Ernst (DE)**
- **Secretary: Mr Yongning Chi (CN)**
- **Assistant Secretary: Mr Zhankui ZHANG (CN)**
- **Secretariat: China**
- **Participating countries: 20**
- **Observer countries: 11**

SC 8A Structure

Working Group

WG 1	Terminology
WG 2	Renewable energy power prediction
WG 6	Connection of Renewable Energy with HVDC System
WG 7	Integrating distributed PV into DC systems and use cases
Joint Working Groups	
JWG 4	Grid code compliance assessment for grid connection of wind and PV power plants linked to TC 82, TC 88,
JWG 5	System issues regarding integration of wind and PV generation into bulk electrical grid linked to TC 82, TC 88,
JWG 1	Terminology Managed by TC 8
Ad-Hoc Groups	
ahG 3	Roadmap of grid integration of renewable energy generation

SC 8A Liaisons

Internal IEC Liaison	
TC 8	System aspects of electrical energy supply
TC 82	Solar photovoltaic energy systems
TC 88	Wind energy generation systems
TC 114	Marine energy - Wave, tidal and other water current converters
TC 115	High Voltage Direct Current (HVDC) transmission for DC voltages above 100 kV
TC 120	Electrical Energy Storage (EES) Systems
Liaison A	
IEA	International Energy Agency

SC 8A Working Groups Liaisons

Working Group	
WG 1	Terminology
WG 2	Renewable energy power prediction
WG 6	Connection of Renewable Energy with HVDC System
WG 7	Integrating distributed PV into DC systems and use cases
Joint Working Groups	
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JWG 5	System issues regarding integration of wind and PV generation into bulk electrical grid linked to TC 82, TC 88,

JWG 1	Terminology Managed by TC 8
Ad-Hoc Groups	
ahG 3	Roadmap of grid integration of renewable energy generation

SC 8B

Decentralized Electrical Energy Systems

SC 8B Scope

Standards enabling the development of secure, reliable and cost-effective systems with decentralized management for electrical energy supply, alternative/complement/precursor to traditional large interconnected and highly centralized systems. The most popular concept is currently the “microgrid” defined as a group of interconnected loads and distributed energy resources with defined electrical boundaries that acts as a single controllable entity and is able to operate in both grid-connected and island mode. Decentralized energy systems have applications for developing countries (focussing on access to electricity) as well as for developed countries (focussing on high reliability, black-out recovery and/or services). Interactions within Decentralized (Multi) Energy Systems should also be considered.

Standardization activities in this proposed SC will proceed with cooperation with concerned TC/SCs and SyCs, including but not limited to IEC SyC Smart Energy, TC 22, TC57, TC64, TC82, TC88, TC 95, TC120.

SC 8B Officers

- **Chairman: Mr Raffael La Fauci (CH)**
- **Secretary: Mr Wenpeng LUAN (CN)**
- **Assistant Secretary: Ms Wenyuan MA (CN)**
- **Secretariat: China**
- **Participating countries: 20**
- **Observer countries: 8**

SC 8B Structure

Working Group	
WG 1	General Planning, Design, Operation and Control of Microgrids
WG 3	Microgrid monitoring, control and energy management systems
WG 4	Virtual Power Plants
WG 5	Direct current and hybrid distribution systems
Project Team	
PT 63276	DER Hosting Capacity Evaluation
Joint Working Groups	
JWG 1	Terminology Managed by TC 8
JWG 44	Prosumer's Low Voltage Installation Managed by TC 64
Ad-Hoc Groups	
ahG 2	Roadmap for Decentralized Electrical Energy Systems

SC 8B Liaisons

Internal IEC Liaison	
TC 8	System aspects of electrical energy supply
TC 22	Power electronic systems and equipment
TC 64	Electrical installations and protection against electric shock
SC 77A	EMC - Low frequency phenomena
TC 82	Solar photovoltaic energy systems
TC 88	Wind energy generation systems
TC 99	Insulation co-ordination and system engineering of high voltage electrical power installations above 1,0 kV AC and 1,5 kV DC
TC 114	Marine energy - Wave, tidal and other water current converters
TC 120	Electrical Energy Storage (EES) Systems
ISO/IEC JTC 1/SC 41	Internet of Things and Digital Twin
R-Member	
SyC Smart Energy	Smart Energy

SC 8C

Network Management in Interconnected Electric Power Systems

SC 8C Scope

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electricity supply systems and acceptable balance between cost and quality for the users of electrical energy. Electricity supply system encompasses transmission and distribution networks, generators and loads with their network interfaces . This scope includes, but is not limited to, standardization in the field of:

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- Design and management of de-centralized electricity supply systems e.g. microgrids, systems for rural electrification.

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SC 8C Officers

- **Chairman: Mr Hervé ROCHEREAU (FR)**
- **Secretary: Mr Christian Noce (IT)**
- **Secretariat: Italy**
- **Participating countries: 27**
- **Observer countries: 18**

SC 8C Structure

Working Group	
WG 2	Electricity market integration
WG 3	Power system stability control

Joint Working Groups	
JWG 1	Terminology Managed by TC 8
Ad-Hoc Groups	
ahG 1	Roadmap for Network Management in Interconnected Electric Power Systems

SC 8C Liaisons

Internal IEC Liaison	
TC 8	System aspects of electrical energy supply
SC 22F	Power electronics for electrical transmission and distribution systems
SC 45A	Instrumentation, control and electrical power systems of nuclear facilities
TC 57	Power systems management and associated information exchange
TC 82	Solar photovoltaic energy systems
TC 88	Wind energy generation systems
TC 95	Measuring relays and protection equipment
TC 115	High Voltage Direct Current (HVDC) transmission for DC voltages above 100 kV
TC 120	Electrical Energy Storage (EES) Systems
TC 122	UHV AC transmission systems
TC 123	Management of network assets in power systems

Publications by IEC TC 8 and SCs

Reference	Edition	Date	Title	Language
IEC 60038:2009	Edition 7.0	2009-06-17	IEC standard voltages	EN-FR, ES

IEC 60059:1999+AMD1:2009 CSV	Edition 2.1	2009-08-11	IEC standard current ratings	EN-FR
IEC 60059:1999	Edition 2.0	1999-06-24	IEC standard current ratings	EN-FR, ES
IEC 60059:1999/AMD1:2009	Edition 2.0	2009-06-16	Amendment 1 - IEC standard current ratings	EN-FR, ES
IEC 60196:2009	Edition 2.0	2009-06-17	IEC standard frequencies	EN-FR, ES
IEC TR 62511:2014	Edition 1.0	2014-09-25	Guidelines for the design of interconnected power systems	EN
IEC 62559-2:2015	Edition 1.0	2015-04-30	Use case methodology - Part 2: Definition of the templates for use cases, actor list and requirements list	EN-FR
IEC TS 62749:2020 RLV	Edition 2.0	2020-02-11	Assessment of power quality - Characteristics of electricity supplied by public networks	EN
IEC TS 62749:2020	Edition 2.0	2020-02-11	Assessment of power quality - Characteristics of electricity supplied by public networks	EN
IEC TS 62786:2017	Edition 1.0	2017-04-11	Distributed energy resources connection with the grid	EN
IEC TS 63060:2019	Edition 1.0	2019-02-15	Electric energy supply networks - General aspects and methods for the maintenance of installations and equipment	EN
IEC TR 63282:2020	Edition 1.0	2020-11-27	LVDC systems - Assessment of standard voltages and power quality requirements	EN
IEC 62934:2021	Edition 1.0	2021-04-26	Grid integration of renewable energy generation - Terms and definitions	EN-FR
IEC TR 63043:2020	Edition 1.0	2020-11-27	Renewable energy power forecasting technology	EN
IEC TS 63102:2021	Edition 1.0	2021-09-03	Grid code compliance assessment methods for grid connection of wind and PV power plants	EN
IEC TS 62898-1:2017	Edition 1.0	2017-05-18	Microgrids - Part 1: Guidelines for microgrid projects planning and specification	EN
IEC TS 62898-2:2018	Edition 1.0	2018-09-20	Microgrids - Part 2: Guidelines for operation	EN
IEC TS 62898-3-1:2020	Edition 1.0	2020-09-21	Microgrids - Part 3-1: Technical requirements - Protection and dynamic control	EN

Number of Projects and Publications:

TC	Numer of publications	Number of projects
TC 8	13	20
SC 8A	3	7
SC 8B	3	12
SC 8C	-	3

استانداردهای ملی تدوین شده و در دست تدوین مرتبط با این کمیته فنی در پایگاه اینترنتی سازمان ملی استاندارد ایران به آدرس www.isiri.gov.ir موجود است.