

**STRATEGIC BUSINESS PLAN (SBP)**

IEC/COMMITTEE:	SECRETARIAT:	DATE:
13	Hungary	2025-09-01

Please ensure this form is annexed to the Report to the Standardization Management Board if it has been prepared during a meeting or sent to the IEC Secretariat promptly after its contents have been agreed by the committee.

A. STATE TITLE AND SCOPE OF COMMITTEE**TC 13 Electrical energy measurement and control****TC 13 Scope**

Standardization in the field of a.c. and d.c. electrical energy measurement and control, for smart metering equipment and systems forming parts of smart grids, used in power stations, along the network, and at energy users and producers, as well as to prepare international standards for meter test equipment and methods. Standardization of data exchange for smart metering and load control systems for all energy types.

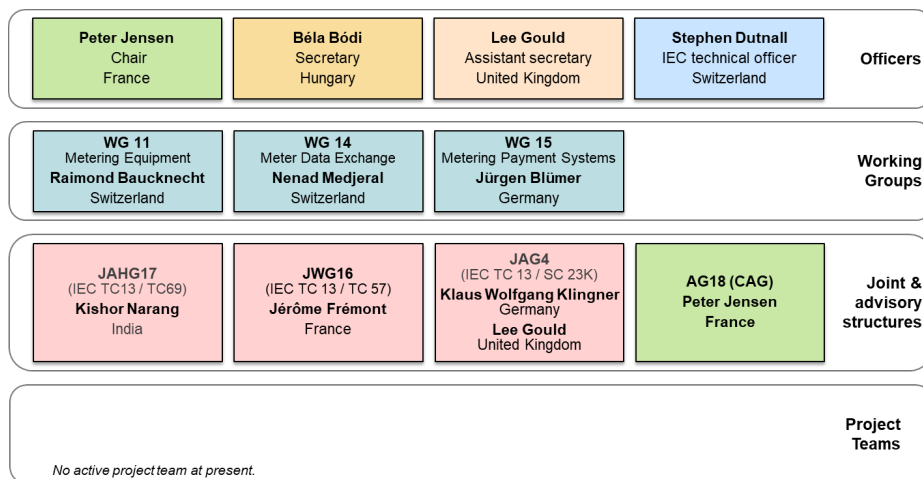
Excluded: Standardization for the interface of metering equipment for interconnection lines and industrial consumers and producers (covered by TC 57).

B. MANAGEMENT STRUCTURE OF THE COMMITTEE

TC 13 work is carried out by three working groups, one Joint Working Group, one Joint Advisory Group and the Chair's Advisory Group, all reporting directly to the Chair:

- WG 11, *Electricity metering equipment* is responsible for metrology requirements, type testing, acceptance testing and product safety;
- WG 14, *Data exchange for meter reading, tariff and load control* is responsible for the development of data models and communication protocols for meter data exchange;
- WG 15, *Metering Payment Systems* is responsible for business functions, business processes and system elements within the context of payment metering systems and payment meters;
- JWG 16, *Mapping between the common information model CIM and DLMS/COSEM data models and message profiles linked to TC 57*;
- JAHG 17, *Initial study into synergy and interplay between IEC TC 13 and IEC TC 69 linked to TC 69*;
- AG 18, *Chair Advisory Group*

The officer's team is comprised of the Chair, Secretary and Assistant Secretary, IEC technical officer.



C. BUSINESS ENVIRONMENT

In the past decade we've witnessed a majority of countries around the globe launching mass deployment of smart meters, both as a reply to market liberalisation and in order to increase energy efficiency. Being past this milestone, stakeholders now seek to extract the highest value for the society and citizens out of this infrastructure. During this period technology has continued to evolve and electrification of end-uses steadily increase.

IEC TC 13's recent scope evolution reflects a profound change in the ecosystem in which users of our standards operate and do business, with sector cross-coupling. Energy systems are becoming interconnected via telecommunication and IT/OT infrastructures to a degree representing a challenge for the industry as a whole. Products and services based on IEC TC 13 standards are in integral part of these systems and do not only serve for billing services and for operation of the grid, but also shall have the ability to exchange data and control signals for flexibility services behind the meter, such as Demand-Response and energy efficiency programmes. In the past, control was a very local function, typically between a meter and a specific end-device. Today, load-control is becoming a system-to-system business involving multiple stakeholders.

Another key topic is cyber security. In the past metering operators have proved their capability to withstand attacks and remain resilient to various threats, but the interconnection of systems now represents a large surface of exposure to new risks and every component, including products designed following IEC TC 13 standards, contribute to the overall system security. Therefore, metering equipment, both hardware, protocols and communication interfaces shall be designed with the latest state of the art in terms of cyber protection and built with a capacity to receive security updates as required.

The design of smart meters follows changes in legislation and regulation. Legal metrology has defined what is a meter for over a century, without fundamentally changing the object (the largest change was the move to static meters from the 90s). But several changes are foreseen such as moving to remote display units, digital inputs (sample values) and enabling near-real-time data exchange and embedding billing (or revenue-grade) meters inside end-devices such as EV-chargers, heat pumps, as well as DER, such as PV-inverters and V2G. This will induce requirements for both evolution of existing and creation of new standards. As domains are highly interconnected and overlapping, a number of these new standards needs to be created in a collaborative effort between several TCs.

In this rapidly changing environment, there is more than ever a need for stability for all stakeholders, and this comes through a harmonisation of technical solutions enabled by global open standards. In our area, only IEC standards guarantee the stability, interoperability and maintenance required for assets with high operational life, while still leaving a large space for innovation.

Value of data has become one of the most critical factors of success and enabling analytic capabilities will become mandatory for most if not all sectors in energy. Even if central data processing will remain an important part of the solution, as data volumes and complexity of processing increase (almost exponentially), and more and more decisions need to be made locally and resiliently in near-real-time, central solutions will not suffice and therefore edge-

processing is foreseen as the solution of the future and IEC TC 13 will evolve its activities to cover this area in our standards.

D. MARKET DEMAND

Provide a list of likely customers of the standards (suppliers, specifiers, testing bodies, regulators, installers, other committee's etc.). Do not specify company names, only categories of customers.

The users of TC 13 standards are equipment manufacturers, system providers, electricity generation, trading, transmission, distribution and retail companies, meter operators (multiple energy types), meter data agents, legal metrology bodies, testing institutes and end users. These stakeholders need standards that cover all aspects of metering, load-control and systems and facilitate development of equipment with common characteristics, which lower costs and effort for all stakeholders. Whilst taking into account differences in the operating environment and infrastructure.

TC 13 standards are globally recognized, and use of our standards continue to expand on all continents. IEC and CENELEC work closely together through the Frankfurt cooperation agreement. The majority of IEC TC 13 standards are directly adopted as European standards (EN) some of which are harmonised (mandatory). More rarely CENELEC produce standards that are adopted by IEC TC 13 but this is a possible path in some cases. The same applies for ANSI standards in North America where IEC TC 13 and ANSI will seek a collaboration for co-branding standards when requested and supported by national committees, which already has been the case for a number of IEC TC 13's 62056-series of communications standards. Many other countries (ex. India, South Africa) base their national standards on IEC counterparts and TC 13 always seeks to work with these national committees to obtain a good alignment, beneficial for all stakeholders.

IEC TC 13 is a market-driven committee having limited resources. We therefore will launch new standardisation activities only if there is a wide support from the market. This means that not only the IEC directives must be respected, but we also expect a strong support from the national committee that submit NPs and provides a project leader.

E. SUSTAINABLE DEVELOPMENT GOALS

Indicate the Sustainable Development Goals (SDGs) that are addressed by work within the committee. Indicate each SDG Indicator affected (reference spreadsheet available at <https://www.iec.ch/SDG/>, and provide specific information about how the committee is addressing the SDG. Consider both direct and indirect impacts of the work of the committee.

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| ☐ GOAL 1: No Poverty | ☐ GOAL 10: Reduced Inequality |
| ☐ GOAL 2: Zero Hunger | ☒ GOAL 11: Sustainable Cities and Communities |
| ☐ GOAL 3: Good Health and Well-being | ☒ GOAL 12: Responsible Consumption & Production |
| ☐ GOAL 4: Quality Education | ☐ GOAL 13: Climate Action |
| ☐ GOAL 5: Gender Equality | ☐ GOAL 14: Life Below Water |
| ☐ GOAL 6: Clean Water and Sanitation | ☐ GOAL 15: Life on Land |
| ☒ GOAL 7: Affordable and Clean Energy | ☐ GOAL 16: Peace, Justice Strong Institutions |
| ☐ GOAL 8: Decent Work & Economic Growth | ☐ GOAL 17: Partnerships to achieve the Goals |
| ☒ GOAL 9: Industry, Innovation & Infrastructure | |

F. TRENDS IN TECHNOLOGY AND IN THE MARKET

Utilities and grid operators are facing a double challenge to handle the switch in the energy mix to include a large amount of intermittent renewables, while maintaining a very high level of available electricity for all types of uses. Finding a balance between variable production and consumption, as well as taking into account recent advances in energy storage technology, requires the adaptation of both transmission and distribution grids. Energy storage can come from stationary batteries but also from electric vehicles with vehicle to grid (V2G) capacity, for instance. To avoid massive and costly grid reinforcement, one of the single most important tasks is to develop and adopt new digital technologies to dynamically operate the grid and TC 13 activities is in the heart of this process.

Smart meters are used not only for billing of energy services but also for load-control (aka flexibility or demand-response) via local near-real-time interfaces and this is specified in IEC 62056-7-5. The data acquired by the meters is also used for analytics, which directly contribute to decide regarding investment, planning and operations, therefore being highly valuable for utilities. As utilities can't

invest everywhere at the same time, smart meters help them define priorities and therefore already very much contribute to making the smart grid a reality. For example, digital control of EV chargers, making sure that they charge at night-time and in off peak moments, means that utilities can avoid making massive investment in new grid capacity.

The advent of distributed energy resources or DERs, changing consumption types and patterns (EV-charging, heat-pumps, cooling, smart connected homes and buildings and so on), new market rules and grid codes, plus rising expectations from end-consumers are all challenges we have to meet. They have led the areas of smart metering, load-control, distribution, grid operation and energy-management for buildings and homes to become intimately linked. We can no longer work in silos. New standards will be required for these areas, but this can only happen through the coordination between the different technical committees involved. IEC TC 13 contributes to this process and has initiated and actively contributes to several joint activities with other TCs. We work with IEC TC 23/SC 23K, which standardizes energy efficiency products for a variety of installations, including smart connected buildings. We also cooperate with TC 57 which develops some of the core standards for the smart grid and with TC 69, which prepares standards for the charging of EVs. We all operate under the coordination of the System Committee for Smart Energy (SyC Smart Energy).

Several new technological advances will become beneficial for equipment and systems, comprising those designed according to IEC TC 13 standards. But it also presents considerable challenges for integration into existing infrastructures and the migration path represents a considerable challenge in terms of timing and investment for grid and site operators.

Some of the more important trends seen from IEC TC 13 perspective are outlined below:

- Solid-state power electronics: integration of this technology allows for near-real-time load-control of various equipment, large and small, both in industry and in the residential area. It also represents a new and powerful source of disturbances, such as fast dynamic switching and non-linear load-conditions, with a potential impact on metrology and operations/need for protection of smart meter equipment;
- Submeters and measurement equipment dedicated to flexibility and load-control services: this equipment is being seen by legal and regulatory bodies as essential for the development of services in open and local energy markets. However, when used for billing purposes, tracking and control of services delivered, this equipment will require certification and in-service control, which for a large part fall under IEC TC 13 scope;
- Grid Edge computing capabilities enabled by the latest generation of technology for embedded systems will open up for a wide area of new use cases, allowing near-real-time resilient local decision making, contribute to both grid operation and end-consumer services in a multi-stakeholder ecosystem. There is a strong need for standardisation in this area to guarantee interoperability between the various solutions in the market;
- Digital substations are becoming a reality for both TSOs and DSOs and virtualisation of grid functions will bring operational efficiency. New grid functions require interconnection between metering/load control equipment and substations, which in turn will drive the market for products compliant to IEC TC 13 standards supporting virtualised infrastructures;
- Cyber security for equipment and systems is both a legal and business continuity obligation and IEC TC 13 standards must continuously evolve to keep up with new types of threats. In the past advanced cryptographic data security algorithms were the requirement, but nowadays security by design goes further and TC 13 shall work with industry and IEC/ISO experts on these matters. A singular new threat comes from quantum computing and requirements to protect equipment against this threat must be assessed and implemented in the standards;
- DC metering and test equipment: we currently see a surge in particular for electric vehicle station equipment (EVSE) and DER and TC 13 standards will need to adapt and evolve to cover all requirements in this area, which need to be carried out in collaboration with other TCs;
- MVDC/LVDC grids: still an emerging trend albeit we start to see MVDC projects and as these develop there is a need for both sub metering and metering for billing;
- new architectures, in particular modular and multi-part meters with the various functions implemented in more than one physical device;
- new types of instrument transformers with low power digital interfaces, leading to meters with digital Sample-Value inputs;

- new communication and IoT technologies, including LPWAN, mesh networks and advances in 5G/6G cellular technology;

As meters and load management equipment are continuously powered, a low power consumption is essential to limit technical losses keeping self-heating to a minimum in order to satisfy equipment life expectancy.

Electricity meters and load management equipment are designed to work 24/7 over extended periods with no or little human intervention. They are installed throughout and at the edge of the electrical network in widely differing environments. Therefore, they must meet strict mechanical, climatic, environmental, electrical and safety requirements to perform as expected in any of these environments. Even though system complexity continues to increase, reliability must be maintained at the highest possible level, which requires continuous improvement of equipment functional and service life testing.

The role of smart meter systems and load-control is essential for operation of market processes and considered cardinal by authorities, regulators and environmental bodies in order to raise awareness of end-users and assist them in the management of energy thereby contributing to efficient and economic use of natural resources

G. SYSTEMS APPROACH ASPECTS (SEE DIRECTIVES PART 1 ANNEX SO)

Given the interconnected nature of the energy sector, TC 13 seek to operate through a system approach as smart metering and load control has become an essential part of smart grids and the path to an all-electric and connected society.

Therefore, the following liaisons are confirmed:

- with TC 8, to address issues on system aspects of electrical energy supply;
- with SC 23K: to develop common architectures for load-control and electrical energy efficiency involving automated metering infrastructures;
- with TC 38, to address the impact of new instrument transformers with low voltage analogue and digital interfaces;
- with TC 56, to meet the industry requirements for standards for accelerated reliability testing;
- with TC 57, to address data exchange between systems, to harmonize data models and protocols;
- with TC 66, to further improve the safety standards for metering equipment;
- with TC 69, to help cover billing aspects linked to metering under legal metrology and in order to make suitable TC 13 communication protocols for potential data and control signal exchange between meter systems and EV recharging infrastructures;
- with SC77A, to address EMC, in particular low frequency conducted phenomena;
- with TC 85, to co-ordinate specifications for power quality functions of meters and metering functions for network analysers;
- with SyC LVDC,
- with SyC Smart Energy, to co-ordinate specifications in the areas of Smart Grid and Smart Energy, in particular in the perspective of developing guidelines and standards for flexibility and clean energy and to improve coordination between TC 13 and various other TCs involved in smart grids.
- With ISO/JTC 1 SC41 which works on Internet of Things matters and related applications that may cover the measurement and control of electrical energy;

One new liaison is being considered:

- with TC 65 for industrial load control as this TC already has identified the need for a closer relationship with TC 13 to extend some of the TC 13 standards that cover load control;

Externally, TC 13 will maintain the type A liaisons:

- with the DLMS User Association
- with OIML, the International Organization of Legal Metrology;

- with ECOS, the European Environmental Organization for Standardization.

TC 13 is also member of ACEC, the IEC advisory committee to provide input on electromagnetic compatibility requirements for metering equipment.

H. CONFORMITY ASSESSMENT

All publications issued by IEC TC 13 are made in accordance with the requirements related to the conformity assessment aspects as specified within clause 33 of part 2 of ISO/IEC directives. Moreover, the publications are not dependant or intended to be used for IEC Conformity Assessment Systems likely IECEE, IECEx, IECQ and IECRE.

TC 13 standards specify requirements as well as test methods that allow repeatable and reproducible test results.

TC 13 standards are developed in order to comply with legal metrology requirements as defined both by OIML and by regional organisations such as WELMEC.

I. 3-5 YEAR PROJECTED STRATEGIC OBJECTIVES, ACTIONS, TARGET DATES

STRATEGIC OBJECTIVES 3-5 YEARS	ACTIONS TO SUPPORT THE STRATEGIC OBJECTIVES	TARGET DATE(S) TO COMPLETE THE ACTIONS
Switch edition of all new projects to IEC OSD tool	All convenors and Project Managers to initiate standards documents using the tool. Help can be requested from IEC and TC 13 officers as needed.	2028
Implement the current IEC TC 13 work program according to the planned schedule	Complete and manage the publication at the targeted dates of active projects: IEC 62052-11 ED3 Electricity metering equipment - General requirements, tests and test conditions - Part 11: Metering equipment	2027
	IEC 62052-42 ED1 Accuracy test method for static electricity meters under dynamic load conditions	2028
	IEC 62053-21 ED3 Electricity metering equipment - Particular requirements - Part 21: Static meters for AC active energy (classes 0,5, 1 and 2)	2027
	IEC 62053-22 ED3 Electricity metering equipment - Particular requirements - Part 22: Static meters for AC active energy (classes 0,1S, 0,2S and 0,5S)	2027
	IEC 62053-23 ED3 Electricity metering equipment - Particular requirements - Part 23: Static meters for reactive energy (classes 2 and 3)	2027
	IEC 62053-24 ED3 Electricity metering equipment - Particular requirements - Part 24: Static meters for	2027

	fundamental component reactive energy (classes 0,5S, 1S, 1, 2 and 3)	
	IEC TS 62053-25 ED1 Electricity metering – Particular requirements for meters for connection through LPITs.	2026
	IEC 62053-26 ED1 Electricity metering equipment - Particular requirements - Part 26: Static revenue grade sub-meters for AC active energy (classes 0,5, 1, 2) and fundamental component reactive energy (classes 0,5S, 1S, 1, 2 and 3)	2027
	IEC 62055-52/AMD1 ED1 Electricity metering - Payment systems - Part 52: Standard transfer specification (STS) - Physical layer protocol for a two-way virtual token carrier for direct local connection	2027
	IEC 62056-1-0 ED2 Electricity metering data exchange - The DLMS/COSEM suite - Part 1-0: Smart metering standardisation framework	2027
	IEC 62056-5-3 ED5 Electricity metering data exchange - The DLMS/COSEM suite Part 5-3: DLMS/ COSEM application layer	2027
	IEC 62056-6-1 ED5 Electricity metering data exchange - The DLMS/COSEM suite Part 6-1: Object Identification System (OBIS)	2027
	IEC 62056-6-2 ED5 Electricity metering data exchange - The DLMS/COSEM suite Part 6-2: COSEM interface classes	2027
	IEC TS 62056-6-9 ED2 Electricity metering data exchange - The DLMS/COSEM suite - Part 6-9: Mapping between the Common Information Model message profiles (IEC 61968-9) and DLMS/COSEM (IEC 62056) data models and protocols	2027
	IEC 62056-8-5 ED2 Electricity metering data exchange - The DLMS/COSEM suite - Part 8-5: Narrow-band OFDM G3-PLC communication profile for neighbourhood networks	2027

	IEC 62056-8-11 ED1 Electricity metering data exchange - The DLMS/COSEM suite – Part 8-11: Communication profile for Wi-SUN field area mesh networks	2025
	IEC62056-11-1 ED1 Electricity metering data exchange - The DLMS/COSEM suite – Part x-xx: Requirements for data model and data format for revenue grade sub-meters used for billing of electrical energy	2027
	IEC62056-11-2 ED1 Electricity metering data exchange - The DLMS/COSEM suite – Part x-xx: Requirements for data model and data format for revenue grade sub-meters used for billing of flexibility services and for control of Smart Appliances	2027
	IEC 62057-2 ED1 Test equipment, techniques and procedures for electrical energy meters - Part 2 Portable meter test units (PMTUS)	2028
	IEC 62059-31-1 ED2 Electricity metering equipment - Dependability - Part 31-1: Accelerated reliability testing - Elevated temperature and humidity	2027
	IEC 62059-32-1 ED2 Electricity metering equipment - Dependability - Part 32-1: Durability - Testing of the stability of metrological characteristics by applying elevated temperature	2027
Closely monitor main market requests, technology developments and initiatives that may affect metering and load control with a need for new or amended standards.	Adjust the work program as needed so that the necessary standards can be delivered in a timely manner. Apart from the maintenance of active publications, several new work items have been submitted or are under way and will require decision of National Committees to develop new International Standards, Technical Specifications or Technical Reports.	Yearly base As decided during the plenary meeting 2023
	Embedded software requirements (TC 13)	2025
Co-operate with other IEC TCs and non-IEC standardization organizations to ensure that system aspects are properly addressed	Maintain / Reinforce or reconsider the liaisons with the following organisations: SC 23K (energy efficiency): continue work toward a common vision for load-control architectures including smart meter infrastructure, develop adequate SRD, TS or standards;	2025/2026

	TC 38 (instrument transformers): Interfacing to digital Low Power Instrument Transformers (LPITs);	Prospective
	TC 56 (Dependability) to improve the usability of “accelerated reliability testing” standard;	Prospective
	IEC TC 57 (substations) reactivate the liaison following update of TS 62056-6-9 and launch new interoperability standard via JWG16;	2026
	TC 65 (Industrial-process measurement, control and automation): establish liaison based on request from this TC to improve TC 13 standards to cover load control requirements;	2025/2026
	TC 66 (Safety) to update the safety standard according to the state of the art;	Prospective
	TC 69: to ensure that TC 13 standards are referenced as preferred metering and load control solutions for EV recharging infrastructures whenever applicable, in particular the 62056 series. Evolve and develop new the TC 13 standards as required by infrastructure for electromobility.	Permanent
	SyC System Committee on Smart Energy to ensure efficient coordination of standardization at system level, enhance wider use of TC 13 produced standards	Permanent
	Actively maintain the liaison with the DLMS User Association, for contributions directly to WG 14, JAHG 17 and TC 13 meetings	Permanent
Partnering with industry players, promote the use of IEC standards worldwide, in particular the use of open standards for meter data exchange guaranteeing interoperability	Maintain / reinforce the relations with external organisations such as: ANSI (USNC TAG 13), where TC 13 consider the opportunity to cobrand certain standards EU DG ENER, DG CONNECT	Depending on opportunities (events, solicitations, ...)
Co-operate with industry consortia, seeking the opportunities to adopt industry standards and to make sure that the standards developed respond to actual market needs.	Assess new fields of interest. Conditioned by the requirement that these standards must be open and IP free. Examples are the various new communication standards coming to the market.	Yearly base
Note: The progress on the actions should be reported in the RSMB.		