BUSINESS PLAN

CENELEC/TC or SC	Secretariat	Date
69X	BE	2013-01-21

TC title: **Electrical systems for electric road vehicles**

A Background

CLC/TC 69X was reactivated in 2010 to prepare European standards for road vehicles, totally or partially electrically powered from self-contained power sources, including charging infrastructure for these vehicles. In order to optimize standardization efforts and to avoid parallel work, CLC/TC 69X will in the first place follow up the standardization work on global level performed by IEC/TC 69. CLC/TC 69X will facilitate and expedite the adoption of international standards drafted by IEC/TC 69 as European standards. New standardization work on European level by CLC/TC 69X will only be undertaken if there is a specific European need for this.

IEC/TC 69 aims to prepare international standards for road vehicles, totally or partially electrically powered from self-contained power sources, including charging infrastructure for these vehicles, and for electric industrial trucks.

IEC/TC 69 'Electric Road Vehicles and Industrial Trucks' was established in 1969 to prepare international standards for road vehicles, totally or partially electrically propelled from self-contained power sources, and for electric industrial trucks. IEC/TC 69 was formed at a time when advancements in technology made electric automobiles a practical alternative to traditional IC vehicles that were under regulatory pressure with respect to environmental and petroleum supply concerns. Initial work was conducted by five working groups in the areas of vehicle performance measurement, motors and motor controllers, onboard electrical energy storage, power supply and chargers (infrastructure), and hybrids. Several standards and technical reports were issued during the 1980s.

During the 1990s, auto industry involvement in IEC/TC 69 has contributed to the development of charging system architecture standards consistent with auto industry and national demonstration programmes in anticipation of commercialization. This activity has resulted in cooperative standards development with other IEC TC/SC's and ISO. Informal coordination has also been established with SAE, CENELEC, CEN and JEVA.

New developments for the 21st century, with the advent of hybrid and fuel cell vehicles, create new opportunities for the continuation of the work of IEC/TC 69, maintaining its published standards and preparing new documents in the areas where such is deemed useful.

B Business Environment

B.1 General

In urban traffic, due to their beneficial effect on environment, electrically propelled vehicles are an important factor for improvement of traffic and more particularly for a healthier living environment. Electrically propelled vehicles (this term encompasses battery-electric, hybrid and fuel cell vehicles) are a key element of the future personal and fleet transportation product offerings of vehicle manufacturers. Growing concern for the environment and for the security of energy supply will necessitate further development of electrically propelled vehicles, with new markets emerging in industrializing countries where energy supply issues are a strong incentive for this technology.

B.2 Market demand

In the near term, the direct customers of the IEC/TC 69 standardization work will be the automotive, electrical equipment and electric utility industries. The automotive industry and component suppliers will utilize TC 69 standards for vehicle hardware and system architecture for future models. The electrical equipment and utility industry will utilize IEC/TC 69 standards for developing EV charging equipment and planning growth. Furthermore, the availability of IEC/TC 69 standards will facilitate regulatory processes by governments and local authorities.

B.3 Trends in technology

Auto manufacturers and national EV demonstration programmes during the past decade have proven the feasibility of electric road vehicle technology. Limited progress in battery performance and limited commercial availability of advanced batteries initially had biased the offer in battery-electric vehicles towards smaller vehicles in specific applications like urban environments where range and speed are consistent with technological capability. Recent interests in battery technology and the emergence of plug-in hybrid vehicles however have led to a new interest in the grid-recharged electric vehicle and its infrastructure.

B.4 Market trends

The electric drive train technology with its on-board components is also used in hybrid vehicles which are now penetrating the market, as well as in fuel cell vehicles which are being developed for the future. Grid connecting infrastructures are also applicable to plug-in hybrids which offer interesting opportunities and which are presenting themselves as a key step towards electrification of transport. There is a strong demand for the development of standardized infrastructures for this application.

Additionally, CLC/TC 69X standardization work and general EV technology is applicable to electric industrial trucks and electrically propelled buses.

B.5 Ecological environment

Electrically propelled vehicle technology, which encompasses battery-electric, hybrid and fuel cell vehicles, has the potential for improving environmental conditions particularly in congested urban areas through allowing the deployment of zero-emission vehicles, and for enhancing energy security, through diversification of primary energy sources, improved energy efficiency and more effective environmental control techniques.

B.6 Involvement of societal stakeholders

Societal stakeholders (e.g. ECOS), Cooperating Partners (e.g. CECAPI) and the European Commission are present in CLC/TC 69X as observers. As the products covered by CLC/TC 69X standards are intended for a broad diffusion, end user input is considered a key issue for the committee.

B.7 Involvement of SMEs

Although the automotive market is dominated by large Original Equipment Manufacturers corporations, there is a considerable involvement of SMEs as component suppliers, particularly in areas which are of direct relevance to the TC's activities such as energy storage and subsystems for charging infrastructure. These SMEs are often on the forefront of innovative research.

C System approach aspects

The growing interest for electric vehicles has been reflected in the participation to IEC/TC 69, with new countries opting for P-status and the number of active experts growing considerably.
The ongoing liaison-cooperation with ISO/TC 22/SC 21 is essential for the realization of efficient vehicle-related standards and needs to continue. The same applies for the collaboration with IEC/TC 21/SC 21A, IEC/SC 23H and IEC/SC 23E on relevant matters. Furthermore, work should be coordinated with IEC/TC 77, CISPR and ACEC where appropriate to ensure compliance with EMC/RFI standards. In view of the development of forthcoming standards for fixed electrical installations for electric vehicles, the establishment of a liaison with TC 64 and TC 17D is advisable.
The collaboration with ISO/TC 22/SC 21 will be formalized by the signature of a collaboration agreement between the two committees; for all work the most appropriate liaison mode will be pursued.
Furthermore, a coordination between principal technical committees involved in electromobility (including TC 64, SC 23E, SC 23H, TC 21, TC 17D, ISO/TC 22/SC 21 and SC 3) will be sought.
As for the collaboration with IEC/TC 105, most of the work relevant for TC 69 will be treated within the liaison with ISO/TC 22/SC 21 since this ISO committee is now dealing with all automotive fuel cell matters.

D Objectives and strategies (3 to 5 years)

The current work plan of IEC/TC 69 can be summarized as follows. Activities on vehicle performance, vehicle safety and hybrid vehicles have been transferred to ISO/TC 22/SC 21.

- WG2: Motors and motor controllers

Developed several related technical reports during the 1980s. The work programme was changed to inactive status pending review by IEC/TC 69/ISO/TC 22/SC 21 Steering Group in 1996. Inactive status changed to active by Steering Group in December 1999, but activities as yet unresumed.

- WG3: On-board electrical energy storage system

All work on batteries is now being performed by JWG IEC TC69/TC21/SC21A, who has published the standards 62660-1 and 62660-2 on Lithium batteries.

A new standard 62576 on EDLC has been published by IEC/TC 69.

- WG4: Power supplies and chargers

Three parts of the conductive charging standard 61851 were completed and are now under revision.

The second edition of 61851-1 was published in 2010, but is now proposed for revision, in concordance with the review process of the other parts of the standard.

61851-21 will be concentrating on specific EMC and grid interaction aspects, the other vehicle-related aspects being transferred to a new ISO project 17409; for both IEC 61851-21 and ISO 17409 a Mode 5 collaboration is foreseen.

The parts 61851-23 and 61851-24 pertaining to d.c. charging are now also being drafted.

A third part of 61851 will focus on light electric vehicles.

Standards on communication between vehicle and grid are being prepared in joint working group with ISO/TC 22/SC 3 and ISO/TC 22/SC 21, resulting in the ISO/IEC 15118 series.

Work on inductive charging standards has been started with by the IEC 61980 project team.

E Action plan

Future work programme will monitor the effectiveness of existing IEC/TC 69 standards related to electrically propelled road vehicles. The suitability of the basic standard requirements (for battery-electric vehicles)- to other electrically propelled vehicles such as neighbourhood electric vehicles, industrial electric vehicles, electric trucks and buses, hybrid vehicles (including plug-in hybrids) and fuel cell vehicles needs to be carefully monitored for future consideration.

F Useful links to CENELEC web site

TC home page giving access to Membership, TC/SC Officers, Scope, Publications, Work programme [password-protected area].
http://www.cenelec.eu/dyn/www/f?p=104:7:3668030267993939::::FSP_LANG_ID,FSP_ORG_ID:25,664#1

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