CHINA ELECTRIC VEHICLE FIRE SAFETY INDEX



Version 2023 R1 9th April 2024

CHINA ELECTRIC VEHICLE FIRE SAFETY INDEX (C-EVFI) PROVISION

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PREFACE

Adhering to the development of electric vehicles is the fundamental strategic thinking of our country's automotive industry. After years of development, China's electric vehicle industry has taken a leading position globally in terms of scale, production and sales volume, and technology, and has established a complete R&D system for electric vehicles and their components. However, in recent years, the frequent occurrences of electric vehicle fires have attracted extremely high levels of social attention. The incidents involve various types of electric vehicles (battery electric vehicles, plug-in hybrid electric vehicles, and extended-range electric vehicles), and the fires related to electric vehicles are characterized by suddenness, severe damage, and difficulty in extinguishment. This has become the third major issue hindering the sustained and healthy development of the electric vehicle industry, following range anxiety and charging anxiety. Statistics from electric vehicle fire incidents over the years show that battery system faults, high voltage system faults, and electronic/electrical component faults are the three main vehicle-related factors for electric vehicle fires. Therefore, research on the fire safety of electric vehicles is urgently needed to ensure their higher quality and safer, more stable development. RIC VEHICLE FIRE SAFETY INDEX

To address this, China Merchants Testing Vehicle Technology Research Institute Co., Ltd. (hereinafter referred to as CMVR) took the lead in developing the China Electric Vehicle Fire Safety Index (C-EVFI). Starting from the safety protection of drivers and passengers, it independently, objectively, and fairly assesses the overall safety performance of vehicles in the event of a fire. It provides a combined qualitative and quantitative, intuitive, and quantifiable assessment standard, offering a reference for vehicle R&D and consumers' purchasing and usage. This initiative continuously promotes the technological advancement of China's electric vehicles and fosters the high-quality development of the electric vehicle industry.

The Electric Vehicle Safety Testing and Assessment Management Center (hereinafter referred to as the Management Center) reserves all rights to C-EVFI. Without permission from the Management Center, it is strictly forbidden for any institution other than companies conducting their own technical development tests to use C-EVFI for public or commercial testing or assessment of electric vehicle products. The C-EVFI assessment results and scores are only valid for the product models assessed. Parties using the C-EVFI assessment results are responsible for their authenticity, completeness, and accuracy. The Management Center reserves all rights to legal recourse.



Chapter I: GENERAL PROVISIONS

1 Purpose

Based on extensive and multi-dimensional research, C-EVFI synthesizes considerations of the performance and safety risks involved in the actual use of electric vehicles, providing an intuitive and quantifiable assessment method. Its aim is to establish a comprehensive system for testing and evaluating the fire safety of electric vehicles throughout the entire lifecycle, to independently, objectively, and impartially reflect the overall technical level and development trend of fire protection for electric vehicles in China.. It offers technical support for the safety supervision and product development of electric vehicles, provides references for consumers in purchasing and using vehicles, and guides the industry in continuously advancing its technical standards.

2 Management Organization

The management organization of C-EVFI is the Management Center jointly established by China Merchants Testing Vehicle Technology Research Institute Co., Ltd. in conjunction with the National Engineering Research Center for Electric Vehicles of Beijing University of Technology, the Automobile Committee of China Association for Consumer Products Quality and Safety Promotion, the Firefighting Committee of China Association for Consumer Products Quality and Safety Promotion, and Shenzhen One Account Intelligent Technology Co., Ltd., which is responsible for the organization and implementation of C-EVFI. The Management Center is divided into the working leadership, comprehensive management and experimental research councils, with their main responsibilities as follows:

- Working leadership Council

Responsible for the top-level design, resource coordination and promotion of C-EVFI.

- Comprehensive management Council

Develops annual work plans and financial budgets; approves assessment plans; supervises the assessment process; approves and publishes assessment results; manages external communication and publicity work, etc.

- Experimental Research Council

Analyzes industry development trends and product installation information; draft a list of products for assessment; revises testing and assessment plans; implements testing and assessment; manages organizational process assets; conducts external technical exchanges, etc.

3 Assessment Items 前着某人交受全指数

The 2023 R1 version of the C-EVFI evaluates the fire safety of electric vehicles after battery thermal runaway incidents from four dimensions: safety warnings, emergency rescue, fire protection, and data monitoring, with details seen in the "China Electric Vehicle Safety Index (Protocol)".

4 Logo

The following fonts and logos have been applied for registration by C-EVFI.



5 Statement

The Management Center reserves all rights to C-EVFI. Without permission from the Management Center, except for tests conducted for technical development by the companies themselves, it is strictly prohibited for other organizations to use C-EVFI to conduct public or commercial tests or assessments on electric vehicle products.

The assessment results and scores of C-EVFI are only valid for the product models evaluated. All parties using the C-EVFI assessment results are responsible for their truthfulness, completeness, and accuracy. The Management Center reserves the right to improve the test items, testing methods, and scoring methods, and the final interpretation right belongs to C-EVFI.

The Management Center reserves all rights to legal action.

Chapter II: OPERATION MANAGEMENT

1 Workflow

The workflow of C-EVFI assessment is detailed in Appendix 1.

2 Vehicle selection

2.1 Selecting Principle

The M₁ category electric vehicles and hybrid electric vehicles (excluding fuel cell electric vehicles) that are sold and used in China are all prospective assessment objects for C-EVFI. The selection of the types to be tested and their configurations takes into account brands and price , comprehensively considering factors such as market share, annual sales volume, market attention, fire incident rates, and the application of new technologies.

2.2 Selection Method

The vehicles selected for assessment are primarily chosen through random sampling, while also accepting voluntary applications from vehicle manufacturers.

2.3 Vehicle Acquisition

The vehicles evaluated are all independently purchased from the market through formal channels by the Management Center.

2.4 Voluntary Application of companys

When the vehicle manufacturing company voluntarily applies for C-EVFI assessment, it shall submit the voluntary application form (see Appendix 2) to the Management Center, along with the relevant information (see Appendix 3). The

Management Center evaluates the received applications and accepts those that meet the criteria, sending the C-EVFI Assessment Notification Letter (see Appendix 4) to the applying companies.

The vehicles evaluated are all independently purchased from the market through formal channels by the Management Center. The assessment results are publicly released by the Management Center.

2.5 Publicity of Vehicle Types to be Evaluated

After the proposed assessment vehicle types are determined, the Management Center will publicly announce the proposed assessment vehicle type list through official channels.

3 Assessment Management

3.1 Assessment Notice

Upon the vehicle's arrival at the assessment site, the Management Center sends the C-EVFI Test Assessment Notification Letter (see Appendix 4) to the vehicle manufacturing company, informing the company of relevant assessment information. The vehicle manufacturing company must confirm the vehicle parameters and assessment plan with the Management Center within 5 working days after receiving the notification letter. If there is no reply within 5 working days, the assessment plan is considered to be accepted. If a recall event occurs, the company can provide relevant materials and proceed with the defect rectification in accordance with the recall notice.

3.2 Test Preparation

All preparatory work before the test, including preparation of test vehicles, test

equipments and locations, confirming of test conditions, and confirmation of vehicle status, is the responsibility of the Management Center's test research group. Other personnel are not allowed to perform any operations.

3.3 Test and Assessment Implementation

The test assessment, data processing and assessment report writing are completed by the professionals of the experimental research group of the Management Center according to the test and assessment protocol.

4 Management of Assessment Results

4.1 Assessment Results

The assessment results are divided into five levels, as detailed in Table 1. The Management Center will release the overall assessment results along with the assessment results for each individual test item simultaneously.

Table 1. assessment Results and Score Distribution

	Assessment Results	Score
CHINA	$\hat{\mathbf{x}}$	CLE FI ^{S290} SAFET
	$\bigstar \bigstar \bigstar \bigstar$	85≤S<90
	$\bigstar \bigstar \bigstar$	70≤S<85
	$\bigstar\bigstar$	60≤S<70
	*	S<60

4.2 Results Review

The Comprehensive management Council of the Management Center supervises

and manages the assessment process, and reviews and approves the assessment results.

During the review of the assessment process and the approval of the results, if operations are discovered that affect the validity of the assessment results, the test assessment can be reorganized, and relevant information can be explained in the assessment results.

4.3 Results Publication

The Management Center publicly releases the assessment results through a dedicated website, WeChat official account, and mini-program, and regularly holds press conferences to summarize the historical assessment results.

4.4 Results Use

The evaluation results published by C-EVFI are available for use by relevant parties free of charge, with the source of the information to be indicated when used.However, when used for commercial purposes, the user shall explain to the management Center the place and form of the use in advance, and the Management Center has the right to impose restrictions on it.

5 Fund management

The Management Center allocates special funds annually for testing, evaluation, and operational management to ensure the long-term independent operation of C-EVFI.

6 Management of External Personnel During the Testing Process

(a) To observe the testing process, personnel from vehicle manufacturing companies must submit an application to the Management Center at least 5

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working days in advance. Upon approval, they are required to wear a "Company Visitor Badge" to enter the testing site. During the observation, they must strictly adhere to the on-site management regulations.

Media outlets seeking to conduct interviews during the testing must submit their application and personnel list to the Management Center at least 5 working days in advance. Only after obtaining approval can they enter the testing site. Media personnel entering the test site must wear a "Media Visitor Pass" and can only take photos within the time and areas designated by the Management Center.

(c) Other individuals wishing to observe the testing process must apply to the Management Center at least 5 working days in advance. Upon receiving approval, they will be required to wear a "Temporary Visitor Badge" to enter the testing site and must strictly adhere to on-site management regulations during the observation.

7 Appeal and Handling of Objections

If vehicle manufacturers have objections to the evaluation results, they can submit their objections to the Management Center within 10 working days after the results are published, using the C-EVFI Test Assessment Objection Appeal Form (see Appendix 5). If no written appeal is submitted within 10 working days, it will be considered as no objection. The Management Center should respond within 30 working days of receiving the manufacturer's appeal form, and the response will only address the compliance of the testing process. If objections still exist, the Management Center will organize a formal meeting for discussion between the appealing unit and technical experts.

8 Processing of Test Data

All data and image materials related to the C-EVFI assessment process can be provided for a fee. If there is a need to purchase, an application must be submitted to the Management Center, and the corresponding fees must be paid in accordance with the regulations.

9 Communication and Publicity Activities

The Management Center holds at least one C-EVFI thematic seminar and technical exchange event annually, or combines it with the assessment results release event. Vehicle manufacturers and related institutions can engage in various forms of exchange and cooperation with the Management Center.

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Appendix 1: C-EVFI Assessment Workflow

Appendix 2: Company Voluntary Application Form

Vehicle Manufacturer				
Vehicle Model/Name/Year				
Configuration/Sales/Model Sales Ranking				
Model Announcement Number				
Market Launch Date				
Other Configurations/ Sales/Model Sales Ranking		The		
	-E			
	Contact Person		Telephone/ Mobile	/
Contact Information for the	Postal Code		Fax	
	Corresponde nce Address	以灾	B	音指数
CHINA ELECTR	IC VEHI	CLE FIRE	SAFE	TY INDEX
Manufacturer's Opinion (Official Seal)				

Vehicle Manufacturer Information				
Company Name				
(with seal)				
Company Address				
Chinese Brand/				
Model				
Vehicle Type				
	Vehicle Technical Para	meters		
	External Dimensions			
Whole Vehicle	Curb Weight			
I echnical	Gross Vehicle Weight			
Specifications	Rated Passengers			
	Product Model			
	Manufacturer			
Energy Storage	Type of Energy Storage			
Device Single Cell	Device			
Device Single Cen	Nominal Voltage/			
ch lei ch zi	Nominal Capacity	ンロイオルま		
	(V/Ah)	人又王伯敳		
	Product Model	DE CAEETV INDEV		
	Manufacturer	IKE SAFETT INDEX		
	Nominal Voltage/			
Energy Storage	Nominal Capacity			
System Assembly	(V/Ah)			
	Energy Density			
	(Wh/kg)			
	Configuration Type			
Electric Drive	Manufacturer			
Electric Drive	Model			
System	Туре			

Appendix 3: Vehicle Specification Information Form

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Voltage (V)	
Rated Power (kW)	
Peak Power (kW)	
Maximum Torque	
(N·m)	



Vehicle Manufacturer			
Vehicle Model/Name			
Assessment Time			
Assessment Vehicle Information	Vehicle Model	Vehicle Identification Number (VIN)	Test Item
Contact Person	Telephone	E-mail	Assessment Location
	We will soon con assessment on the	nduct a comprehen	sive fire safety test
Description	that your company will confirm the vehicle parameters within 5 working days after receiving this letter, and feed back the stamped vehicle parameter information sheet to the China Electric Vehicle Fire Safety Index Management Center. If there is no response by the due date, the actual		
	parameters of the vehicle will be applied.		

Appendix 4: C-EVFI Assessment Notification Letter

Appendix 5: C-EVFI Assessment Objection Appeal Form

