

# Comments and Suggestions on Finalized Draft on “Specific Requirements for Electric Power Train of Vehicles”

---





## About AEEE

Alliance for an Energy Efficient Economy (AEEE), is one of the leading organizations in India that works on creating awareness about energy efficiency as a resource. It is a policy advocacy and energy efficiency market enabler with a not-for-profit motive. We advocate for data-driven and evidence-based energy efficiency policies and research.

We foster a culture of energy efficiency in India, working with industry, government and civil society organizations. AEEE advocates for Thermal Comfort for All, and a Lean-Mean-Green philosophy to design and construct net-zero energy-water-waste built environments, Sustainable Transportation and robust Energy Data Framework for better policy-making and implementation, to build a culture of energy efficiency in India. We are committed to achieve India's energy transition for a climate-resilient and energy secure future and meet India's commitments to the 2030 nationally determined goals (NDC) and UN sustainable development goals (SDG).

# Safety Standards for Electric Vehicles Globally

In the recent past, the world has witnessed a trend of improvement in Electric Vehicle (EV) technology and falling prices of battery technology. Together these two factors are going to result in more EV adoption in the coming future. Hence, there is a need to introduce a robust standardisation on safety requirements of EVs in order to prevent any possible incident, which might result in negative consumer sentiments towards EVs. On a global scale, the International Organisation for Standardisation (ISO) has published comprehensive documents on specifications and requirements for electric vehicles' safety and operations.

Table 1: Some ISO standards on EV safety

ISO Standard		Description
ISO	6469-1:2019	Electrically propelled road vehicles – Safety specifications – Part 1: Rechargeable energy storage system (RESS)
ISO	6469-2:2018	Electrically propelled road vehicles – Safety specifications – Part 2: Vehicle operational safety
ISO	6469-3:2018	Electrically propelled road vehicles – Safety specifications – Part 3: Electrical safety
ISO	12405-4:2018	Electrically propelled road vehicles – Test specification for lithium-ion traction battery packs and systems – Part 4: Performance testing
ISO	17409:2020	Electrically propelled road vehicles – Conductive power transfer – Safety requirements
ISO	18300:2016	Electrically propelled vehicles – Test specifications for lithium-ion battery systems combined with lead acid battery or capacitor

Source: (International Organisation on)

Table 1 lists some of the safety standards and requirements regarding safety of EVs which have been published by ISO.

## EV Safety Standards in India

The automobile industry in India has faced a huge setback due to the imposition of nationwide lockdown to prevent the spread of the Covid-19 pandemic. As per industry experts, the maximum utilisation of the manufacturing facility of different players is around 60% currently. However, the industry is hopeful to bounce back to normal operating conditions soon. It is

a well-accepted notion across the industry that EVs are going to witness increased demand. In particular there will be a huge demand in the segment of electric 2 and 3 wheelers for the purpose of commercial fleet operations. The recent launch of the progressive Delhi EV policy is a clear indication from the government that driving EV adoption across different consumer segments is one of the top priorities.

EVs should also undergo the same rigorous safety testing, and meet the same safety standards required for conventional vehicles. In this regard, the move of the government to bring a standardisation document on “Specific Requirements for Electric Power Train of Vehicles” is commendable. This document is in addition to the existing standard “**AIS-038(Rev.1):2015**”, which describes the construction and functional safety requirements of EVs.

## Suggestion/ Comments

The draft “**AIS-038 (Revision 2)/DF**” is detailed covering the following two aspects:

- » Requirements of a vehicle with regards to specific requirements for the electric power train
- » Requirements of a vehicle Rechargeable Electrical Energy Storage System (REESS) with regard to its safety

We believe that there is one safety concern that the draft does not take into consideration is the aspect related to the silent operation of EVs. This will be a major concern when EVs will navigate through crowded places, which will be a common sight specially in India. This can result in danger for the pedestrians. One possible option to address this issue is by implementing a solution, which will make EVs emit audible sounds at low speeds. Such options are available in some EVs including Chevrolet Volt and Nissan Leaf (US Department of Energy).

The aspect of safety related to silent operation of EVs should not necessarily be a part of “**AIS-038 (Revision 2)/DF**”, as it covers the specific requirements for electric power train of vehicles. However, it can be considered an important functional requirement, which can be included in “**AIS- 038(Rev.1):2015**”.





Office Address:

37 Link Road, Ground Floor, Lajpat Nagar III,  
New Delhi-110024, T: +91-11-41235600  
E: [INFO@AEEE.IN](mailto:INFO@AEEE.IN) W: [WWW.AEEE.IN](http://WWW.AEEE.IN)