

Electrical equipment inspection system for housing and features of home fires in Japan

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1. Introduction

- ◆ In Japan, a system for inspecting home electrical equipment is made obligatory by law.
 - ◆ The range of inspection is applicable to electrical equipment up to outlets where the electricity supplied by the electric power company (outdoor and indoor wiring).
 - ◆ An accident involving electrical equipment occurs extremely rarely, and safety is maintained.
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- ◆ Although home fires have decreased by about 14% as compared to those 10 years ago, fires from electrical appliances are increasing and have become the primary cause of fire.
 - ◆ Most of the fires from electrical appliances were due to carelessness and inadequate management of the user.
 - ◆ How to draw attention of the user is the challenge.



Incomplete insertion
of a plug



Tracking



Ignition of a mobile battery

2. Electrical equipment inspection system in housing

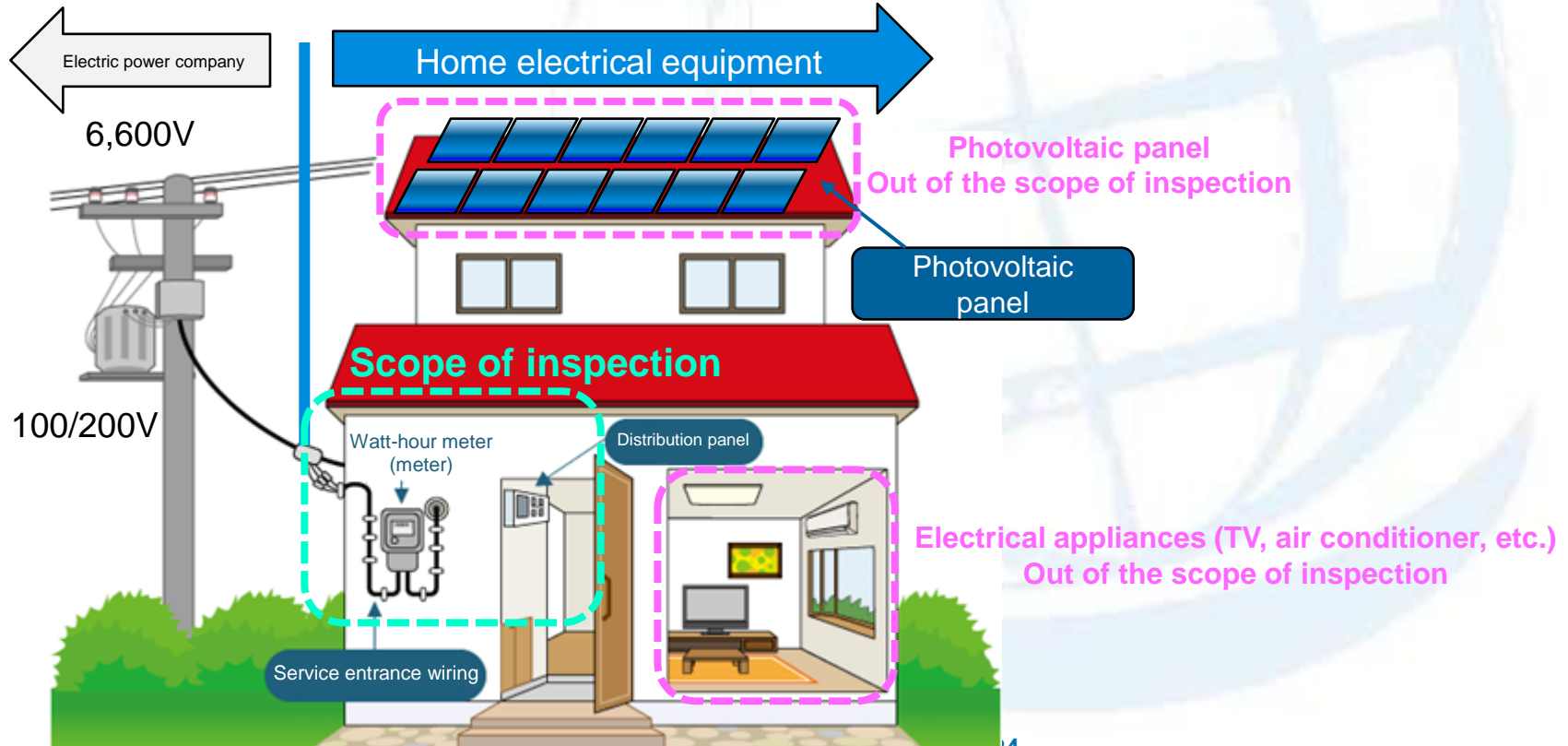
(1) Overview

- ◆ To make it obligatory for electric power companies to establish a system to carry out inspection on compliance with the "Technical Standards for Electrical Equipment."
- ◆ Inspection may be outsourced to institutions registered at the national government.
- ◆ In this case, the electric power companies are exempted from obligations.

Type of inspection	Completion	Regular
Frequency	At the time of new construction/addition	At least once every 4 years
Implementer	Power electric companies or institutions registered at the national government	
Method of inspection	<ul style="list-style-type: none"> • Visual inspection of the service entrance wiring and distribution panel • Confirmation of the state of insulation of wiring • Measurement of ground resistance • Confirmation on whether the installation work is done according to the drawings 	<ul style="list-style-type: none"> • Visual inspection of the service entrance wiring and distribution panel • Confirmation of the state of insulation of wiring • Examination of defective parts by interviewing • Raising awareness of electrical safety

(2) Scope of inspection

- ◆ Electrical equipment (wiring and wiring devices) that uses electricity supplied by the electric power company is subject to inspection.
- ◆ Power generators and electrical appliances (cords and electrical products) are not subject to inspection, and the owner is responsible for the maintenance of such appliances.



(3) Status of implementation of inspection

- ◆ Since the inside of a living room is a private space where the inspector is not allowed to access, defective parts are checked by interviewing.
- ◆ The percentage of the home owner being present during inspection is about 50%. If the owner is absent, visual inspection of the outdoor service entrance wiring and measurement of leakage current are carried out.
- ◆ The percentage of non-compliance with the Technical Standards for Electrical Equipment is about 1 to 3%.

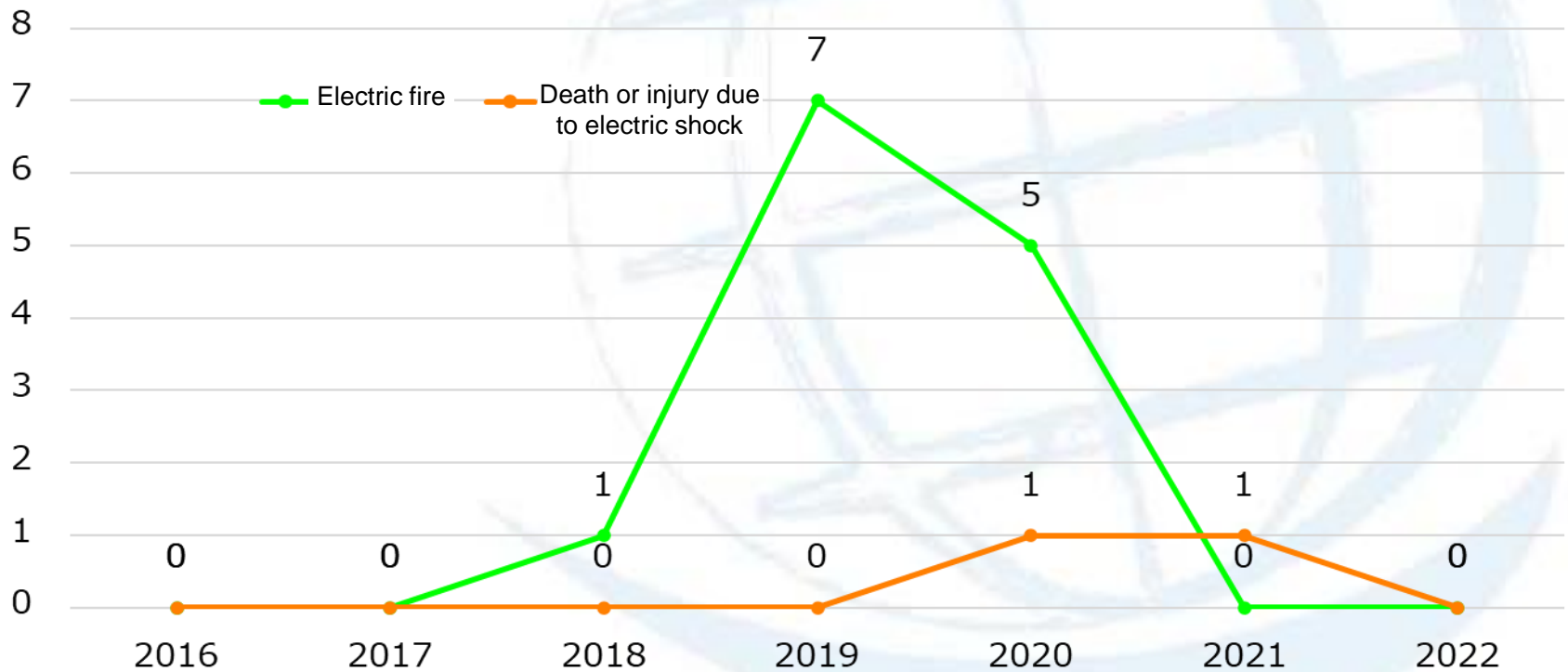


Confirmation of the state of insulation by means of measurement of leakage current

Figure cited from website of the Kanto Electrical Safety Services Foundation
https://www.kdh.or.jp/corporation/guest/resarch_guide.html

For reference: Transition of accidents of home electrical equipment

[cases]

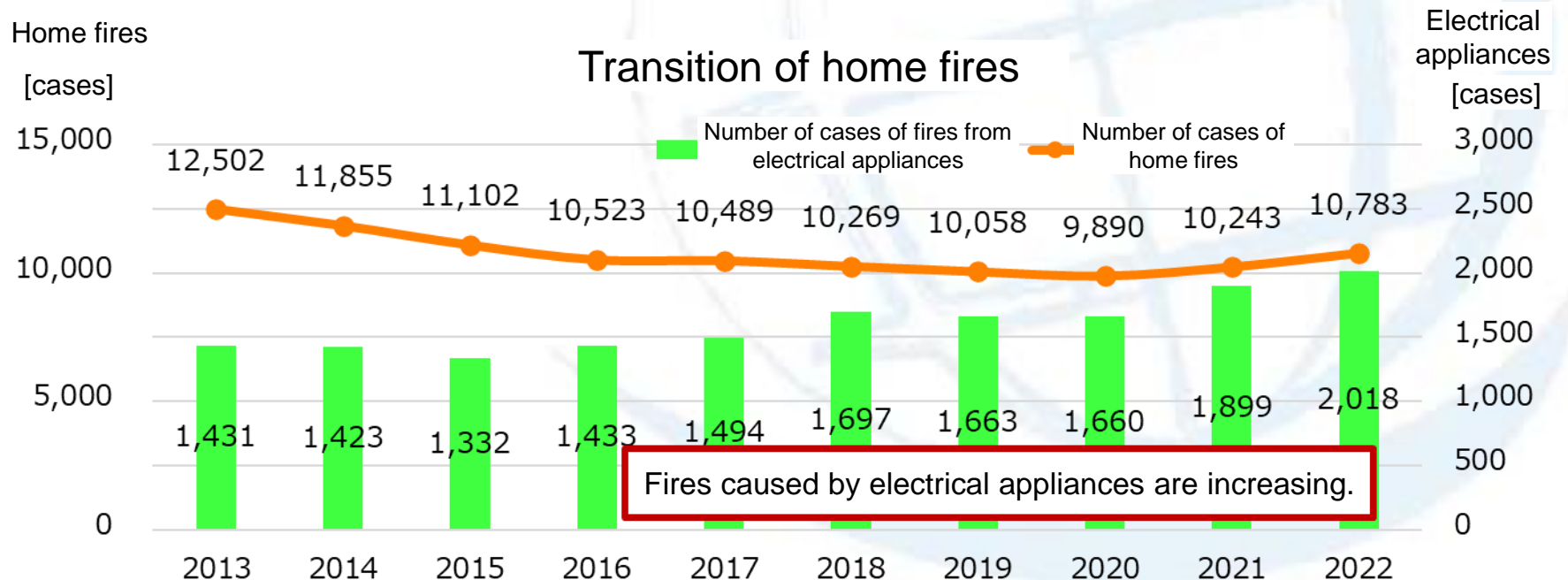


Accidents involving electric facilities for general use excerpted from the Electrical Safety Statistics of the Ministry of Economy, Trade and Industry

3. Home fires caused by electrical appliances

- ◆ In recent years, fires from electrical appliances* are increasing, increasing by about 40% during the period of 2013 to 2022, and have become the primary cause of home fire.
- ◆ About 80% of such fires were due to inappropriate use and poor maintenance and management.

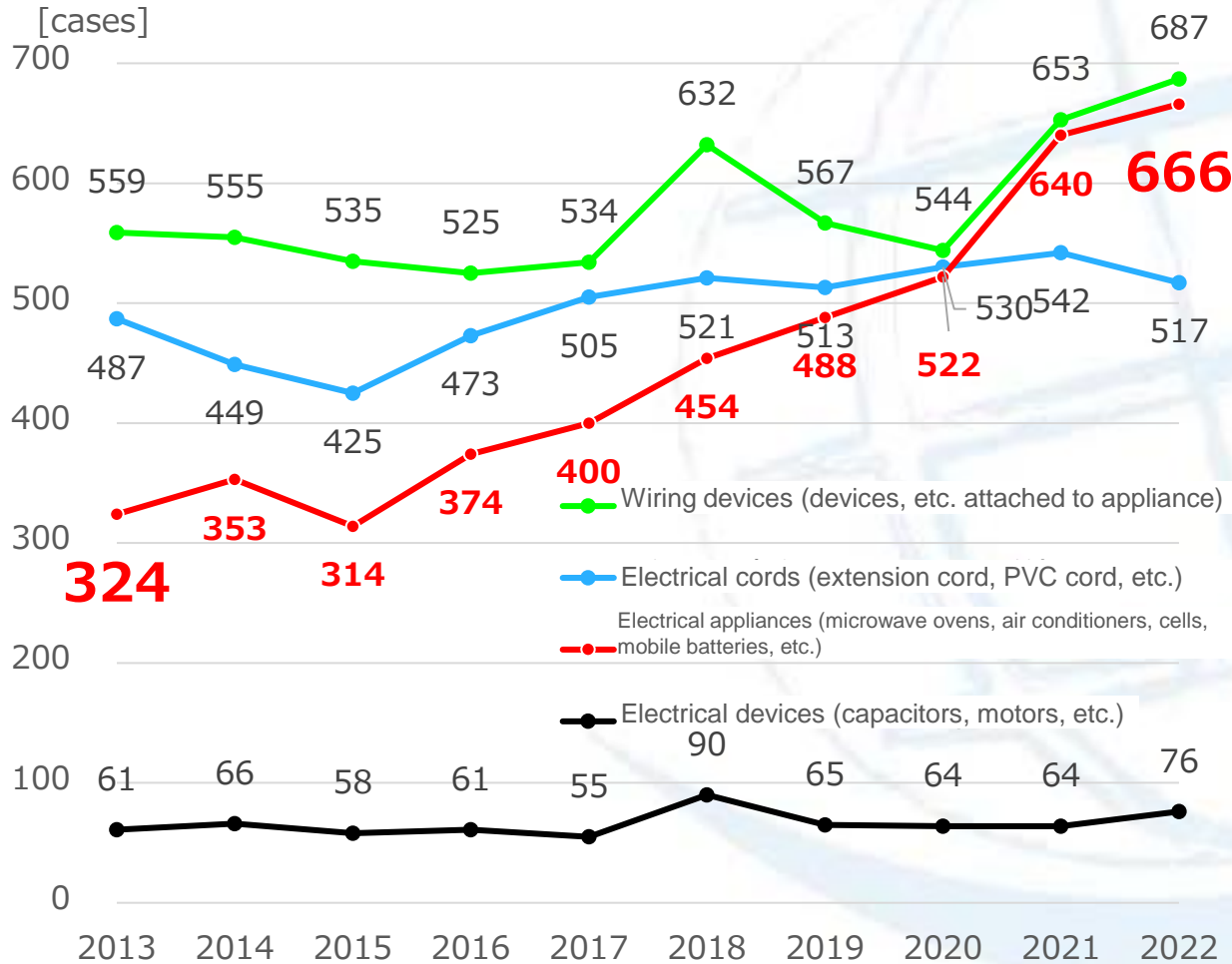
* Electrical appliances include microwave ovens, air conditioners, power cords, batteries, mobile batteries, etc. which are purchased by the user and are used in the home.



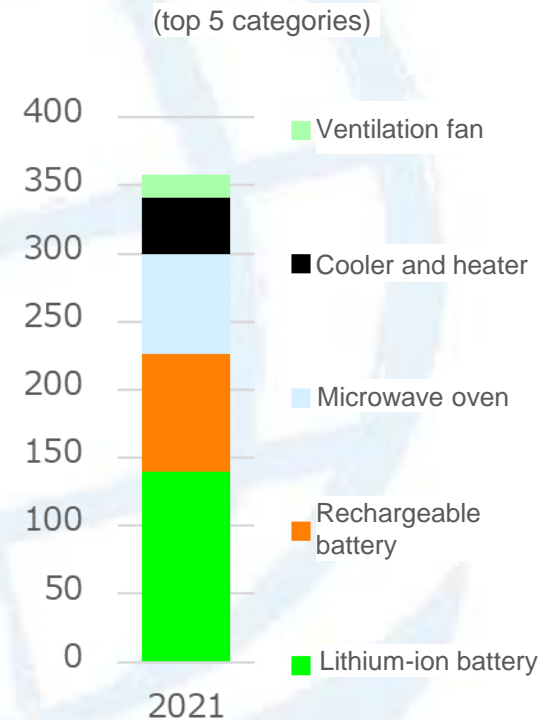
Cited from the Fire Prevention and Safety Measures Study Meeting Related to Home Electric Fires, Fire and Disaster Management Agency

https://www.fdma.go.jp/singi_kento/kento/post-141.html

Number of cases of home fires involving electrical appliances (according to the source of ignition)



Details of electrical appliances (top 5 categories)



Excerpted from the "Fire Report" published each year by the Fire and Disaster Management Agency of the Ministry of Internal Affairs and Communications

4. Activities for raising awareness of accident prevention

- ◆ The Electrical Inspection Associations Foundations carry out activities for raising awareness of electrical safety by using pamphlets, etc. when visiting homes for such home safety inspection.
- ◆ In the "Electricity Safe Use Month" of August every year, the Associations are engaged in the activities for raising awareness in cooperation with the national government, and in addition, are engaged in the prevention of home electric fires and electric shock accidents through public relations activities such as various types of events.



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