



ASIA-PACIFIC
LEGAL METROLOGY FORUM

24rd APLMF Meeting
Siem Reap, Cambodia

Economy Report - 2017

[Republic of Korea]

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SECTION 1 – Organisation and structure for metrology

Organisation Structures

Specialty	Scientific metrology	Legal metrology
Organization	Korea Research Institute of Standards and Science (KRISS)	Korean Agency of Technology and Standard (KATS)
Business unit	Measurement Standards Laboratory	Commercial Trade Standards
Manager		Dr. Mi-Ae, Choi
Location	Daejeon-si	Eumseong-gun, Chungcheongbuk-do

Relevant organizations

- [Korea Testing Certification](#)(KTC) – Type approval & verification of measuring devices
- [Korea Electrotechnology Research Institute](#)(KERI) – Type approval & verification of measuring device
- [Korea Association of Standards & Testing Organizations](#)(KASTO) – Association
- [Ministry of Food and Drug Safety](#)(MFDS) – Medical Devices
- [Ministry of Environment](#)(MoE) – Electric Vehicle chargers, Hydrogen station

Legislative Frameworks

Measures Act 2015

Enforcement decree of the Measures Act 2015 (presidential decree)

Enforcement rule of the Measures Act 2015 (ordinance of the ministry of trade, industry and energy)

20 regulations

- 10 technical regulations related to testing 12 MIs`
- 10 by-laws for implementation of legal metrology

International arrangements and engagement

The 40th Korea-Japan cooperation committee for Legal Metrology

(Sep. 7 ~ Sep. 8/Karuizawa, Japan)

The 52nd CIML meeting participation

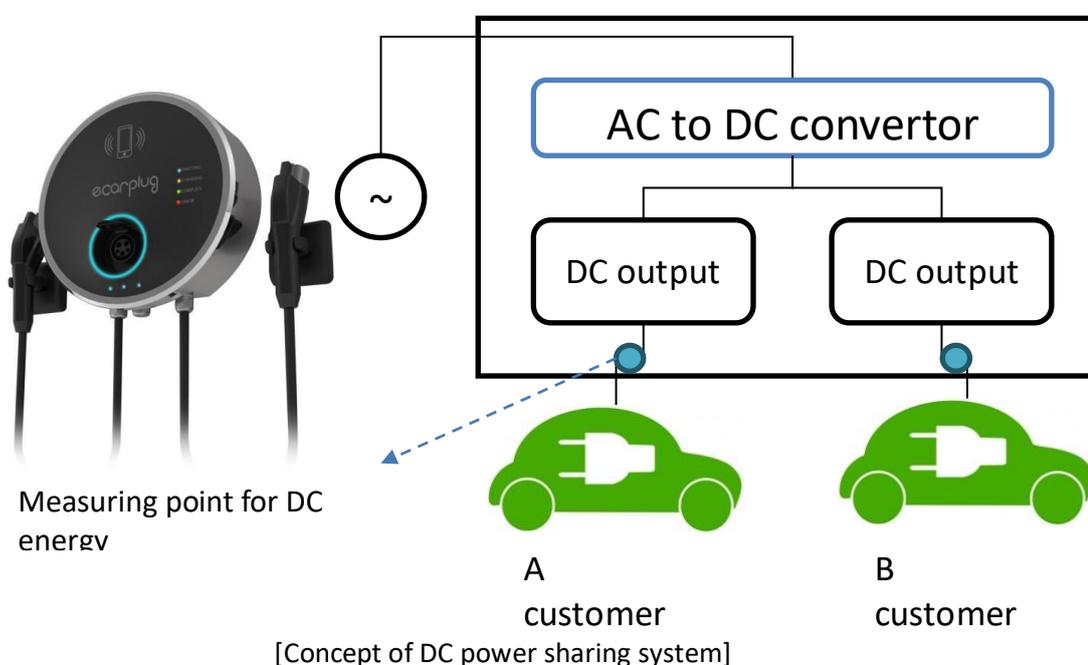
(Oct. 9 ~ Oct. 12/Cartagena, Colombia)

SECTION 2 – Key activities of 2016/17

Working with industry

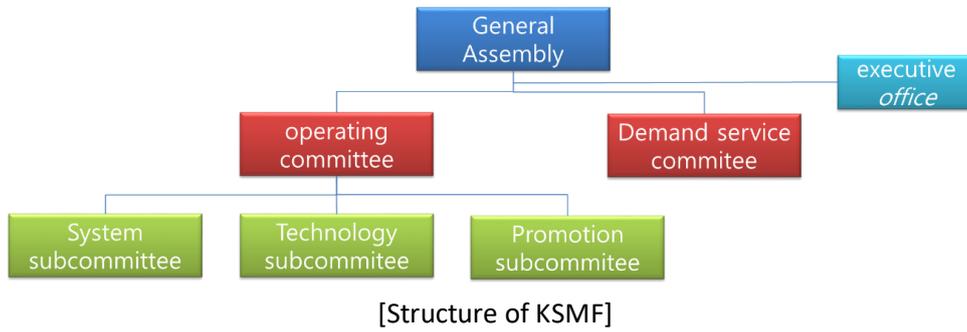
Preparation for legislation of Electric Vehicle

One of obstacles to EV distribution in Korea is lack of power supply outlets. Unlike conventional gas meters, a stand type EVSE has generally one connector to EV, which incurs inconvenience to customer especially in busy hours. In order to solve this problem, some manufacturers have developed power sharing system which has two or more connectors so as to charge more than two EVs at the same time. However, it becomes difficult to meter DC when it is converted from AC. Thus KATS is studying legal system, including type approval and verification, for DC meters used in the commercial market.



Foundation of Korea Smart Metering Forum (KSMF)

Energy consumption has become of an issue since entering the 4th industrial revolution. Smart metering is advanced technology which not only consumes energy efficiently, but also maintains transparency of energy usage to both manufacturer and consumer. In order to nurture measuring industry and to protect consumer’s interest, Korea Smart Metering Forum (KSMF) was founded on July 12, 2017. Participants are stakeholders including business operators, manufacturers, and consumers. KSMF’s goal is to establish standards regarding energy generation as well as collection and utilization of digital metering data. This will provide an opportunity to shift from operator-oriented energy market to consumer-oriented market.

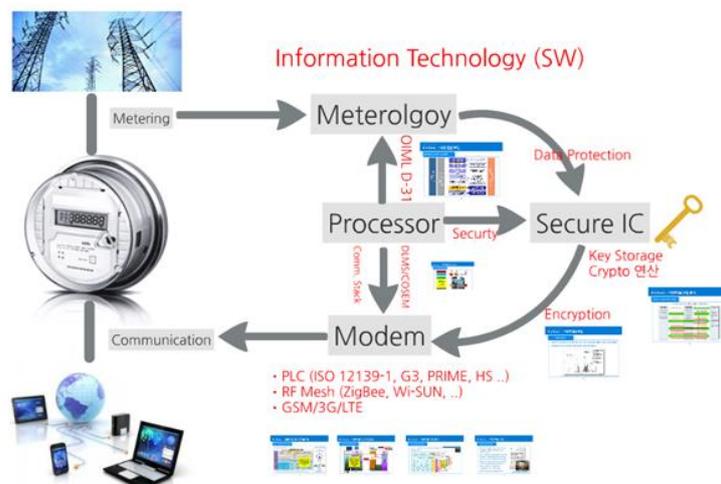


Overview of KSMF

- a. **Objective:** To provide cooperation platform through involvement of the industry, manufacturer, and consumer
- b. **Operation:** To exchange information on smart metering, technical requirements and international trends in the field of metrology, including AMI, Big Data, Cloud, etc.



[The 1st Korea Smart Metering Forum]



Protecting consumers

Conduct periodic market surveillance of the electricity meter and the pre-packaged product

KATS conducts market surveillance over measuring instruments and pre-packaged goods once a year. Seventeen types of the electricity meter were tested this year. The advisory committee determines whether retest should be conducted or whether corrective actions, including recall or withdrawal of approval be implemented for defective meters.

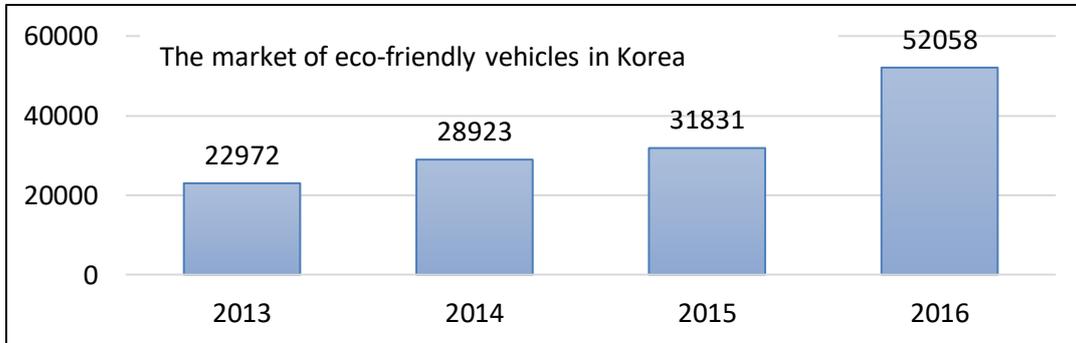
Also test and analysis were applied to 513 instant foods and household products which are closely related to daily lives. According to the result, fines are imposed to products lacking quantity.

Major projects - What we did and what we learned

SECTION 3 – Future focus

New initiatives planned (next 1-2 years)

A research on charger for Eco-friendly vehicles



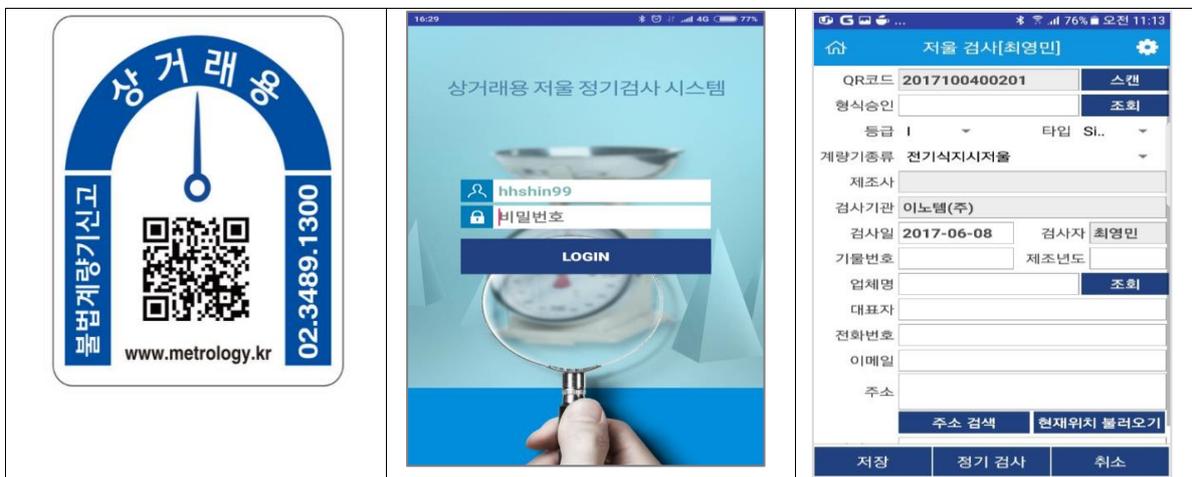
[Sales charts of eco-friendly vehicles]

Eco-friendly vehicle market has rapidly grown up between 2015 and 2016, and most of them are electric vehicles. It is planned to supply 1,400 fast chargers for EV by 2020, and 80 hydrogen stations for fuel cell electric vehicles. KATS has prepared technical requirements for EVSE which will be regulated from 2018. In addition to this, a research on hydrogen charger has initiated this year, and KATS also has participated in the revision work of OIML Recommendation.

Commercial NAWI monitoring system using mobile application

In order to maintain fair transaction in the market, the government officer monitors the commercial NAWI used in the markets once in every two year in Korea. However, since information gathering is inefficient in many aspects such as excessive human resource input in the field, non-integrated serial number of NAWIs, Korea is developing a futuristic monitoring system that uses mobile application which recognizes and reads the NAWI information through QR code. Once this project is developed by the end of this year, below mentioned points will be conducted.

- To test & secure the NAWI data, pilot projects will be launched to test effectiveness.
- IOS platform needs to be developed for Apple users.
- To improve the system, online open forum will be operated so as to share general information
- GPS tracking function needs to be added for the convenience sake of the inspector.



• [Mobile application for NAWI monitoring system]

Emerging issues – challenges and opportunities

Smart Metering

Challenges

- Need to raise awareness of the smart metering
- Advanced technology development of related industries

Opportunity

- Increase energy efficiency through real-time check of energy consumption
- Ensure fair commercial transaction of energy consumption