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METROLOGY FORUM
ONLINE MEETINGS
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Economy Report - 2020

Singapore

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SECTION 1 – Organisation and structure for metrology

Organisation Structures

Authority for Legal Metrology – Enterprise Singapore

Enterprise Singapore (ESG) is an agency under the Ministry of Trade and Industry responsible for facilitating the growth of local enterprises and building trust in Singapore products and services. ESG is also the national standards and accreditation body which develops and promotes an internationally recognised standards and quality assurance infrastructure. Singapore's Weights & Measures Authority comes under the Consumer Protection, Weights & Measures Division of Enterprise Singapore.

ESG plays an important role in protecting consumers and traders, by administering Singapore's Weights & Measures Programme which regulates the use of weighing and measuring instruments used for trade, and the net contents of pre-packaged goods. It ensures that a uniform and accurate system of weights and measures is used in Singapore, thereby ensuring fair trade and correct measurement for excise tax computation.

Custodian of National Standards

The National Metrology Centre (NMC) of the Agency for Science, Technology and Research (A*STAR) serves as the custodian of the national measurement standards in Singapore. It is responsible for the establishment and maintenance of Singapore's highest metrology reference standards traceable to the International System of Units established under the Metre Convention.

Legislative Frameworks

ESG administers the following legislation as part of the Weights and Measures Programme:

- Weights and Measures Act, Chapter 349
- Weights and Measures Regulations 2005
- Weights and Measures (Savings) Regulations 2005
- Weights and Measures Fees Regulations 2005
- Weights and Measures (Defences under Section 19) Regulations 2005
- Weights and Measures (Sales of Goods in Metric Unit) Order

International arrangements and engagement

ASEAN Consultative Committee on Standards and Quality (ACCSQ)

ESG participates in the ACCSQ's Working Group on Legal Metrology (WG3). The WG3 serves as a platform for ASEAN Member States (AMS) to learn from one another, to align and improve AMS' national legal metrology systems, and to ensure that technical barriers to trade associated with legal metrology are not introduced.

The 33rd WG3 meeting will be held virtually on 22 September 2020, covering agenda on (i) the harmonisation of verification procedures for weighing and measuring (WM) instruments, and for testing of pre-packaged products; (ii) study on the implementation of ASEAN Common Requirements on Pre-packaged Products by the ASEAN member states; and (iii) initiatives to raise awareness on the importance of legal metrology under the collaboration framework with PTB, Germany.

The working group is also exploring avenues for collaboration with scientific metrology experts under ASEAN's "Expert Group on Metrology" (EGM) to develop an integrated roadmap for metrology in ASEAN.

International Organization of Legal Metrology (OIML)

ESG is a corresponding member of the OIML and have been active users of the publications in setting the requirements for its legal metrology requirements. ESG will participate as an Observer at the 55th OIML Meeting which is slated to take place online from 20 – 22 October 2020.

SECTION 2 – Key activities of 2019/20

Working with industry

ESG undertakes regular process reviews, outreach and educational activities to heighten policy effectiveness and raise businesses' awareness of the requirements under the Weights and Measures Act and Regulations. The associated fees payable under the Weights & Measures Act/ Regulations were also recently revised, taking into consideration compliance cost to the industry and subsequently revised in May 2020.

ESG partners with businesses, trade associations, as well as other regulatory authorities to educate and share on regulatory requirements and changes pertaining to weights and measures.

Minimising business costs during COVID-19 pandemic - Dispensing with the Observance of the Duration of the Accuracy Label

Weighing and measuring instruments used for trade are required under the legislation to be verified annually, sealed and affixed with an Accuracy Label. The Accuracy Label indicates the period the instrument was last verified and has a validity of 12 months.

In April, the Singapore government introduced a series of enhanced safe distancing measures in view of the COVID-19 pandemic situation to limit human to human interactions and business activities (suspension of non-essential services).

ESG sought its Minister's approval to dispense with the observance of the Accuracy Label duration (from April – May) to allow the continued use of such instruments for trade, with the condition that businesses/traders will need to continue exercising all reasonable measures to ensure that any weighing or measuring instrument used for trade shall remain accurate and fair during this Extension Period.

Introduction of the "On-board Weighing System" (OBWS) for the Waste and Recycling Sector

The Environmental Public Health Act (EPHA) was amended in 2014 and introduced waste reporting for workplace waste, through the mandatory waste reporting (MWR) scheme administered by the Singapore's National Environment Agency. Since this year, the MWR was extended to include smaller establishments/developments/conventions where it becomes impractical and unproductive for the waste reading to be taken off-site at incineration plants located a distance away.

To overcome the challenges, the OBWS was introduced to enable waste reading to be ascertained on-site. ESG has been working with NEA and the industry to put in place control requirements to ensure the accuracy (is within specific tolerance) and oversight of the industry, should the instrument be used for trade.

Use of Master Meter for Verification of Flowmeters

Since January 2017, Singapore's Maritime Port Authority (MPA) mandated the use of Coriolis Mass Flowmeters (MFMs) system for custody transfer of bunker fuel in Singapore waters. Since its implementation, MPA has received positive feedback from the bunkering industry.

As with any measuring instruments, there is a possibility of drift in the MFM's accuracy after a period of usage, and periodic calibration may be required to ensure its accuracy. However, in the absence of a suitable MFM calibration facility in Singapore, sending the MFMs to overseas' facilities will be costly and may require prolonged operation downtime.

To circumvent these challenges, ESG, MPA, and the National Metrology Centre (NMC) have worked closely together with the industry to explore the option of MFM verification using a Coriolis Master MFM. The intent is to utilise the master meter to conduct periodic verification, to ascertain the in-use MFM's accuracy, which can help determine if calibration of the MFM is necessary. A Working Group has been formed with the aim to produce a Technical Reference to serve as a guide to stakeholders such as test service providers, on the requirements and procedures for MFM verification using a Coriolis Master MFM.

Protecting consumers

Market Surveillance on Pre-packaged Goods

ESG conducts active market surveillance on pre-packaged goods and conducted testing on multiple types of pre-packaged consumer goods that are readily available in the supermarkets.

The objective of the surveillance was to better understand the compliance landscape of the industry and identify the higher risk areas, before diving deeper to address potential industry gaps.

Routine Inspection on Weighing & Measuring Instruments

ESG continues to conduct routine inspections of weighing and measuring instruments used for trade purposes, for compliance with regulatory requirements. Inspections were made on instruments in places such as the wet markets, pawn shops, medical halls and petrol kiosks.

Major projects - What we did and what we learned

Digital Transformation - Digitalise the Administration of the Weights and Measures Programme

ESG adopted the Design Thinking approach to redesign its legal metrology IT system. The approach was taken to better understand the user experience, problems and opportunities involving each of the stakeholders during their encounters with legal metrology related activities. The approach is an iterative process, and involved the need to interview and observe stakeholders, then develop prototypes and seek further inputs before ascertaining the final solution.

The review prioritised instrument verification process, involving mainly the designated Authorised Verifiers (AVs), businesses and consumers, and the enforcement officers. Preliminary outcome revealed the need to (i) improve on the existing Accuracy Label (as an avenue to access information), (ii) enhance current system to support the redesigned processes and collect data for analysis, and (iii) enhance the enforcement approaches using data (collected via the enhanced system).

With enhanced and timely information to stakeholders, the above-proposed changes aims to:

- (a) Promote self-regulation in the long run through empowered and educated consumers;
- (b) Digitalize and streamline processes and records to enable more effective use of resources; and
- (c) Ensure transparency and consistency in regulatory and enforcement actions.

The transformation will rely heavily on a centralised database, supported by a robust system to collect, retrieve and analyse the information. The system is also the key touchpoint for all stakeholders. While the processes have been broadly mapped out, the project is still ongoing and ESG will be focused on building and rolling-out the system this year.

SECTION 3 – Future focus

New initiatives planned (next 1-2 years)

ESG intends to conduct increased surveillance on pre-packed goods in the market, on-site accuracy tests and mystery shopping to assess the industry's compliance, and enhance our outreach efforts towards consumers and businesses. Results of the surveillance will enhance existing policies to better administer the Weights and Measures Programme.

Concurrently, ESG will be working to digitalise the administration of the programme, working with stakeholders to redesign processes and develop a new system.

Emerging issues – challenges and opportunities

Singapore is exploring ways to develop effective market surveillance approaches for pre-packaged goods and weighing and measuring instruments. This is becoming increasingly relevant as new technologies and products are ever more rapidly being introduced to the market.

Singapore is also reviewing our Weights & Measures Act and Regulations to ensure that they remain effective and relevant to societal needs. The review will encompass areas such as scope of regulatory purview including the types of instruments to be regulated, appropriateness of enforcement powers and alignment to international recommendations.