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## Economy Report - 2019

### *Singapore*

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## SECTION 1 – Organisation and structure for metrology

### Organisation Structures

#### Authority for Legal Metrology – Enterprise Singapore

Enterprise Singapore (ESG), formerly known as SPRING Singapore 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 last WG3 meeting was held from 15 – 17 October 2019 in Bandar Seri Begawan, Brunei Darussalam. Fruitful discussions were held on the harmonisation of verification procedures for weighing and measuring (WM) instruments, and for testing of pre-packaged products. Initiatives include the study on the implementation of ASEAN Common Requirements on Pre-packaged Products by the ASEAN member states and the metrology awareness event to raise 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.

## SECTION 2 – Key activities of 2018/19

### Working with industry

#### Launch of the Singapore Standards SS 648 Code of Practice for Bunker Mass Flow Metering (elevation of TR 48:2015 – Technical Reference on Bunker Mass Flow Metering)

ESG contributed to the development of Singapore's Technical Reference for Bunker Mass Flow Metering (TR 48), to specify the procedures and requirements for use of Mass Flowmeter (MFM) systems installed on board bunker barges. Since January 2017, Singapore's Maritime Port Authority (MPA) mandated the use of MFMs for custody transfer of all bunker fuel in Singapore water. ESG has been supporting this initiative through the acceptance of MFMs for custody transfer applications in Singapore.

The implementation of MFM systems for bunkering has presented significant improvements in productivity, reliability, and accuracy, as well as helped to increase port capacities to handle larger volumes of bunker fuel transacted in Singapore waters. The TR 48 will be upgraded into a full Singapore Standard in November 2019 and will encompass the full spectrum of bunker

fuel transacted in Singapore, multi-meter set up, enhancement of the role of surveyor and zero verification process.

#### Development of Technical Reference for Liquefied Natural Gas Bunkering (TR 56)

Under the direction of Singapore's Chemical Standards Committee, ESG has worked on the development of a Technical Reference for Liquefied Natural Gas (LNG) Bunkering (TR 56).

The TR aims to help Singapore industries transit to the usage of more sustainable fuels for bunkering, in view of the International Maritime Organisation's implementation for a 0.5% global sulphur cap in 2020. It is applicable to bunkering of both seagoing and inland trading vessels, and covers the procedures and requirements for safety, competency and custody transfer measurements of LNG delivery.

TR 56 was launched in April 2017, and is currently being reviewed by the Working Group. It is used as a provisional standard for guiding industry members in implementing LNG bunkering procedures. The TR is intended to be adopted into a full Singapore Standard taking into consideration industry experience and feedback from the initial implementation period.

### **Protecting consumers**

ESG undertakes regular outreach and educational activities to raise businesses' awareness of the requirements under the Weights and Measures Act and Regulations. For example, ESG partners with businesses, trade associations, as well as other regulatory authorities to educate and share on regulatory requirements pertaining to weights and measures.

#### Education on Regulatory Requirements to Businesses through the Small and Medium Enterprise (SME) Centres

ESG had initiated a briefing to educate more than 60 business advisors (BAs) from all 13 SME centres islandwide on the legal metrology requirements administered under the Weights and Measures Act. The intent was to aide new and existing businesses in understanding their responsibilities to be compliant with the regulatory requirements.

SME Centres provides small and medium enterprise with easy access to business advisory services. Apart from the provision of business diagnosis and capability workshops, it also provides information on the government schemes.

The briefing conveyed requirements on the annual verification of weighing and measuring instruments used for trade, and net content of pre-packaged goods. The BAs were also informed of the ongoing enforcement efforts by the administrating agency and the penalties involved if an offence has been made out.

### Heighten Awareness of the Weights and Measures Programme through New Marketing Materials

New marketing materials were developed to enhance the information retained by businesses during each engagement. These were distributed during briefings, routine surveillance, and to suppliers of weighing and measuring instruments for trade use.

Additionally, a wobbler was developed to step up on consumer awareness of the programme. The wobblers were affixed on retail weighing instruments to remind consumers to always look out for the Accuracy Label – an indication of a verified instrument. It also facilitate consumers in providing their feedback to the authority.

### Market Surveillance on Pre-packaged Goods

ESG conducts active market surveillance on pre-packaged goods and conducted testing on multiple 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. In Singapore, such instruments are required to be verified annually. 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 had adopted the Design Thinking approach 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 project is ongoing and will be the focus for the following year.

## **SECTION 3 – Future focus**

### **New initiatives planned (next 1-2 years)**

ESG will continue to work with the MPA and technical experts from industry to enhance the technical references to accommodate the use of mass flowmeters for measuring of low sulphur content marine bunker fuel and LNG. Other area of focus include the use of mass flowmeters at oil terminal (upstream of the oil & gas supply-chain) and the use of reference standards – master meters for validation/verification of the existing bunker tankers mass flow metering systems.

ESG also intends to conduct further testing on pre-packed goods in the market, to gather data in order to conduct an analysis of the compliance rates, as well as enhance outreach and awareness of consumers and traders in this area.

Concurrently, ESG will be working to digitalise the administration of the programme, working with stakeholders to redesign processes and implement new system to streamline work processes. It aims to promote self-regulation in the long run and promote transparency and consistency in the regulatory and enforcement actions.

### **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.