



ASIA-PACIFIC  
LEGAL METROLOGY FORUM

**24th APLMF Meeting  
Siem Reap,  
Cambodia**

## Economy Report

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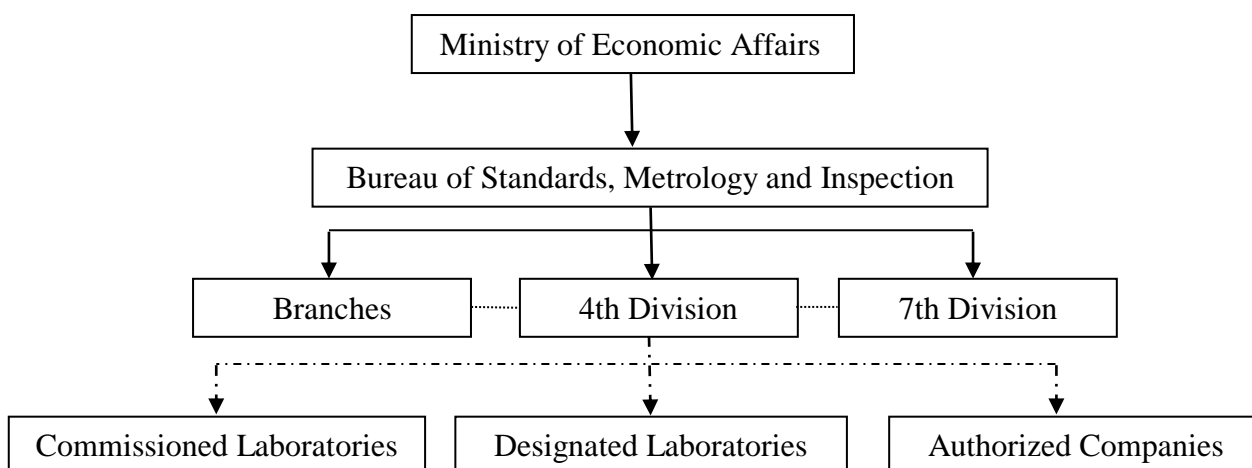
### *Chinese Taipei*

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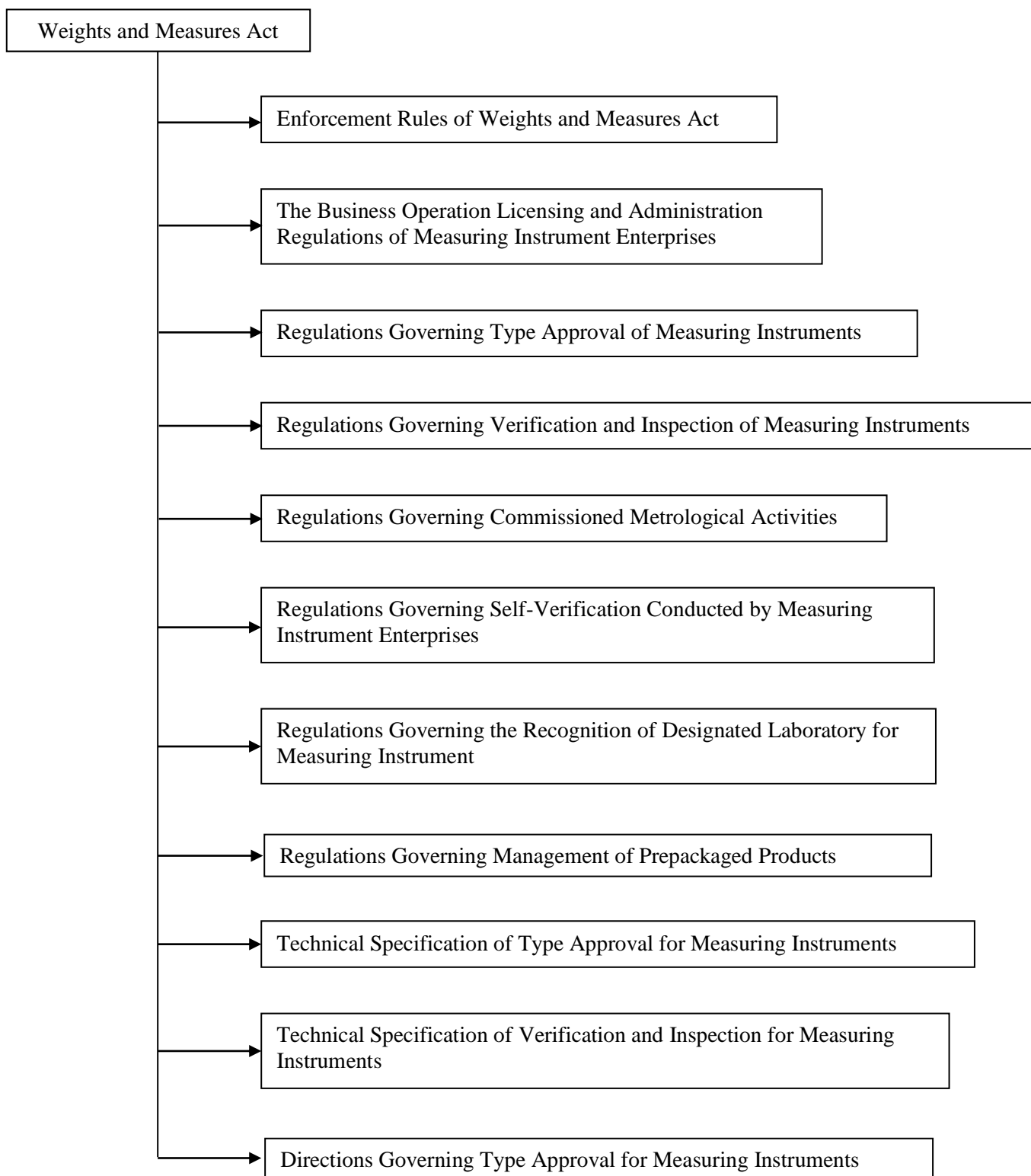
## SECTION 1 – Organisation and structure for metrology

### Organisation Structures



Specialty	Scientific Metrology			Legal Metrology
Organization	Center for Measurement Standards	Institute of Nuclear Energy Research	Chunghwa Telecom Laboratories	Bureau of Standards, Metrology and Inspection
Field	Physical and chemistry metrology	Ionizing radiation metrology	Time and frequency metrology	legal metrology policy and legal metrology affairs
Director	Dr. Tzeng-Yow Lin	Dr. Yin-Peng Ma	Dr. Wen-Hau Yang	Dr. Ming-Jong Liou
Location	Hsin Chu	Tao Yuan	Tao Yuan	Taipei

## Legislative Frameworks



## SECTION 2 – Key activities of 2015/16

### Working with industry

#### Legislation Affairs

Technical specification of verification and inspection for diaphragm gas meters and technical specification of type approval for diaphragm gas meters have been revised. The amendment aim to improve the durability and accuracy of diaphragm gas meters. Corresponding to the amendment, Directions Governing Type Approval for diaphragm gas meters has also been revised to facilitate the procedure of tests against diaphragm gas meters.

#### Examinations for Metrological Technical Personnel

Six examinations were held in 2017, including three for Class A metrological technical personnel and three for Class B metrological technical personnel. So far, 2,564 examinees passed the examination since the program was launched in 2010. According to the weights and measures related regulations, technicians and technical supervisors enforcing verification in manufacturers or importers which are allowed to self-verify their own weighing and measuring instruments shall pass the examinations. The same requirements are also applied to technicians and technical supervisors enforcing verification in commissioned laboratories.

#### License

According to the Weights and Measures Act, enterprises engaging in operating the business of manufacturing, repairing or importing legal controlled measuring instruments shall acquire a license issued by the Bureau of Standards, Metrology and Inspection. As per the Weights and Measures Act, manufacturers

or repairers have to equip with necessary standards and technical documents when apply for license. The staffs of the BSMI will review the technical documents prepared by the applicants and do site evaluation before a license be approved. Up to the end of August 2017, there are 1179 licenses having been issued, including 254 for manufacturers, 229 for repairers and 696 for importers.

### **Self-Verification Scheme**

One more private company was granted to conduct self-verification on its products 2017. There are 13 entrepreneurs allowed to conduct self-verification, including eight for water meters and five for diaphragm gas meters by the end of August, 2017. This scheme successfully helps the BSMI to reduce spending on verification task and work loading. Meanwhile, it gives private companies more flexibility in produce. On the other hand, in order to ensure the accuracy of the measuring meters verified by private companies, the BSMI implements a follow-up audit mechanism. Every year, the BSMI's staffs visit the private companies aperiodically.

In 2017, the BSMI have sent staff to private companies authorized to implement self-verification more than 16 times to do follow-up audit and sample verified water meters and diaphragm gas meters for re-test.

### **Fee-Charging Standards for Measuring Instruments**

National Metrology Institutes provide necessary calibration services to domestic industries or even foreign industries. National Metrology Institutes collect fees from industries for these calibration services. And the BSMI reviews the fees annually, according to fields and capacity of different calibration services, to help industries easing their operating cost. In 2017, the BSMI adjusted the fees for calibration services on calibration system of sound calibrators, gas

concentration measurement system, nano particle size measurement system, scanning electron microscope calibration system and coordinate measuring machine calibration system.

## **Protecting consumers**

### **Voluntary Self-Management Measures on Gas Stations, Traditional Markets and Post Offices**

According to the Weights and Measures Act, the BSMI shall implement inspection against measuring instruments used for trade. However, during a specific period of time only a small portion of in-service measuring instruments used for trade has been actually inspected due to the limitation of sampling schedule. Therefore, the BSMI launched a program, named Voluntary self-management measures on gas stations, traditional markets and post offices, to encourage the owners or the operators of gas station, vendors in traditional market and post offices' employees to do calibration and maintenance procedures so that the measuring instruments in these places could keep in good accuracy. Then the BSMI issues a certificate to each of the gas stations, traditional markets or post offices that meet the requirements. By doing so, the consumers might have better confidence when they buy gas or trade goods at these places. Up to date, 1,242 gas stations and 245 traditional markets and post offices are granted by the BSMI and obtain the certificates.

## **Major projects - What we did and what we learned**

### **Training**

Six sessions of training programs on different topics were held in 2017. These programs were mainly focusing on verification skills strengthening and provided for the BSMI's staff and technicians that passed the aforementioned examinations for metrological technical personnel.

### **Webinar**

An e-learning website (<https://metrology.bsmi.gov.tw/>), set up by the BSMI for metrological technical personnel to learn metrological knowledge they are interested in more easily and conveniently, has been updated by adding lifelong learning sections and provided better user interface in 2016. This year the BSMI continued to upload more learning material such as 2017 World Metrology Day conference videos for those in need to access these resources online.

### **World Metrology Day**

The BSMI organized a series of seminars on metrology affairs to celebrate the World Metrology Day in middle May, including a symposium on “International Trend of Metrology - Metrology for Industrial Innovation” on May 3. Domestic industries were invited to participate in.

## SECTION 3 – Future focus

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

Harmonization measuring instruments subject to legal controlled and subject to verification:

According to the Weights and Measures Act, enterprises engaging in operating the business of manufacturing, repairing or importing legal controlled measuring instruments shall acquire a license issued by the Bureau of Standards, Metrology and Inspection. Currently, there are 17 categories of measuring instruments subject to legal controlled which defined in the Enforcement Rules of Weights and Measures Act. On the other hand, there are 19 types of measuring instruments subject to verification which defined in the Regulations Governing Verification and Inspection of Measuring Instruments. The scopes defined in two statutes are quite different. For example, pressure gauges belong to legal controlled measuring instruments. But among pressure gauge, only blood pressure gauges are subject to verification. The situation makes public confusion. The BSMI will reduce the divergence in following years.

Smart meters replacement program:

Only a few smart meters have been installed in local market. In order to upgrade the management of electricity grid and water piping system, utility operators will introduce smart meters into local market. In 2018, about a quart of million smart electricity meters and about 15,000 smart waters will be installed in local market.

Transaction of LPG by volume



Natural gas and liquefied petroleum gas (LPG) are wide used in household. LPG is sold as fuel by mass, traditionally. However, consumers barely have chance to realize the weight of LPG in the new arrived gas tank and there is how much left in the gas tank brought back. The situation is unfair to consumers. The situation will be changed. From early 2018, there is alternative. Consumers can ask LPG providers to equip a gas meter so that the gas consumption will be calculated by volume.