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Reaching a Safe and Sustainable Future

2017

Annual Report

Bureau of Standards,
Metrology and Inspection

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Foreword from the Director General

2017 marked a significant progress towards the goal of a safe and sustainable future. Taiwan is in the process of transforming itself to a high-tech and high value-added economy, and at the same time it also faces increasing demands for safety and quality from public. It becomes ever more important for the government to positively embrace and react to changes. To achieve this, the BSMI has been actively involved in improving the quality infrastructure in order to enhance the national industry growth, to strengthen consumer protection, and to reach development objectives set out for sustainability.

New achievements towards the transformation goal mainly involve the national policy "Five Plus Two Industrial Transformation Plan" and "Nuclear Free Homeland in 2025." In this respect, 46 national standards (CNS) were adopted or newly revised to provide up-to-date guidelines, such as those in green energy technology, energy storage and smart machinery. 6 measuring systems were upgraded with higher accuracy performance for calibrating of precision machinery and measuring medical radiation for medical devices. In addition, the National Renewable Energy Certificate Center was set up under the BSMI to issue renewable energy certificates that can promote confident trading in the renewable energy market.

Consumer protection is the other important pillar of BSMI's activities and most of our work centers on ensuring that consumers' rights and interests are well protected. We added faucets, suitcases, as well as wireless network media players and external projectors to the list of regulated products in response to the rising concerns from the public. A number of revisions to our technical regulations were made to update requirements in line with the latest national or international standards. These changes involved commodities that are commonly used in daily lives, such as electronic appliances, protective footwear, toys, and children bed guards. Safety of consumer products is further assured by taking market surveillance actions. Based on our annually planned projects, we conducted 57,269 market-checks for compliance with product labeling requirements, and completed

770 tests of products purchased from the market. These products also included non-regulated ones, and the tests were used to understand their critical safety features against national standards. Besides, along with the growth in consumer preference for online shopping, we further strengthen the cooperation with auction platforms to ensure that information about the compliance of products with mandatory requirements is made available to the online shoppers.

Lastly, as a result of our long term efforts, confidence was further built with our global partners, including mutual recognition on conformity assessment results for tyres and electrical products with the Philippines, mutual recognition on compliance with the OECD GLP principles with New Zealand, and technical cooperation on national quality infrastructure development of Swaziland (eSwatini). Furthermore, what making us moving forward with confidence was the engagement of substantive discussions with our trading partners to exchange best practices, updated knowledge, new measures and practical experiences under the existing cooperation frameworks or at multilateral platforms during the year. Through a spirit of partnership, together with commitment and perseverance, I believe many exciting opportunities are lying ahead in the near future.

With the goals set clearly, the BSMI continues working strategically under the partnership with industries, consumers, and global partners to expedite the transformation, support a competitive and innovative business environment, and ensure a high level of consumer protection. By putting every part of the efforts together, I have every confidence that it will be another progressive year for promising a safe and sustainable future for our country in 2018.

Lion Ming-jong

BSMI OVERVIEW

Who We Are

The Bureau of Standards, Metrology and Inspection (BSMI) under the Ministry of Economic Affairs (MOEA) is the authority responsible for standardization, metrology and consumer product safety in Taiwan.

What We Do

"Innovative Thinking, Proactive Service and International Connection", being guided by this philosophy, we aim at following good practices that encourage innovation of technology, provide adequate protection of the public, and facilitate trade by eliminating technical barriers to trade.

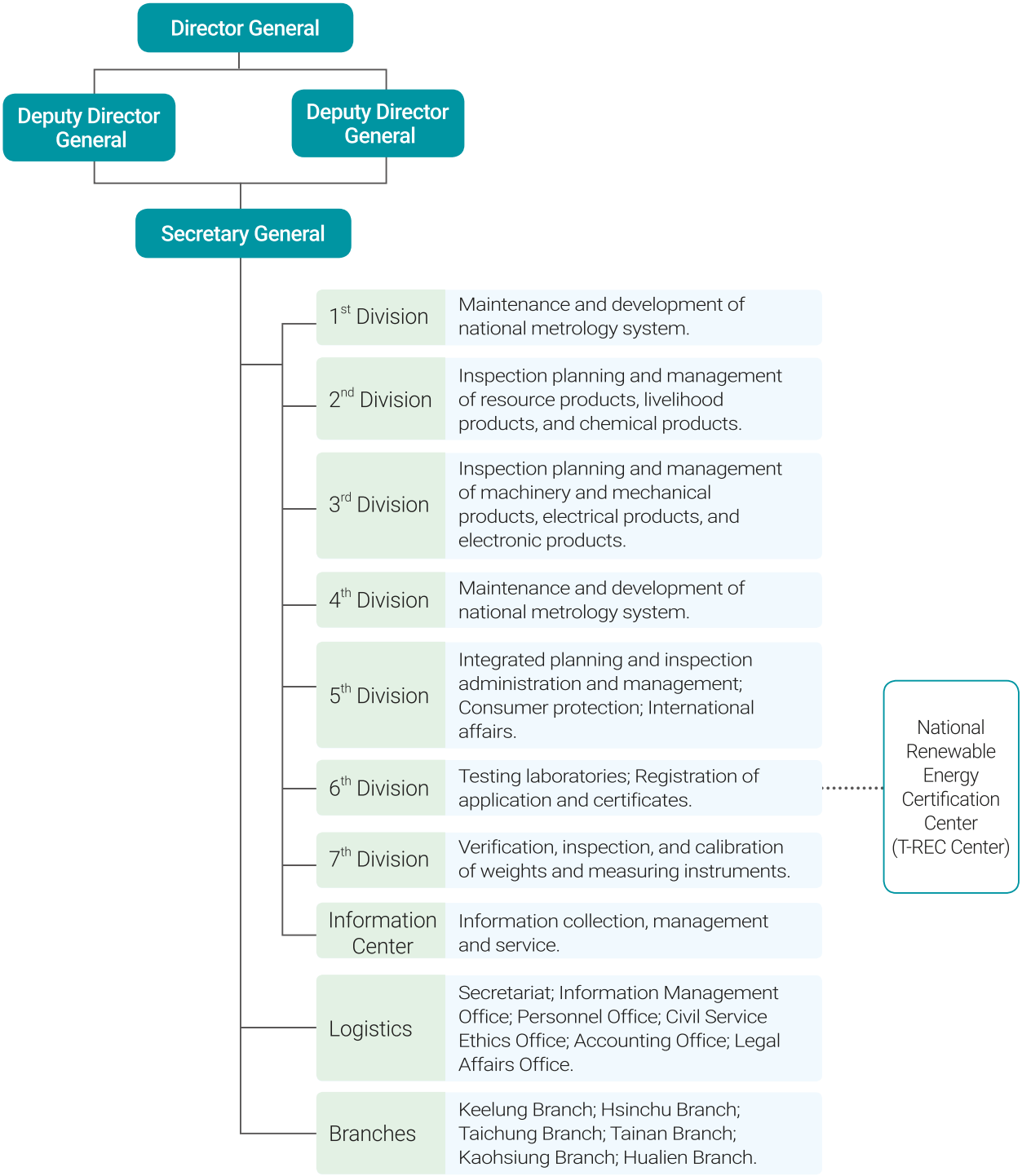
Key functions of our services are as follows:

- Developing and maintaining national standards and national measurement standards;
- Regulating and monitoring safety of products, mainly industrial and consumer products;
- Providing testing and certification services; and
- Cooperating with corresponding authorities or organizations of trading partners.

Where We Are

The BSMI has its head office in Taipei City, the capital of Taiwan, and six branches located in harbors, airports and major cities, providing a dense network of services nationwide.

Organization Chart by Activities



Budget and Manpower

-Annual Income Budget

Categories	Amount (Units: NTD 1,000)	Percentage
Fines & Compensation	25,444	2.81
Charges & Fees	865,907	95.72
Properties	4,892	0.54
Others	8,380	0.93
Total	**904,623**	**100.00**

-Annual Expenditure Budget

Categories	Amount (Units: NTD 1,000)	Percentage
Development and Maintenance of Measuring Standards	331,058	15.74
Development and Maintenance of National Standards	128,682	6.12
General Administration	1,196,290	56.87
Inspection and Metrological Management	444,099	21.11
Construction and Facilities	3,248	0.16
Total	**2,103,377**	**100.00**

-Age Distribution of Personnel

Age	Persons	Percentage
20~29	52	6.24
30~39	192	23.05
40~49	276	33.13
50~59	270	32.41
60+	43	5.16
Total	**833**	**100.00**

-Distribution of Education Background of Personnel

Categories	Persons	Percentage
Graduate School	434	52.10
University	282	33.85
College	109	13.09
Senior High School and Vocational School	8	0.96
Total	**833**	**100.00**

ACTIONS OF THE YEAR

Standards

Being the national standardizing body, we work closely with different industries, government bodies and consumers when establishing and maintaining an effective standardization system. Actions we take can be driven by two forces – the government and the stakeholder.

1. Government Led Actions

(1) Development of National Standards (CNS)

This year, the BSMI published 159 new standards, revised 165 standards, and withdrew 1,144 standards, which resulted in a total of 13,390 CNS in existence by the end of 2017. New standards mainly involve sectors of chemicals and electrical engineering. (Please refer to Table 1 for the number of CNS standards in different sectors.) CNS standards can be accessed at the web address http://www.cnsonline.com.tw/?locale=en_US.

▲ The CNS Online Service Website

(2) Alignment of CNS with International Standards

In 2017, 23 drafts of CNS were completed based on relevant international standards, which encompassed areas of smart grid, smart automation, Chinese encoding, information processing, bicycles, etc. In addition, 4 research papers on the relationship between industry technology and international standards for related product sectors were presented to help the industry better understand potential development in the future.

(3) Participation in International Standardization Activities

In order to understand the development of regional and international standards in sectors relating to emerging technologies, the BSMI dispatched 21 technical experts to participate in activities held by ISO, IEC, APEC and related standards development organizations in areas of encoding of symbols and ideological characters, electromagnetic compatibility, robotic devices, wind electric power generation, long-term caring system, investigation of incidents involving electrical products, etc.

(4) CNS Promotion Activities

To promote the use of and adherence to national standards, key initiatives of the BSMI are listed below.

- The CNS Mark is a voluntary product certification system in Taiwan to demonstrate that the quality of products and the quality management system of manufacturing factories comply with national standards. CNS Mark products may enjoy exemption from related testing under government procurement projects. By the end of 2017, there were a total of 2,073 products being granted to use CNS Mark (for the categories of certified CNS Mark products and factories, please refer to Table 2).

▲ Graphic of the CNS Mark

- Every year, new or newly revised CNS standards are introduced to the industries by means of seminars to encourage the use of such standards in their production process and enhance the performance of their products. This year, in collaboration with related associations, we delivered topics in areas of architectural glass, heat soak treated glass, hot dip galvanizing, light-emitting diode, cathodic protection of pipeline systems for petroleum, petrochemical and natural gas. The number of participants in these events reached 641 in total.

2. Stakeholder Led Initiatives

(1) Enhancement of Industry Participation in Standardization Activities

The "Directions Governing the Recognition of Standardizing

◀ Opening remarks by Deputy Director-General Linda Chen at the seminar on standards of heat soaked thermally tempered glass used in building on May 17.

Groups" were published in 2011 to encourage the industry to participate in the development of national standards and to develop human resources for the industry. Recognized standardizing groups are obliged to recommend drafts, submit comments, and attend technical committee meetings. There were 6 standardizing groups being recognized in 2017. 22 drafts were proposed by these standardizing groups, including electrically power assisted cycles, luggage carriers for cycles – requirements and test methods, etc.

(2) Support of Industry Participation in International Standardization Activities

To respond to the call for structural change of Taiwan's industry, emphases have been placed on developing industry standards that can be followed internationally. The "Directions Governing Subsidies to Groups for Promoting Standardization Activities" were published in 2008 and recently amended in 2013. Subsidies are given to encourage development of industry standards, submission of proposal for CNS drafts, participation in activities held by international/regional standards setting organizations and training of standards experts. In 2017, financial support was given to companies and associations for sending experts (10 person-times) to attend meetings of AirFuel Alliance (AFA) and Wireless Power Consortium (WPC), which is the international industrial standard organization for wireless charging technology.

3. 2018 Work Plan for National Standards

In order to consistently support those competitive or growing industries to sustain the economic transformation, and to meet higher social demands, especially for protecting children and seniors from harm, the BSMI will continuously lay emphasis on areas of green energy technologies, green transportation, energy-saving, precision machinery, public construction, and consumer and senior care products.

In terms of energy efficiency and green technology, standardization activities of the coming year will particularly be stressed on fuel cell technologies, electric vehicles, wind turbines and photovoltaic energy systems. For the aspect of protecting consumer rights, targeted works will be on child use and care articles, assistive products, gas burning water heaters, range hoods, wheelchairs, and products used for public construction, etc.

Table 1

Number of National Standards in 2017 (by categories)

Categories	Established	Amended	Rescinded	Existing
Civil Engineering and Architecture	4	17	45	620
Mechanical Engineering	16	2	67	2,116
Electrical Engineering	35	21	70	1,196
Electronic Engineering	9	-	59	790
Motor Vehicles and Aerospace Engineering	-	1	-	514
Track Engineering	2	-	-	91
Naval Architecture Engineering	-	-	52	354
Iron Metal Smelting	-	12	9	386
Non-Iron Metal Smelting	1	-	8	250
Nuclear Engineering	-	-	48	-
Chemicals	26	36	258	2,551
Textiles	1	15	-	378
Mining	-	-	202	82
Agriculture	-	3	97	382
Food Products	-	4	19	519
Wood	-	5	-	84
Paper	-	1	-	193
Environmental Protection	2	-	-	52
Pottery	-	9	2	376
Consuming Products	20	12	88	306
Hygiene and Medical Appliances	5	5	88	327
Information and Communication	16	4	2	869
Industrial Safety	7	8	2	241
Quality Control	2	4	8	81
Logistics and Packaging	1	3	-	171
General and Other Areas	12	3	20	461
Total	**159**	**165**	**1,144**	**13,390**

Table 2

Number of CNS Mark Products & Factories by 2017

Categories	Products	Factories
Civil Engineering and Architecture	499	196
Mechanical Engineering	153	66
Electrical Engineering and Electronic Engineering	342	143
Motor Vehicles and Aerospace Engineering	13	8
Track Engineering	-	-
Naval Architecture Engineering	-	-
Iron Metal Smelting	182	71
Non-Iron Metal Smelting	4	3
Chemicals	392	100
Textiles	1	1
Mining	-	-
Agriculture and Food Products	-	-
Wood	1	1
Paper	60	27
Pottery	310	93
Consuming Products	49	30
Hygiene and Medical Appliances	7	7
Industrial Safety, Packaging, General and Other Areas	60	29
Total	**2,073**	**683**

Metrology

The BSMI is responsible for developing and maintaining an effective national metrology system in Taiwan. The system is centered by three national measurement laboratories, which are National Metrology Laboratory (NML), National Time and Frequency Standard Laboratory (NTFSL), and National Radiation Standard Laboratory (NRSL), which lay out the foundation for the development of new technologies and advance the living standards of the society as a whole in Taiwan.

One of the most important tasks for operating a national metrology system is to provide traceability for measuring instruments used by laboratories or industries. The BSMI puts great efforts in ensuring a reliable and sustainable metrological traceability at a national level so as to ensure that the measurement results can be traceable, comparable and be confidently linked to the internationally-accepted measurement references. Works of the BSMI are carried out through two different approaches, compulsory (legal metrology) and non-compulsory (scientific metrology) measures.

1. Legal Metrology

Legal metrological activities form the basis and order of our daily life. We all expect that instruments used day-to-day are designed and maintained at the same quality level in order to carry out the expected performance which is accurate, reliable and stable. To meet the goal, three layers of control are implemented by the BSMI to manage measuring instruments – the licensing of businesses, verification and inspection, and type-approval.

(1) Licensing of Measuring Businesses

The BSMI requires that a license be obtained in order for any person to be engaged in activities of manufacturing, repairing or importing measuring instruments. By the end of 2017, there were 1,170 measuring instrument enterprises in Taiwan, among them 251 being engaged in manufacturing, 231 in repairing, and 688 in importing measuring instruments.

(2) Verification and Inspection of the Instruments

The BSMI has categorized 10 fields of measuring instruments that are subject to its verification and inspection system. These measuring instruments are mainly used for business transactions, public safety and health care purposes, and are required to pass verification before sale or usage and to pass inspection when in use. In 2017, 3,820,255 instruments were verified and inspected, 63% of them were water meters and watt hour meters. The rate of non-compliance is 0.13%.

Table 3

Categories and Scopes of Weights & Measuring Instruments Subject to Verification and Inspection

	Categories	Scopes
1	Taximeters	
2	Weighing instruments	Non-automatic weighing instruments, automatic gravimetric filling weighing instruments and discontinuous totalizing automatic weighing instruments, excluding (1) The weighing instruments of non-pricing and not for transaction use with a number of verification scale interval all more than 10,000. (2) The weighing instruments with a number of verification scale interval less than 3,000 and maximum weighing capacity less than 3 kg marked not for transaction use on the body of measuring instruments. (3) Portable suspended weighing instruments with a maximum weighing capacity less than 50 kg and marked not for transaction use on the body of measuring instruments. (4) Suspended weighing instruments with a maximum weighing capacity of more than 1 t. (5) Bathroom scales. (6) Weighing in motion non-automatic weighing instruments.
3	Non-Invasive mechanical sphygmomanometers	
4	Volumeters	(1) Liquid volumetric meters: metal measuring pails and measuring tanks marked with divisions; excluding the following measuring tanks: (i) Measuring tanks with a capacity of more than 110 m^3; and (ii) Pressure measuring tanks. (2) Diaphragm gas meters, excluding gas meters with a maximum air flow of more than 100 m3/hr. (3) Water meters: volumetric water meters, velocity water meters (Woltmann meters, single-jet meters and multi-jet meters), combination water meters and vortex water meters, excluding water meters with nominal diameter of more than 300 mm. (4) Oil meters, excluding oil meters with nominal diameter of more than 160 mm. (5) Liquefied petroleum gas flow meters.
5	Electricity meters	Watt-hour meters, Var-hour meters, Watt-hour demand meters, Static electricity meters and Instrument transformers, excluding (1) Ancillary electricity meters within the electric products. (2) Ancillary electricity meters within the converters/inverters. (3) Panel meters. (4) Portable electricity meters. (5) Reference electricity meters. (6) Direct current electricity meters. (7) Energy transducer. (8) Standard electricity meters and those with rated voltage higher than 600 V. (9) Current transformer operated electricity meters those with rated secondary current below 5 V. (10) Current transformers those with rated secondary current below 5 A. (11) Instrument transformers of 69 kV higher than the nominal system voltage.

	Categories	Scopes
6	Speedometers	(1) Radar speedometers for law enforcement. (2) Laser speedometers for law enforcement. (3) Inductive loop speedometers for law enforcement.
7	Sound level meters for official inspection	
8	Concentration meters	(1) Breathe alcohol testers and analyzers for official inspection. (2) Rice grain moisture meters. (3) Corn moisture meters. (4) Vehicle exhaust emissions analyzers for official inspection excluding those used for motorcycles and diesel engines.
9	Illuminance meters for official inspection	
10	Electrical thermometers	

(3) Type-Approval of Certain Instruments

For instruments requiring high level of accuracy, stability and durability, the BSMI evaluates and tests their samples against relevant requirements. Once the type of an instrument has been approved, the BSMI issues a type approval certificate, which serves as a permission for such instruments to apply for verification. Currently, four types of instruments are subject to type-approval, which are taximeters, water meters, electronic weighing instruments and diaphragm gas meters. For details of the scope, please refer to Table 4 below.

Table 4

Categories and Scopes of Weights & Measuring Instruments Subject to Type Approval

	Categories	Scopes
1	Taximeters	
2	Electronic non-automatic weighing instruments, excluding those provided with an automatic packaging function	(1) Price-computing weighing instruments; (2) Non-price-computing weighing instruments: with a maximum capacity of more than 3 kg and not more than 100 kg, and with the number of verification scale intervals (n) all between 1,000~10,000, excluding portable suspended weighing instruments.
3	Water meters	(1) Vortex water meters with a nominal diameter of not less than 50 mm and not more than 100 mm; (2) Volumetric meters and velocity meters (Woltmann type, single jet type, and multi jet type) with nominal diameter not less than 13 mm and not more than 300 mm.
4	Diaphragm gas meters: with a maximum flow of not more than 16 m3/h	

2. Scientific Metrology

Along with the rapid improvement in technologies, new demands for advanced measurement techniques arise. With a view to maintaining a viable base for our economic infrastructure, not only do we follow closely the trend of global development, we also engage with the industries to promote up-to-date metrological knowledge and information.

(1) Measuring Systems

Measuring systems in Table 5 were expanded and improved in 2017 to enhance the capability of the technical infrastructure in Taiwan.

(2) National Measurement Laboratory

The National Measurement Laboratory (NML) maintains 134 sets of standard measurement systems in 17 fields, and provides 5,260 calibration services for primary and secondary laboratories. In 2017, the NML participated in key comparisons for 15 items and 28 sets of measurement traceability. By the end of 2017, there had been 372 items of measurement standards registered to the database of International Bureau of Weights and Measures (BIPM), to ensure that Taiwan's national measurement

Table 5

Expanded and Improved Measuring Systems

Name of Systems	Applications
Step Gauge Calibration System (improved)	Provision of metrological traceability to calibrate step gauges, caliper checkers to ensure accuracy of results.
Torque Calibration System (improved)	Provision of metrological traceability to calibrate torque transducers to ensure accuracy of results.
Primary Standard Complying with IEC 61267 RQA X-ray Beam Quality Dosimetry (expanded)	Provision of X-ray radiation medical devices testing traceability for hospitals, manufacturers and dealers of medical X-ray units to ensure the radiation safety of patients and hospital staff while diagnostic X-ray examinations are performed.
kVp Meter Calibration System (expanded)	Energy expansion of kVp meter calibration system applying to areas of medical applications, radiation protection and industrial businesses.
Mn-54 Primary Standard of Activity (improved)	Provision of dose calibrator's traceability for radionuclide testing and chemical analysis laboratories to ensure radiation safety in life environment.
Portable Graphite Calorimeter Techniques (improved)	Promotion of graphite calorimeter measurement techniques and provision of traceability of high energy photon radiation doses.

standards are equivalent to international standards.

To cope with the resolution made by CGPM on the future revision of the International System of Units, the NML has made relevant preparation to keep pace with the development. In 2017, a new underground laboratory in mass in response to the redefinition of kilogram was under planning and construction.

The NML also participated actively at regional level. It collaborated with Japan NMIJ and Korea KRISS to organize a training event, "Training Course on Seismometer Calibration at Low Frequency", for South East Asian countries under the framework of APMP and APLMF during the period of October 30 to November 3, 2017. Bilaterally, the NML provided a personnel training program on volume related knowledge on November 15-23 in response to the request of Vietnam Metrology Institute. The international cooperation activities were important for the NML to maintain close working relationship with its counterparts and make contributions to the global system of measurement.

(3) Metrological Technical Personnel

The BSMI conducts examinations for metrological technical personnel to enhance the quality and technical level of metrological activities. In 2017, examinations were delivered during the period from June to September and 132 people participated. By the end of 2017, there had been a total of 2,131 qualified metrological technical personnel, showing the increasing support from the industry.

(4) Promotion of Measuring Techniques

In 2017, 12 seminars were held to share knowledge and information attained from research projects with the industry, and to introduce related services provided by the NML in support of industrial development. The topics encompassed areas of electricity standards, fluid and flow standards, intelligent machinery application technology, and precision mechanical metrology technology, etc.

3. Awareness Program

(1) Digital collection of cultural relics of standards, inspection and metrology

The BSMI collaborated with the National Science and Technology Museum (NSTM) to complete the project "Roadmap for fairness and

safety: the digital collection website of cultural relics of standards, inspection and metrology." In 2017, progress was made to digitalize 18 artifacts and more than 1,000 horizontal artifacts. Interviews with 6 senior citizens were completed to enrich the collection of oral history. Furthermore, to take science a step closer to our daily life, a Weights & Measures Square was inaugurated in the NSTM at year-end. The Square serves as an educational park showcasing large-scale public arts, each of which contains different scientific metrological knowledge.

(2) World Metrology Day and World Accreditation Day

The NML celebrated its 30th anniversary together with the annual symposium World Metrology Day in May this year. The event successfully scaled up the discussions on the topic "International Trend of Metrology - Metrology for Industrial Innovation" by inviting Dr. Barry Inglis, President of CIPM, as the keynote speaker. Experts from NIST/USA, NMIJ/JAPAN, PTB/Germany, and APMP DEC were also invited. Comprehensive topics were discussed at the event, including the latest development of CIPM on redefinition of SI, Japanese experiences on impact of metrology to the industry, digitalization, x-ray based metrology for nanostructure characterization and its applications to semiconductor industry, measurement for energy efficiency, and our experiences on measurements for transportation. The multi-knowledge activities assisted the industry, users and the public in understanding advanced technology of measurement.

▲ Panel discussion at 2017 World Metrology Day. Speakers from the left were Dr. Wen-Li Wu (NIST/USA), Dr. Takashi Usuda (NMIJ/JAPAN), Dr. Gwo-Sheng Peng (CMS/TAIWAN), Dr. Barry Inglis (President of CIPM), Dr. h. c. Frank Härtig (PTB/Germany), Prof. Prayoon Shiowattana (Chair of APMP DEC).

On June 13, the BSM and Taiwan Accreditation Foundation (TAF) co-organized 2017 World Accreditation Day. To echo the topic of year 2017 "Delivering Confidence in Construction and the Built Environment", given by ILAC and IAF, the event attached great emphasis on issues related to importance of accreditation in terms of civil engineering and material testing. Views were shared from different perspectives, namely governments, academic institutes, laboratories, industries and accreditation bodies. Experts from Poland Center for Accreditation (PCA), which concluded MoU with TAF, were invited to give presentations on their current practices. The event successfully promoted the value of accreditation and attracted over 200 participants.

(3) Featured events for disseminating metrological knowledge

In 2017 the BSMI also collaborated with several non-profit organizations by co-hosting series of featured events to disseminate metrological knowledge to the public, especially to students in remote and rural areas. For example, exhibitions of metrology collection and hands-on activities on scales used in live were held to attract young generation's attention. More than 6,000 people participated in these events.

▲ Group photo of Director General Ming-Jong Liou (sixth from the right) and Director Lucyna Olborska of PCA (sixth from the left) and CEO Brian Hsu of TAF (fifth from the left), at the 2017 World Accreditation Day.

Product Safety

Product safety is considered one of the most important missions of the BSMI's jurisdictions. It is achieved mainly through pre-market control measures as well as post-market surveillance actions. Both require a sound risk assessment system to make sure that resources are effectively and efficiently allocated to achieve adequate protection of consumers. While there are different regulatory authorities in Taiwan, the BSMI is responsible for ensuring the safety of most consumer products. Having taken into account the maturity of production technology and the diversity of products, the BSMI maintains four kinds of inspection schemes: Batch-by-Batch Inspection (including Type-Approved Batch Inspection), Monitoring Inspection, Registration of Product Certification (RPC) and Declaration of Conformity (DoC). Products subject to regulatory inspection are required to follow the designated inspection schemes and comply with the applicable inspection standards. The Commodity Inspection Mark shall be affixed to all products that comply with regulatory inspection requirements.

The safety of regulated products is further assured by taking post-market surveillance actions, which are guided by an annual plan, prepared at the beginning of each year and forwarded to BSMI branches located around the country for implementation. The annual plan identifies products of high risks and specifies principles for conducting surveillance activities, including market checks, sampling tests, special projects and monitoring of products sold over the Internet. In addition, the revision of the Commodity Inspection Act in 2007 imposed obligations on manufacturers or importers to report incidents caused by their products, which provides useful information for the BSMI to analyze the problems and take preventive actions. Results of market surveillance activities and investigations into product incidents are used as references for making the next year's annual plan.

▲ Graphic of the Commodity Inspection Mark

1. Regulatory Inspection

(1) Regulated Products

The number of commodities subject to regulatory inspection was 1,223 by the end of 2017. Most of them were mechanical & electrical/electronic products, and textiles. (Detailed description of the

product items are provided in Table 6) In addition, there were about 83 products items (feeding stuffs) that the BSMI is commissioned by the Council of Agriculture to perform border checks in 2017.

488,918 batches of products were inspected in the whole year of 2017, 99% of them being imported products, 51% being mechanical & electrical/electronic products, and 85% being processed by BSMI Branch offices in Keelung and Hsinchu, where Keelung Port and Taiwan Taoyuan International Airport are located respectively.

Table 6

Number and Inspected Batches of Regulated Products by Categories

Categories	Number of Product Items	Number of Inspected Batches
Total	1,223	488,915
Live animals and animal products	-	82*
Vegetable products	-	2,881*
Animal or vegetable fats and oils and their cleavage products; preserved edible fats; animal or vegetable waxes	-	510*
Prepared foodstuffs; beverages, spirits and vinegar; tobacco and manufactured tobacco substitutes	-	1,621*
Mineral products	22	2,110
Products of the chemical or allied industries	47	1,696
Plastics and articles thereof; rubber and articles thereof	34	10,045
Raw hides and skins, leather, fur skins and articles thereof; saddler and harness; travel goods, handbags and similar containers; articles of animal gut (other than silk-worm gut)	7	10,449
Wood and articles of wood; wood charcoal; cork and articles of cork; manufactures of straw, of esparto or of other plaiting materials; basket ware and wickerwork	179	8,553
Pulp of wood or of other fibrous cellulosic material; recovered (waste and scrap) paper or paperboard; paper and paperboard and articles thereof	21	1,415

Categories	Number of Product Items	Number of Inspected Batches
Textiles and textile articles	381	32,699
Footwear, headgear, umbrellas, sun umbrellas, walking-sticks, seat-sticks, whips, riding-crops and parts thereof, prepared feathers and articles made therewith; artificial flowers; articles of human hair	30	4,009
Articles of stone, plaster, cement, asbestos, mica or similar materials; ceramic products; glass and glassware	17	2,410
Base metals and articles of base metal	43	3,069
Machinery and mechanical appliances; electrical equipment; parts thereof; sound recorders and reproducers, television image and sound recorders and reproducers, and parts and accessories of such articles	327	249,241
Vehicles, aircraft, vessels and associated transport equipment	7	5,514
Optical, photographic, cinematographic, measuring, checking, precision, medical or surgical instruments and apparatus; clocks and watches; musical instruments; parts and accessories thereof	15	3,049
Miscellaneous manufactured articles	93	149,562

Note:
1. The cells marked with "*" are batches of product items commissioned by the Council of Agriculture.
2. The inspected batches of "products of the chemical or allied industries" include product items commissioned by the Council of Agriculture.

(2) Changes to technical regulations

Table 7

Products Added to the List of Regulated Products

Product Items	Effective Date	Description
Faucets (G/TBT/N/TPKM/228)	2017.01.01	New item (inspection standard: CNS 8088:2015)
Suitcases (G/TBT/N/TPKM/205)	2017.03.01	New item (inspection standard: CNS 15331:2013)
Wireless network media players and external projectors (G/TBT/N/TPKM/215)	2017.07.01	New items (inspection standards: CNS 13438:2006, CNS 13439:2004, CNS 15663:2013 Section 5"Marking of presence", CNS 14336-1:2010 and CNS 14408:2004)

Table 8

Revisions to Technical Regulations

Product Items	Effective Date	Description
Plywood (G/TBT/N/TPKM/232)	2017.01.01	1. "Plywood for pallet" added to the list of regulated products; and 2. Update of inspection standards CNS 1349:2014, CNS 8058:2014, CNS 11671:2014, CNS 8057:2012, CNS 11670:2014 and CNS 15583:2012
Laminated veneer lumber (G/TBT/N/TPKM/233)	2017.01.01	Update of inspection standards CNS 11818:2014 and CNS 14646:2015
Wooden floors (G/TBT/N/TPKM/234)	2017.01.01	Update of inspection standards CNS 2871:2014, CNS 11341:2014 and CNS 11342:2014
Glulam (G/TBT/N/TPKM/235)	2017.01.01	Update of inspection standards CNS 11029:2014, CNS 11030:2014, CNS 11031:2014 and CNS 11032:2014
Automobile tyres (G/TBT/N/TPKM/237)	2017.01.01	Update of inspection standard CNS 1431:2015
4 items of handheld electric tools (including handheld electric circular saws)	2017.01.01	Update of inspection standards CNS 9811:2001, CNS 9812:1995, CNS 3265:2001, CNS 10609:1995, CNS 3266:2001, CNS 10610:1995 and CNS 13783-1:2004
Gas cylinders and the fuel thereof for portable gas stoves, blowtorches and refillable lighters (G/TBT/N/TPKM/254)	2017.07.01	Update of inspection standard CNS 14530:2014
Bicycles for young children. Bicycles and other cycles (including delivery tricycles), not motorized (HS: 8712) (G/TBT/N/TPKM/245)	2017.08.01	Change of inspection standard (CNS 15503:2011 in place of CNS 4797 on phthalates)

Table 9

Proposed and Adopted Technical Regulations That Come into Effect in 2018 or a Later Time

Product Items	Date of Proposal	Date of Adoption	Effective Date	Description
Hot cathode fluorescent lamp and AC supplied electronic ballasts (G/TBT/N/TPKM/213)	2015.09.02	2017.04.25	2018.01.01	Update of inspection standards CNS 691:2014 and CNS 13755:2014, addition of CNS 15663:2013, Section 5 "Marking of presence"
92 items of electronic products (including radio keyboards) (G/TBT/N/TPKM/248)	2016.09.29	2017.01.04	2018.01.01	Addition of CNS 15663:2013, Section 5 "Marking of presence"
Safety footwear and protective footwear (G/TBT/N/TPKM/250)	2016.10.24	2017.02.21	2018.01.01	Update of inspection standards CNS 20435:2015 and CNS 20346:2016
Self-ballasted fluorescent lamps (G/TBT/N/TPKM/255)	2016.11.14	2017.02.24	2018.01.01	Update of inspection standard CNS 14125:2014, and addition of inspection standards CNS 14115:2009 and CNS 15663:2013, Section 5 "Marking of presence"
63 items of electrical appliances (including electric blankets) (G/TBT/N/TPKM/256)	2016.11.24	2017.02.24	2018.01.01 (RoHS) 2019.01.01 (Safety)	Update of inspection standards and addition of CNS 15663:2013, Section 5 "Marking of presence"
40 items of electrical appliances (including air conditioners) (G/TBT/N/TPKM/258)	2016.12.01	2017.03.27	2018.01.01	Update of inspection standards and addition of CNS 15663:2013, Section 5 "Marking of presence"
Drinking water suppliers (G/TBT/N/TPKM/259)	2016.12.28	2017.03.24	2018.01.01	Update of inspection standards and addition of CNS 15663:2013, Section 5 "Marking of presence"

Product Items	Date of Proposal	Date of Adoption	Effective Date	Description
Printers and photo-copying machines (G/TBT/N/TPKM/260)	2017.01.12	2017.03.28	2018.01.01	Two items combined; Multifunction machines are added to the scope
7 items of electrical and electronic products (G/TBT/N/TPKM/261)	2017.01.12	2017.04.10	2018.01.01 (RoHs) 2019.01.01 (safety)	Update of inspection standards and addition of CNS 15663:2013, Section 5 “Marking of presence”
Toys for children under 14 years of age (G/TBT/N/TPKM/270)	2017.04.11	2017.07.18	2018.01.01	Update of inspection standards CNS 4797:2015, involving new requirements for "acoustics," "toy scooters" and "magnets"
Pressure cookers for domestic use (G/TBT/N/TPKM/271)	2017.05.08	2017.08.18	2018.07.01	Update of inspection standards, expanding inside volume scope from 10 liters to 25 liters (less than)
Chargers and secondary lithium batteries for electrical bicycles and electrical assisted bicycles. (G/TBT/N/TPKM/272)	2017.05.16	2017.10.05	2019.01.01	New items (inspection standard: CNS 15425-1:2015, CNS 13438:2006, CNS 15424-1:2015, CNS15424-2:2015, CNS 15387:2015, CNS 15663:2013, Section 5 “Marking of presence”)
Baby walkers (G/TBT/N/TPKM/274)	2017.05.22	2018.01.23	2018.01.01	Update of inspection standard CNS 13035:2013, addition of inspection standards CNS 4797:2015, CNS 15503:2011, CNS15138-1:2012 on 8 phthalates
Strollers and carriages (G/TBT/N/TPKM/275)	2017.06.09	2017.10.05	2018.01.01	Update of inspection standards CNS 12940:2013, addition of inspection standards CNS 4797:2015 on 8 phthalates and 8 heavy metals

Product Items	Date of Proposal	Date of Adoption	Effective Date	Description
Children's bedguards (G/TBT/N/TPKM/278)	2017.06.12	2017.09.01	2018.01.01	New items (inspection standards: CNS 15911:2016,CNS 15503:2011,CNS 15138-1:2012)
Exhaust Pipes for Gas Water Heaters (G/TBT/N/TPKM/279)	2017.06.23	2017.09.29	2018.01.01	New items (inspection standard: CNS 15790:2015)
Motorcycle tyres (G/TBT/N/TPKM/280)	2017.07.05	2017.10.17	2018.05.01	Update of inspection standard CNS 4879:2017, addition of section 8 "Tyres over 6 years will be deemed as non-compliant"
Steel wire ropes (G/TBT/N/TPKM/284)	2017.08.09	2017.11.02	2018.07.01	Update of inspection standard CNS 941:2015
Lighters (G/TBT/N/TPKM/301)	2017.11.30	2018.02.08	2018.07.01	Extension of the inspection scope from price FOB US$0.7 to US$2.5 (less than)
Ready mixed paint (synthetic resin type), enamel, solvent-base masonry paint and emulsion paint (G/TBT/N/TPKM/303)	2017.11.30	2018.02.06	2018.07.01	New items (inspection standards: CNS 601:2016, CNS 606:2016, CNS 4940:2016 and CNS 8144:2016); Update of inspection standards CNS 11728:2016
Fire-retardant paints for buildings (G/TBT/N/TPKM/304)	2017.11.30	2018.02.06	2018.07.01	
Automotive video cameras, other audio-frequency electric amplifiers and head-mounted monitors (G/TBT/N/TPKM/308)	2017.11.30	2018.03.22	2018.07.01	Revision to the conformity assessment procedure for the automotive video cameras; Update of the inspection standard for DC powered audio-frequency electric amplifiers; Extension of inspection scope to cover head-mounted monitors

2. Product Safety Management

The safety of products placed on the market are monitored through planned projects launched by the BSMI, including market checks and testing of products purchased from the market, as well as actions driven by the manufacturers and consumers. The projects basically targeted products with high risks, with high frequencies of noncompliance and of concerns to the public. The list of such products in 2017 encompassed bubble water toys, faucets, LED bulbs, LED desk lamps, children's high chairs, non-wood walking sticks, handheld massagers, air conditioners, soft plastic desk pads, roller-skates, baby clothes, lithium battery sets, etc. Penalties, including fines, recall of products, implementation of corrective actions, prohibition of display/sale and rescission of certificates, were imposed on noncompliant products depending on the situations of violation.

(1) Market Checks

In 2017, 60,577 products were market-checked for their compliance with labeling requirements, 48,751 of which were physically checked and the rest checked over the Internet. With the users' growing reliance on the Internet to purchase goods, more efforts were put in to browse through the popular on-line shopping websites in Taiwan to check compliance of the products.

(2) Testing of Purchased Products

37 projects were implemented in 2017 to test 912 products purchased from the market. These projects focused on compliance of the products' critical features against national standards. For example, children's clothing was tested for the content of formaldehyde and for physical requirements of cords and drawstrings, and toys were tested for the content of phthalates and heavy metals to protect children's health. For electrical products, tests were conducted on the safety features, such as the leakage of electricity, voltage resistance, insulation resistance, rise of temperature, etc.

Project testing is also used to understand the characteristics of non-regulated products so as to take proper management measures regarding their safety. Taking children bedguards as an example, the BSMI had undertaken testing projects in 2016-2017 before adopting the measure of mandatory inspection in November 2017. These projects were launched to survey the safety of bedguards

due to a bed entrapment incident occurred in 2015, which resulted in the death of a 6-month infant. Based on the results, the national standard CNS 15911 "Child use and care articles – Children's bedguards for domestic use" was published in June 2016 for manufacturers to build safety into their products at the design stage. Following a year of monitoring such products on the marketplace by assessing risks of entrapment or strangulation, introduction of technical regulation was deemed necessary to ensure best protection of infants.

(3) Report From Volunteers and Consumers

The BSMI has been implementing a volunteer program since 1991 to recruit consumers to help uncover suspect products on the marketplace. These volunteers (1,000 in 2017) are important assets of the BSMI as they serve a bridge between the BSMI and consumers and help disseminate product safety knowledge. In 2017, volunteers reported 2,264 cases of regulated products that possibly violated relevant requirements, and 1,230 violations were confirmed. Besides, along with the prevalence of e-commerce, consumers are gradually shifting to the behavior of purchasing products from on-line shopping sites. According to the statistics, there were 2,559 reports made by consumers about suspect products in the year of 2017, of which 2,343 products were sold on the Internet, accounting for 92% of the total. Products involved were mainly power banks, loudspeakers, and digital cameras that were imported for sale on the Internet without bearing the required labeling or marking information. To tackle the problem, the BSMI strengthened cooperation with online auction platforms by publishing an administrative order, which imposes an obligation on platform operators to ensure that information about the compliance of products with mandatory requirements is made available to consumers.

(4) Consumer Product Incident Report

In order to obtain information about unsafe products and to take appropriate actions in time, the BSMI revised Paragraph 4 of Article 49 of the Commodity Inspection Act, and adopted "Regulations for Reporting Incidents Caused by Commodities Subject to Inspection" in 2008, which requires persons with reporting duties to notify the BSMI within 3 working days after the date of obtaining information on the incidents involving their

products. Besides, the BSMI accepts voluntary incident reports by those without reporting duties. The BSMI maintains a website for consumers and enterprises to report incidents online and to learn about useful product safety information, including products to be recalled, product safety alerts, defective products announced by other countries, law-violating products, etc.

In 2017, the BSMI received 124 product incident reports, of which 103 were filed and investigated (the other 21 being either repeated cases, forwarded to the authorities in charge for processing, or not involving products). As the reporting obligation only applies to situations where burning, explosion or melting of commodities causes damages to the life, health or properties of consumers, the reported incidents usually involve electrical appliances. In 2017, 90.3% of the reported incidents were burning, and the top reported products were de-humidifiers. For unsafe products, the BSMI requires companies to take measures or to disclose information, and actions of the companies will be followed up by the BSMI according to the Commodity Inspection Act and Consumer Protection Law in order to protect consumers' legal rights and benefits.

▲ Product Safety Information Website (http://safety.bsmi.gov.tw/wSite/dp?mp=65)

Testing and Certification

The BSMI not only maintains testing laboratories in regulated sectors, but also undertakes researches on testing methods in areas of emerging technologies. Currently, the testing laboratories of the BSMI are located at the headquarters and its six Branches around the country, which are capable of performing tests of physical, chemical, electrical and electromagnetic compatibility properties of products. Such capabilities are important to assist in feasibility studies required for developing national standards and regulating product safety.

The BSMI further employs its expertise in testing to support the government policy on developing green products, such as smart grid, wind turbines and electric vehicles. In addition, the voluntary certification programs that BSMI provides to facilitate export of fishery products and to enhance product quality are well received by the industry.

1. Enhancement of testing competence

To keep pace with the emerging testing technologies, which bring forward products with new features, the BSMI participates actively in national programs on science and technology development to contribute its expertise in testing and certification. The programs that the BSMI participated in 2017 and their brief descriptions are listed in Table 10.

Table 10

Participated National Programs on Science and Technology Development

Title of Category	Description of Projects
Smart Grid	◆ Standards and inspection at user's endpoint ◆ AMI to HEMS communication protocols ◆ Inter-communication test platform of smart appliances ◆ AMI to HEMS inter-communication test platform of G3-PLC ◆ AMI to HEMS wireless/wired network level inter-communication test cases
Off-shore Wind Turbines	◆ Establishment of off-shore wind turbine load measurement, power measurement and pitch system testing environment ◆ Drafting of standards for type testing and certification of wind turbines and power measurement techniques ◆ Revision of standards for wind turbine design requirements by taking typhoon related impacts into account ◆ Establishment of large wind turbine testing lab with accreditation from TAF and recognition from TÜV SÜD

Title of Category	Description of Projects
Emerging Energy	◆ LED lighting system (indoor/outdoor) testing ◆ Freezers/air-conditioners and new coolants testing ◆ Small and medium-sized wind turbines testing technology ◆ Fuel cells and hydrogen energy system testing ◆ PV power generation system and modules testing ◆ Forestry wastes transformed bio-fuel or chemical materials testing technology ◆ International cooperation on standards and certification for small wind turbines
Assistive Devices	◆ Power drive wheelchair trailer test equipment ◆ Bath boards test equipment ◆ Bath Handrails test equipment ◆ Eye-protection Spherical refractive power, Astigmatic refractive power test equipment

Regarding program of offshore wind turbine, the BSMI has supported Metal Industries Research & Development Center (MIRDC) to set up a wind turbine testing laboratory since 2014. After a 3-year-training program, the competence of this lab has been well established and successfully accredited to IEC 61400 series and CNS 15176-2 by Taiwan Accreditation Foundation (TAF) in 2017. Furthermore, it is also recognized by TÜV SÜD as a type testing center in Taiwan for large wind turbines. The BSMI hopes that by steadily developing a sound testing and certification environment, the technical capabilities of offshore wind industry will be enhanced.

▲ Alexander Heitmann (left), Head of Department of TÜV SÜD Offshore Wind Energy, hands over the certificate to Chiu-Feng Lin (right), President of MIRDC, and Chung-Lin Wang (middle), Deputy General-Director of BSMI, on August 9.

Aside from devoting efforts in support of the national science & technology programs, the BSMI maintains a website that integrated domestic testing resources for the use by the industry to locate the available testing services meeting their needs. The website also contains updated information on testing and inspection and on-line service.

▲ Testing Information Service Website (http://testing.bsmi.gov.tw/wSite/mp?mp=58)

2. Voluntary Certification Systems

The BSMI developed certification systems for industrial products and fishery products to help our manufacturers achieve a higher level of quality and to facilitate their access to international markets.

(1) Voluntary Product Certification (VPC) System

The VPC System was launched by the BSMI in 2004, which differs from the other voluntary product certification system, the CNS Mark System, operated by the BSMI in the product standards used for testing. The VPC System intends to upgrade the levels of design, development and production of products based on more stringent requirements. In 2017, the VPC System contained 36 product items, most of them being electrical and electronic products (e.g. fluorescent lamps and starter holders, AC motor capacitors, switches, battery chargers, medium and small wind turbines, stationary training equipment, etc.). There were more than 280 certified products by the end of 2017. VPC certified products can demonstrate to the market their enhanced performance and reliable quality assurance.

▲Graphic of the VPC Mark

(2) Certification of Fishery Products Exported to Foreign Countries

The BSMI offers the services of issuing health certificates and implementing the HACCP certification. For health certificates, it demonstrates the compliance of Taiwan's processing

establishments with the health and quality requirements of the trading partners. The HACCP certification is implemented to assist export of food products and fishery products to foreign countries. By the end of 2017, certificates were issued to 82 food processing plants. Improvements were made to its management of processing establishments and the traceability of fishery products, including revision to "Regulations Governing Contracted Inspection for Fishery Products Intended for Export".

The BSMI also serves as a contact point to coordinate administrative arrangements relevant to registration of Taiwan's processing establishments and fishing vessels with such countries. The numbers of registered establishments and vessels are described in Table 11.

(3) Management Systems Certification

2017 was the second year of implementing the BSMI's policy on stopping its management systems certification service. By

Table 11

Registered Establishments and Vessels of Taiwan

Areas/Countries	Processing Establishments	Fishing Vessels
European Union	33	180
Russia	20	26
Brazil	28	386
Viet Nam	44	-
Mainland China	67	-

the end of 2017, only 5% of its clients remained registered, and their certificates will all expire before December 31, 2018. All organizations are encouraged to choose services provided by more than 20 private or nonprofit certification bodies in Taiwan. The whole transfer process requires a series of supportive measures in order to reduce the impacts without jeopardizing the rights and interests of more than 800 registered organizations. They basically include (1) coordination between accreditation bodies, certification bodies and certified organizations to streamline the transition; (2) expansion of certification bodies' capacity to accept new clients; (3) arrangements for registered organizations under the co-registration agreements between the BSMI and foreign partners; and (4) transparency of information and communication.

(4) Taiwan Renewable Energy Certificate (T-REC)

In support of national policy aiming for a higher level of clean energy, and to meet the emerging demands on voluntary purchases of renewable energy by commercial customers, the BSMI has officially launched a National Renewable Energy Certificate Center in June. It is a center for operating the third-party certification by issuing Taiwan Renewable Energy Certificate (T-REC) and guiding the renewable electricity transaction between the certified generators and customers. From quality and quantity of generated green power, to the selling and usage in the market, the T-REC system will enable government to track and manage the renewable energy sourced electricity. On the other hand, commercial buyers through buying the certified green electricity can demonstrate their commitments to environmental protection to customers, regulators, and the public. The BSMI had issued 16,700 certificates, and 284 of them were purchased in the market in 2017. The certification system will be further developed by making its administrative procedures standardized and electronized, establishing a platform for industries and government to share views, and strengthening training of relevant personnel.

▲ The opening ceremony of Preparatory Office of National Renewable Certification Center on April 21. From left to right, Director General Ming-Jong Liou of BSMI, Former Minister Chih-Kung Lee of MOEA, Director General Jing-Tang Yang from Office of Energy and Carbon Reduction, Executive Yuan, and Chief Secretary Jin-Sheng Su from Bureau of Energy.

International cooperation

Throughout the year the BSMI put great emphases on a wide range of activities to develop cooperative relationship with regulators or institutions in foreign countries and participated in international activities within its jurisdiction. The purposes of keeping connections to the world are not merely for exchange of experience or technology with the counterparts, it's also the way we show our achievements and commitment as being a member of the international community. Actions were taken through two channels, bilateral and multilateral.

1. Bilateral Approach

Bilaterally, the BSMI has more in-depth discussions with its cooperative partners on issues such as mutual recognition of conformity assessment results and consumer product safety. It also establishes formal technical cooperation arrangements with trading partners to work on projects concerning the development and improvement of national technical infrastructure in line with international practices.

(1) Taiwan-US Cooperation

Two cooperative activities were organized under the Memorandum of Understanding (MoU) on consumer product safety matters signed in 2004, where the BSMI and Consumer Product Safety Commission (CPSC) are designated as the implementing agencies.

A. On May 31, a webinar on bicycle regulations and international bicycle standards was delivered to provide Taiwan industry stakeholders — including manufacturers, distributers, and exporters of bicycles and bicycle parts — with an overview of the relevant product safety requirements in the United States. The event enabled Taiwan bicycle industry to engage with CPSC experts directly to discuss technical issues and clarify questions.

B. On November 17, "Consumer Product Safety Training Seminar — U.S. Safety Requirements for Toys and Durable Infant or Toddler Products", co-organized by the BSMI, CPSC and American Institute in Taiwan, was held in Taipei. Toys and infant products were selected as the theme of this year to inform the manufacturers of new requirements for exporting their products to the US. The BSMI also explained its safety

▲ Group photo, taken on November 16, of BSMI Director General Ming-Jong Liou (third from right) and Deputy Director Generals Chung-Lin Wang and Linda Chen (second and first from the right) with CPSC Acting Chair Ann Marie Buerkle (middle), Chief of Staff Nancy Lowery (third from left), Program Manager Sylvia Chen (second from left), Director Mr. Richard O'Brien (left).

management regime at the seminar for the participants to compare with the US system and encourage more in-depth discussions.

(2) Taiwan-Japan Cooperation

The cooperation with Japan is comprised of a Mutual Recognition Arrangement (MRA) on conformity assessment results for electrical/electronic products and a MoU on product safety. In 2017, the scope of recognition was extended for conformity assessment body Japan Quality Assurance Organization to cover 20 new electric appliances. Initiatives in implementing the MoU on product safety were taken in 2017 to identify specific areas for cooperation, including a discussion meeting on June 4 and the First Working-level Experts Meeting on November 17. The areas identified were exchanges on product safety system information, lithium ion batteries regulation, measures of non-compliance products sold online.

(3) Taiwan-New Zealand

The Economic Cooperation Agreement signed between Taiwan and New Zealand in 2013 mapped out very extensive topics of cooperation in the TBT Chapter. 2017 saw wider and deeper engagements between experts of regulatory bodies from both sides by convening discussion meetings. In particular, a workshop on risk assessment was held on October 17-18 to present both countries' general approaches to risk assessment and its applications to product sectors such as consumer products, electric and electronic products, and machinery. About a hundred people attended the workshop, which was a unique opportunity for the participants to acquire risk assessment knowledge from different disciplines at the same time. Besides, accreditation bodies from both sides signed an implementing arrangement of the Agreement on Accreditation Cooperation on May 12, which leads them to mutually recognize their compliance with the OECD GLP principles.

▲ Workshop on Taiwan-New Zealand Risk Assessment. Speakers from left to right: Technical Officers Lucy He and Paul Stannard of WorkSafe New Zealand, Principal Advisor Martin Rushton of New Zealand Ministry of Business Innovation and Employment, Director June-Chieh Lai of the BSMI, Project Manager Chung-Hsien Chen of Taiwan Precision Machinery Research & Development Center, and Associate Technical Specialist Chien-Lun Hou of the BSMI.

(4) Taiwan-Philippines Cooperation

After 5 years of negotiation, an MRA on conformity assessment for industrial products was signed on December 7. The Arrangement was a fruit of regulatory authorities from both sides to build a mutual recognition mechanism for the safety of electrical products and brand new pneumatic tyres.

(5) Taiwan-GCC Standardization Organization (GSO) Cooperation

Following the MoU on Technical Cooperation signed in 2016, a roadmap was further developed on January 16 to implement the MoU. The roadmap focuses on exchanges of information and personnel to enhance mutual understanding of regulatory systems and best practices.
On January 16, a Seminar on GCC Standardization and Halal Certification was held in Taipei to acquaint our industries with the standardization activities of GSO. In October, a delegate was dispatched by the BSMI to Kuwait to share our market surveillance activities for consumer products.

(6) Taiwan-Saudi Arabia Cooperation

The BSMI has maintained a long-term partnership with Saudi Standards, Metrology and Quality Organization (SASO) ever since 1988 where the first Technical Cooperation Program was signed. Based on the program, the BSMI appoints short term experts each year to work with SASO staff members on SASO's request. In this year, the BSMI designated an expert to SASO to assist with its personnel capacity building in lubricant oil related testing and safety requirements.

(7) Taiwan-Swaziland (eSwatini) Cooperation

The BSMI and Swaziland Regulatory and Quality Infrastructure Development Department under the Ministry of Commerce, Industry and Trade (RQID/MCIT) concluded a MoU in Mbabane on January 19 after exchange of visits between both sides since 2015. The MoU provides a working framework that facilitates technical cooperation on the development of quality

▲ Director General Ming-Jong Liou of the BSMI (right) and Acting Principal Secretary Siboniso Nkambule of the Swaziland MCIT (left), photographed at the MoU signing ceremony.

infrastructure in Swaziland. Two training programs were delivered for the country on May 2-11 in Taiwan and on November 27-December 5 in Swaziland. The programs were tailored to the needs of Swaziland to build the capability of laboratories and personnel, in particular ISO/IEC 17025 and 17020, ISO 9001, and legal metrology.

(8) Bilateral Cooperative Partnership

The BSMI has cooperative partnership with the following trading partners based on cooperative agreements/ arrangements or MoUs signed by the Bureau directly or in the name of representative offices. (Arranged in chronological order)

Table12

List of Cooperative Partners

Cooperation Items	Cooperation Partners
Mutual Recognition of Conformity Assessment Results	1. United States Federal Communications Commission 2. Industry Canada 3. Australia Communication Authority 4. Directorate for Standards, Metrology and Quality of Viet Nam 5. New Zealand Ministry of Consumer Affairs, and New Zealand Radio 6. Spectrum Management 7. Standards, Productivity and Innovation Board, Singapore 8. United States Environmental Protection Agency 9. Ministry of Economy, Trade and Industry, Japan 10. International Accreditation New Zealand 11. Bureau of Philippines Standards
General Cooperation	1. The Polish Centre for Testing and Certification 2. The KERMI Testing and Quality Control Ltd., Hungary 3. The Standards Institution of Israel 4. The Czech Office for Standards, Metrology and Testing 5. Consumer Product Safety Commission, United States 6. Mongolian Agency for Standardization and Metrology 7. The Directorate for Standards and Quality, Viet Nam 8. The Austrian Standards Institute 9. Bureau of Philippine Standards 10. Standardization Administration of China, General Administration of Quality Supervision, Inspection and Quarantine; Certification and Accreditation Administration, Mainland China 11. Ministry of Business, Innovation and Employment, New Zealand 12. The Standards, Productivity and Innovation Board (Enterprise Singapore) 13. Slovak Office of Standards, Metrology and Testing, Slovak Republic 14. Standardization Administration under Ministry of Economy, Israel 15. Standards Organization of Nigeria 16. National Institute of Technology and Evaluation, Japan

Cooperation Items	Cooperation Partners
Standards	1. SAI Global Limited, Australia 2. ASTM International, United States 3. BSI Standards Limited, UK 4. Beuth Verlag GmbH, Germany (authorized by DIN) 5. The Institute of Electrical and Electronics Engineers, Incorporated, (IEEE), United States 6. International Organization for Standardization 7. AFNOR, France 8. Underwriter Laboratories Inc., United States
Product Testing	1. Japan Electrical Testing Laboratory 2. Japan Quality Assurance Organization Assurance 3. Swiss Electrotechnical Association 4. Swedish Institute for Testing and Certification of Electrical Equipment 5. Hungarian Institute for Testing and Certification of Electrical Equipment
Technical Cooperation	1. Saudi Standards, Metrology and Quality Organization 2. GCC Standardization Organization 3. Regulatory and Quality Infrastructure Development Department under the Ministry of Commerce, Industry and Trade, Swaziland (eSwatini)

2.Multilateral Approach

(1) Activities under WTO/TBT Agreement

Undertaking the function of the WTO/TBT Enquiry Point, the BSMI answers inquiries about standards, technical regulations or conformity assessment procedures adopted by regulatory authorities, coordinates views on issues discussed at the WTO/TBT Committee meetings, and assists in bilateral consultations involving TBT issues. In 2017, the BSMI adopted a proactive approach to monitoring the text of draft measures published in the Government Gazette and reminded the responsible regulators of the notification obligation. In comparison with the notification submitted in 2016, the number increased by 76%, showing our commitment to transparency.

On June 13, the BSMI presented on "Risk Management in Pre-Market Inspection" at the Thematic Session in Geneva, sharing its experience of using risk assessment tools in stages of preparing technical regulations. Besides, WTO Workshop on TBT, organized by the BSMI and WTO, was held on November 15 and 16. The event consisted of a basic course, designed for the industry to understand the important elements of TBT Agreement, and an adventure course where cooperation between private and public sectors were emphasized.

(2) Activities under APEC/SCSC

The BSMI is the coordinator responsible for promoting activities in Taiwan under the Sub-Committee on Standards and Conformance (SCSC), Committee on Trade and Investment (CTI), APEC. It participates in regular meetings as well as invites domestic regulatory authorities, institutes or organizations to join the discussions or to be part of those activities under the SCSC. In 2017, a self funded project "Conference on Management and Related Scientific Detection Technology of Illegal Medicines and Adulterated Dietary Supplements within APEC Economies" was held on June 28 and 29 in Taipei as part of the SCSC activities. Speakers were from the United States, European Union, Japan, Singapore, Korea and Malaysia. The conference attracted more than 200 participants from industries, authorities and academic institutes.

(3) Participation in International Event

Table13

List of Participation in International Event

Date	Name of Events
February 20-21	APEC/SCSC 1 Meeting, Nha Trang, Viet Nam
February 23	GLP Working Group Meeting, Brussels, Belgium
May 9 - 13	APEC/SCSC/FSCF and related activities, Hanoi, Viet Nam
May 28 - June 4	Electrical Energy Storage System Conference, Munich, Germany
June 20 – 23	APEMC 2017, Seoul, Korea
June 13 – 15	WTO/TBT Committee Meeting, Geneva, Switzerland
June 16 – 24	2017 APLAC-PAC Joint Annual Meetings, Bangkok, Thailand
July 11 – 15	EMBC 2017 : 39th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, Jeju Island, Korea
August 7 – 11	2017 Symposium on EMC+SIPI, Washington DC, USA
August 18 – 24	APEC/SCSC 2 Meeting, Ho Chi Minh, Viet Nam
September 4 – 8	EMC Europe 2017, Angers, France
October 16 – 20	49th IRG Meeting in San Jose, USA
October 21 – 30	2017 IAF/ILAC Joint Annual Meetings, Vancouver, Canada
October 25 – 27	The 24th APLMF and Working Group Meetings, Siem Reap, Cambodia
November 14 – 15	2017 ICPHSO International Symposium, Tokyo, Japan
November 23 – 25	Committee of Asian Standardization for Photocatalytic Materials and Products Meeting (CASP 2017), Danang, Viet Nam
December 1	APEC/SCSC- Seminar on antibacterial evaluation test method through Round-Robin-Test, Osaka, Japan

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