

**STAY
FOCUSED,**

**MOVE
FAST**



**Innovative Thinking,
Proactive Service,
International Connection.**

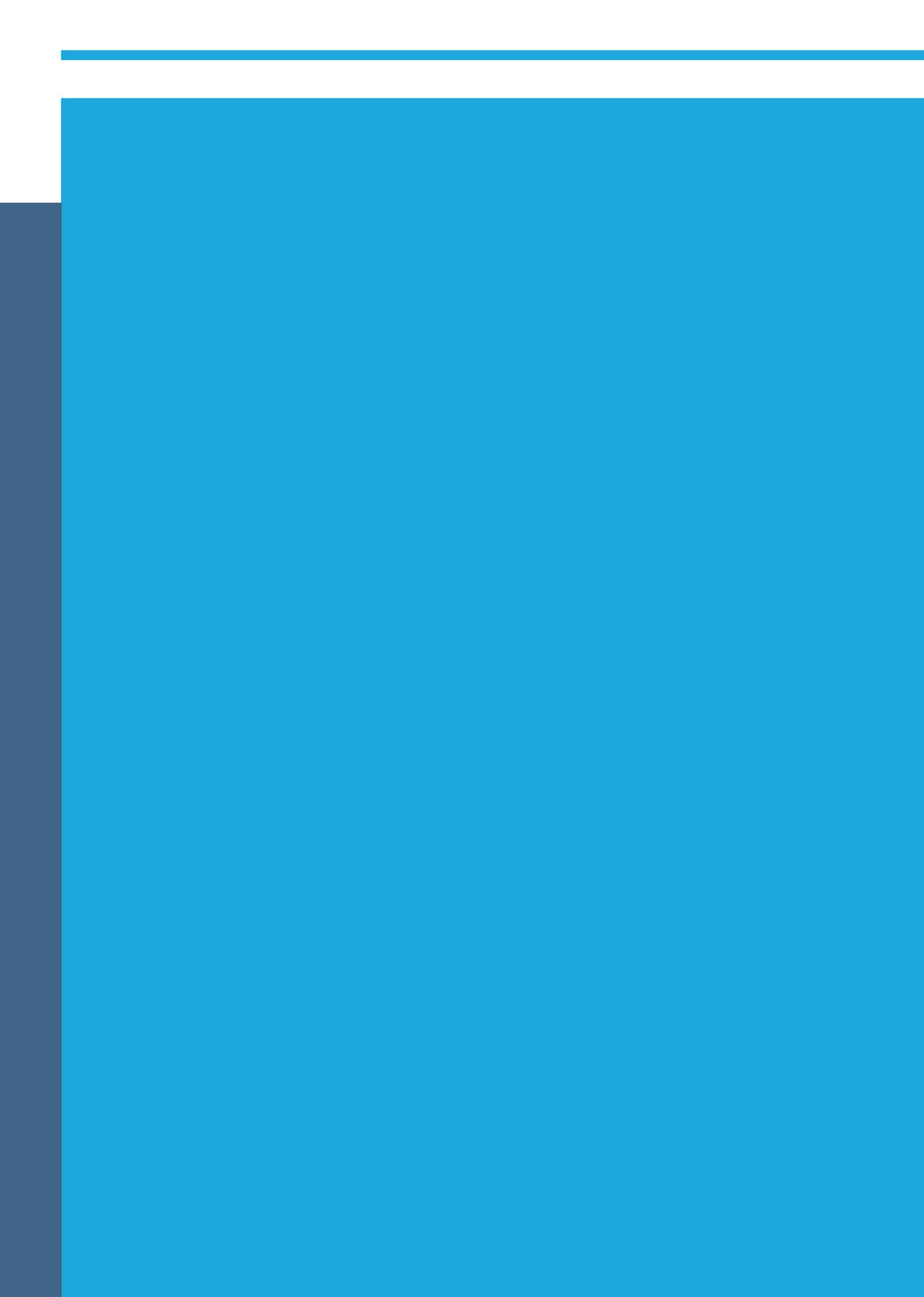


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Foreword from the Director General

The Bureau of Standards, Metrology and Inspection (BSMI) is the regulator of general consumer products in Taiwan. It is the weaver of the net to capture unsafe products and keep potential hazards away from the consumers in the country. On the other hands, it takes the critical position of developing a more powerful national quality infrastructure of the country to timely meet the evolving needs of the economic and social demands. To achieve the purposes, our work centers at developing national standards, maintaining our metrology system, adopting technical regulations and advancing conformity assessment capabilities. Instead of stocktaking our annual achievements, which could be found in the following pages, I would like to emphasize our efforts in support of Taiwan's national economic policies as they lay the foundation in the context of economic and social transformation.

In 2018, 296 national standards were developed or updated in areas of photovoltaic energy systems, fuel cell technologies and electric vehicles, in accordance with international ones to implement the policy "5+2 Industrial Innovation Plan". These standards serve a useful guide for the relevant industries in Taiwan to equip themselves with the state-of-the art knowledge in order to compete on the global market.

In addition to our efforts in standards development, the BSMI devoted itself to promote Taiwan Renewable Energy Certificate (T-REC). 30,508 certificates were issued in 2018, and among them, 1,930 were successfully traded in the market. The traded number is 23 times more than the number in 2017, the year that T-REC was introduced. A steady growth of the trading market is expected when we



Director General

Lien, Ching-Chang

noticed a greater awareness of its value by the private sector and the heightened commitment to environmental protection. We will keep promoting T-REC and exploring the possibility of cross-border cooperation to expand its international connectivity.

Apart from the above achievements, our National Measurement Laboratory (NML), in order to meet the needs of precision and accuracy of measurement for high-tech industry, is one of the earliest NML introducing the silicon-28 sphere as new measurement system under the new International System of Units (known simply as New SI). Constructions along with this revolution are undergoing. The BSMI ensures that the world-leading measurement services will be provided for our industry after the new system takes effect in 2019.

Tasks of the BSMI are extensive and purposeful. We not only underpin the foundation of economic growth but also protect public health and safety. On the occasion of my appointment as Director General, I would like to take this opportunity to thank my 1,024 staff members for all their dedicated efforts in the past year. While many challenges remain and more works need to be done to meet the needs from the fast-changing environment, the BSMI will adhere to its philosophy "Innovative Thinking, Proactive Service and International Connection" to perform its duty in providing reliable services to the industry and ensuring effective protection of public health and safety.

Ching-chang Lien



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 for the public, and facilitate trade by eliminating technical barriers to trade.

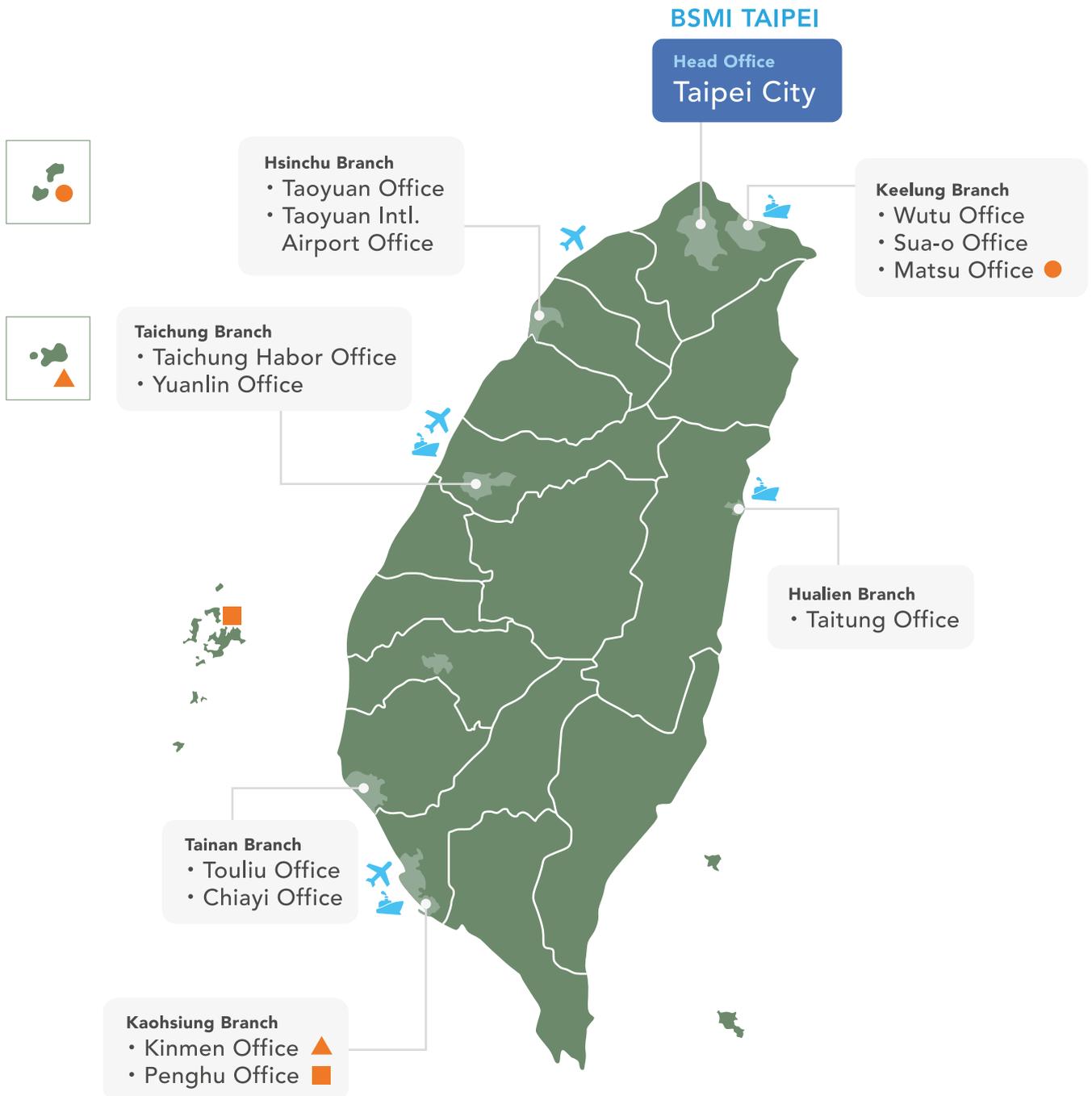
Key functions of our services are as follows:

- 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.

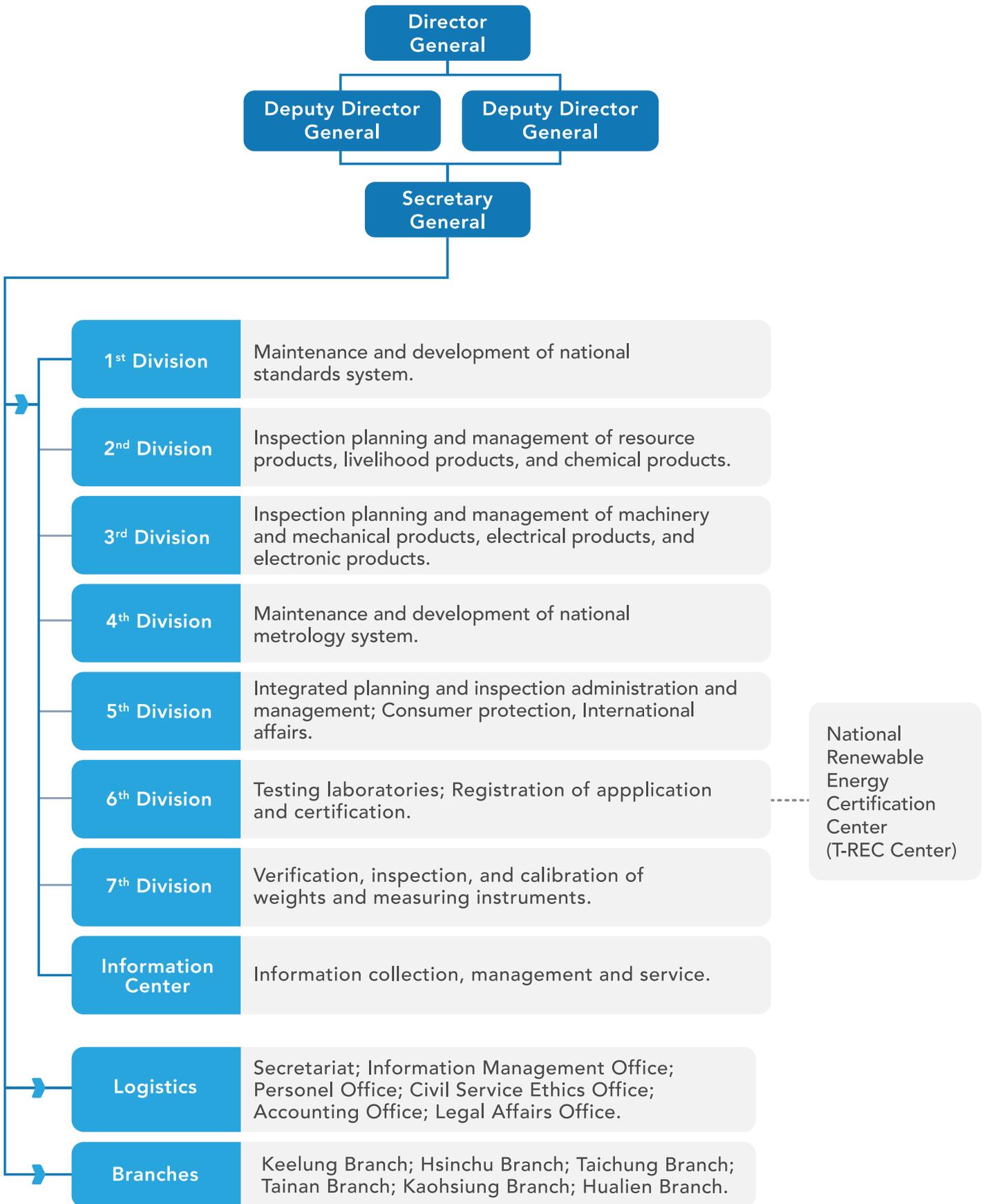


WHERE WE ARE

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	22,358	2.25
Charges & Fees	956,537	96.45
Properties	4,075	0.41
Others	8,770	0.89
Total	991,740	100.00

Annual Expenditure Budget

Categories	Amount (Units: NTD 1,000)	Percentage
Development and Maintenance of Measuring Standards	565,605	23.13
Development and Maintenance of National Standards	209,247	8.56
General Administration	1,201,538	49.14
Inspection and Metrological Management	466,777	19.09
Construction and Facilities	540	0.02
Transportation and Relative Equipment	1,540	0.06
Total	2,445,247	100.00

Age Distribution of Personnel

Age	Persons	Percentage
20~29	49	5
30~39	197	19
40~49	294	29
50~59	385	37
60+	99	10
Total	1,024	100.00

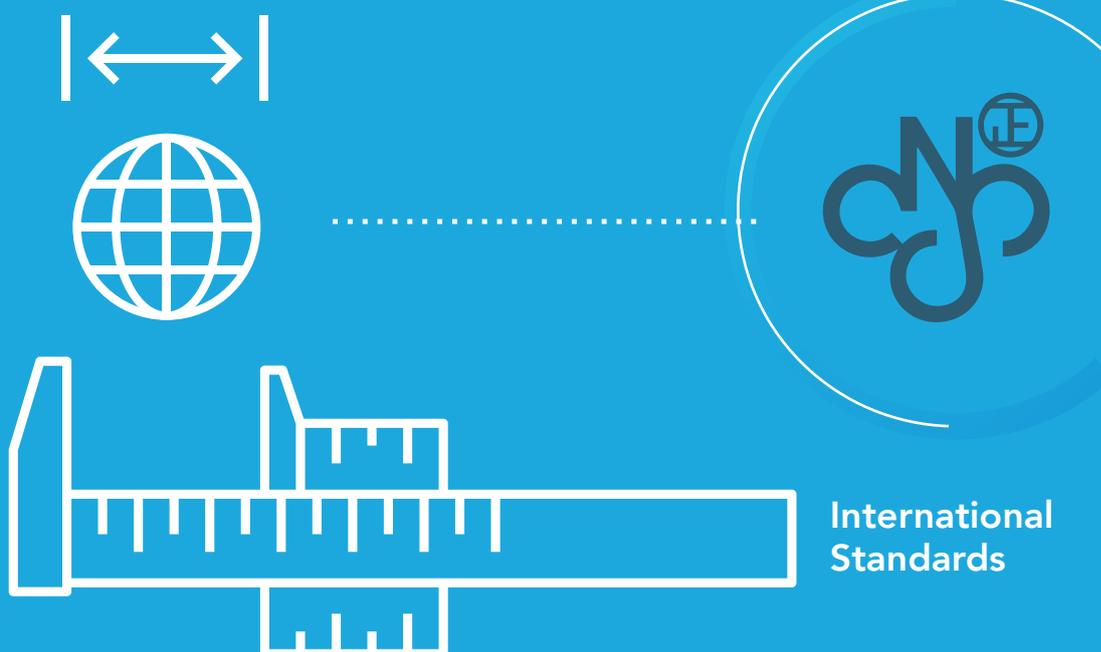
Distribution of Education Background of Personnel

Age	Persons	Percentage
Graduate School	461	45
University	328	32
College	167	16
Senior High School and Vocational School	68	7
Total	1,024	100.00

ACTIONS OF THE YEAR



Standards



2019 Work
Plan for
National
Standards



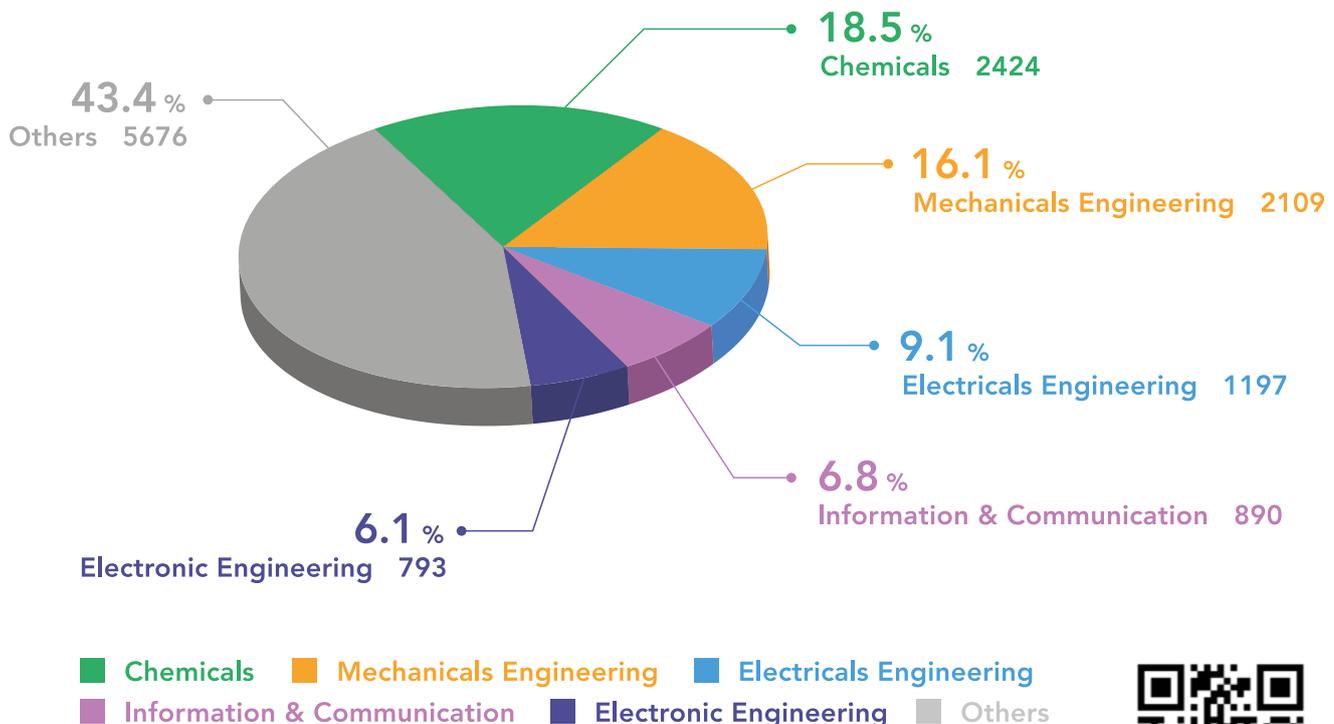
Standards

Being the national standard body in Taiwan, the BSMI bears the responsibility to develop and operate a standardization system that is relevant and can effectively respond to regulatory and market needs, as well as keep pace with scientific and technological development. Bringing national standards highly in line with international ones not only ensures compatibility and consistency of technical regulations, but also support the advancement of industry and uplift the living quality of the society.

1. Brief on National Standards (CNS)

This year, we established 152 new standards, revised 144 standards, and withdrew 453 standards, which resulted in a total of 13,089 CNS in existence by the end of 2018. New standards mainly involve sectors of electrical engineering, consumer products, and information and telecommunication equipment. Besides, 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 in response to the national policies, mainly the "5+2 Industrial Innovation Plan." The chart below shows the top 5 sectors and their proportions in the total number of CNS. For the numbers of CNS standards in different sectors please refer to Table 1.



■ Chemicals
 ■ Mechanicals Engineering
 ■ Electricals Engineering
■ Information & Communication
 ■ Electronic Engineering
 ■ Others

Updated CNS standards can be accessed at the CNS Online Service
http://www.cnsonline.com.tw/?locale=en_US



2. Alignment of CNS with International Standards

Among the 13,089 CNS, 99% of them are harmonized with international standards when relevant international standards exist. Some CNS, e.g. circuit breakers, are not harmonized with international standards due to fundamental technological problems.

3. CNS referenced in technical regulations

Number of CNS referenced in technical regulations came to 934, accounting for 7.1 % of the all. Among these standards, 97.2 % of them were harmonized with international standards when relevant international standards exist.

4. CNS Promotion Activities

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

(1) 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. A total of 2,002 products are granted to use CNS Mark by 2018. For the categories of certified CNS Mark products and factories, please refer to Table 2.

(2) Seminars and monthly e-newsletters are important means of keeping the public regularly informed of the progress of CNS standards. In collaboration with related associations, we held 4 seminars throughout the year to introduce updates on national standards to encourage the use of such standards in the production processes and enhance the performance of the products, for example in the area of light-emitting diode and steels for building. The number of participants of these events reached 398 in total. On the other hand, the e-newsletter covers topics that are fairly diverse but closely related to people’s everyday lives and has been supported by the public ever since the first issue in 2011. Number of subscriptions had grown to 4,470 by the year.



Products bearing the CNS Mark



5. Stakeholder-Led Initiatives

(1) Enhancement of Industry Participation in Standardization Activities

To encourage participation of the industry in the development of national standards and to develop human resources for private sectors, recognized standardizing groups are obliged to recommend drafts, submit comments, and attend technical committee meetings. In 2018, there were a total of 6 recognized standardizing groups recognized by the BSMI.

(2) Support of Industry Participation in International Standardization Activities

We continuously provide financial assistance to companies and associations for sending experts to attend meetings held by international standardizing organizations, including ISO/IEC JTC 1/SC 31, ISO/IEC JTC 1/SC 41 and Asia Nonwoven Fabric Association (ANFA) this year.

6. 2019 Work Plan for National Standards

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 to guide scientific and technological development and social transformation.

Besides, as Artificial Intelligence (AI) and the 5th Generation Mobile Networks (5G) become more ubiquitous, and the needs for international standards are increasing from industry, the Bureau is highly focusing on the global development of these two areas. Relative national standards are under preparation in response to international development.

2019 Work Plan for National Standards

GREEN ENERGY TECHNOLOGIES



GREEN TRANSPORTATION



ENERGY SAVING



PRECISION MACHINERY



PUBLIC CONSTRUCTION



CONSUMER PRODUCTS AND SENIOR CARE PRODUCTS



ARTIFICIAL INTELLIGENCE (AI)



5TH GENERATION MOBILE NETWORKS (5G)



Table 1 Number of National Standards in 2018 (by categories)

Categories	Established	Revised	Withdrawn	Existing
Civil Engineering and Architecture	7	8	2	625
Mechanical Engineering	18	5	25	2,109
Electrical Engineering	27	8	26	1,197
Electronic Engineering	3	4	-	793
Motor Vehicles and Aerospace Engineering	-	2	-	514
Track Engineering	1	-	-	92
Naval Architecture Engineering	-	-	-	354
Iron Metal Smelting	1	9	31	356
Non-Iron Metal Smelting	1	-	-	251
Nuclear Engineering	-	-	-	-
Chemicals	10	55	137	2,424
Textiles	10	3	16	372
Mining	-	-	-	82
Agriculture	-	13	-	382
Food Products	-	-	103	416
Wood	1	2	-	85
Paper	-	3	-	193
Environmental Protection	-	-	-	52
Pottery	1	5	91	286
Consuming Products	22	11	6	322
Hygiene and Medical Appliances	9	2	1	335
Information and Communication	21	1	-	890
Industrial Safety	13	4	12	242
Quality Control	3	2	3	81
Logistics and Packaging	2	-	-	173
General and Other Areas	2	7	-	463
Total	152	144	453	13,089

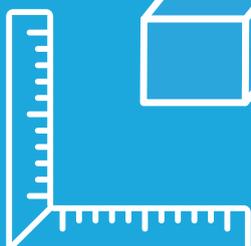
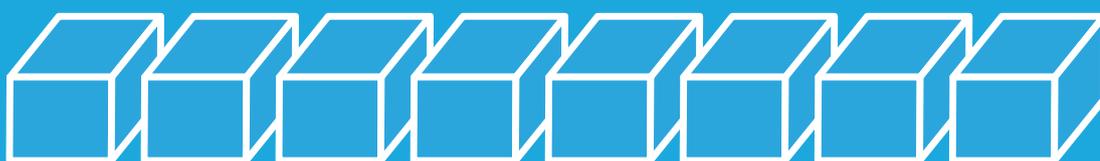
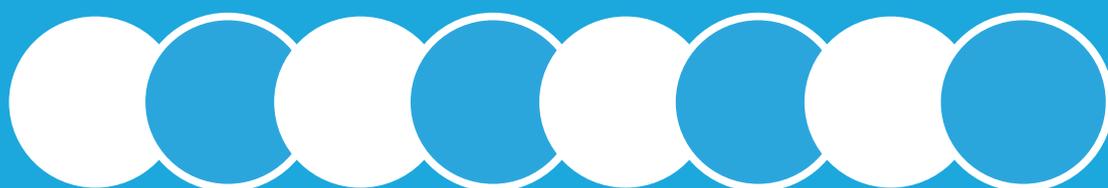
Table 2 Number of CNS Mark Products & Factories by 2018

Categories	Products	Factories
Civil Engineering and Architecture	490	192
Mechanical Engineering	132	61
Electrical Engineering and Electronic Engineering	334	138
Motor Vehicles and Aerospace Engineering	13	8
Track Engineering	-	-
Naval Architecture Engineering	-	-
Iron Metal Smelting	184	70
Non-Iron Metal Smelting	4	3
Chemicals	352	98
Textiles	1	1
Mining	-	-
Agriculture and Food Products	-	-
Wood	1	1
Paper	72	31
Pottery	305	93
Consuming Products	49	30
Hygiene and Medical Appliances	6	6
Industrial Safety, Packaging, General and Other Areas	59	29
Total	2,002	674

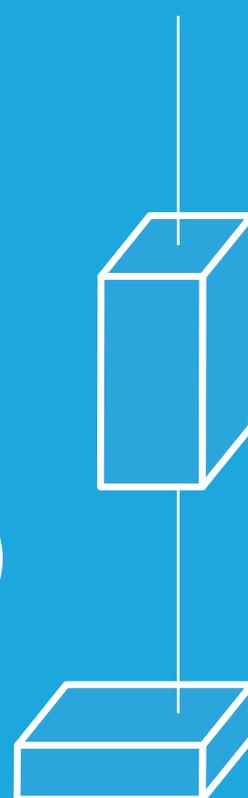
**ACTIONS
OF THE YEAR**



Metrology



International
Systems of Units



METROLOGY

As stipulated in the Weights and Measures Act, the BSMI is responsible for the development of national metrology system in Taiwan. Accurate and precise measurements and measuring equipment are vital to the industry in pursuit of quality and innovation. They are also needed for the protection of health, safety, the environment and consumers. The national metrology system consists of legal metrology, compulsory in nature, and scientific metrology, which provides state-of-the-art service to stakeholders.

1. Legal Metrology

The legal metrology system is implemented by three layers of control.

(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 2018, there were 1,164 measuring instrument enterprises in Taiwan, among them 245 being engaged in manufacturing, 215 in repairing, and 704 in importing measuring instruments.

(2) Verification and Inspection of the Instruments

19 kinds of measuring instruments (please refer to Table 3) are subject to verification before they are allowed to be placed on the market. After they pass verification, the products shall be inscribed, sprayed, branded or lead-sealed with the logo "同" and/or affixed with a conformity sticker. These measuring instruments are also subject to inspection during in service. In 2018, 4,003,299 instruments were verified and inspected, 70% of them were water meters and watt hour meters. The rate of non-compliance is 0.23%.



Alcohol breath testers bearing the verification mark "同"



(3) Type-Approval of Instruments

Legal metrology instruments that require higher levels of accuracy, stability and durability may be subject to type approval. These legal metrology instruments, prior to manufacture or importation, shall be filed for an application for type approval to the BSMI. Once the type of an instrument has been approved, the BSMI issues a type approval certificate, which serves as a permission for them to apply for initial verification. Please refer to Table 4 for the list of such instruments.

2. Scientific and Industrial Metrology

Being an associated state of the General Conference on Weights and Measures (CGPM) and a signatory to the Mutual Recognition Arrangement of the International Committee of Weights and Measures (CIPM MRA), the calibration and measurement capabilities of our National Measurement Laboratory are traced to international measurement standards and recognized by other countries.

(1) National Measurement Standard Laboratory in Brief

The National Measurement System consists of three national measurement laboratories, which are National Metrology Laboratory (NML), National Time and Frequency Standard Laboratory (NTFSL), and National Radiation Standard Laboratory (NRSL). The whole system maintains 134 sets of standard measurement systems in 17 fields, and provides 5,413 calibration services for primary and secondary laboratories. In 2018, it participated in key comparisons for 17 items and 33 sets of measurement traceability. There had been 390 items of measurement standards registered to the BIPM's database by the year end, ensuring that Taiwan's national measurement standards are equivalent to international standards.

(2) Realizing the New SI

In response to the decision made at the 26th General Conference on Weights and Measures to revise the definition of International System of Units, a new corresponding measurement system, the "Integrated Mass Measuring System of X-ray, Fluorescent and Photoelectron Spectrum", is under development to keep pace with the new changes of international system. On October 28, under the cooperation between the NML and Physikalisch Technische Bundesanstalt (PTB) of Germany, the highly enriched silicon-28 sphere was introduced to the public. This initiative is of importance to Taiwan to maintain the competitiveness of Taiwan's high-tech industry on the global market, such as smart manufacturing, artificial intelligence and semiconductor processes, which requires strong support of precision measurement technology and standards. Most importantly, the silicon-28 sphere signifies the independence of Taiwan's measuring system by allowing calibration to be performed domestically. The new measurement system, being the first one developed in Asian countries, can provide calibration services for neighboring countries.



Silicon Sphere in the NML



Silicon Sphere Transfer Ceremony & Workshop on Revision of SI

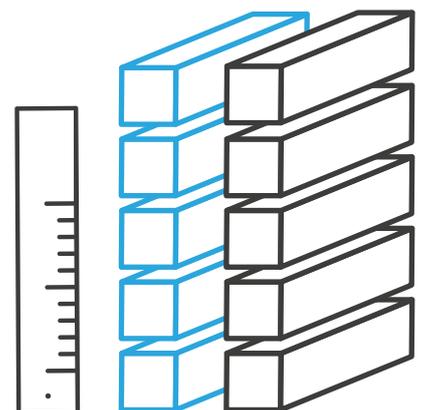
(3) Measuring Systems

Measuring systems listed below were improved by the NML in 2018.

Name of Systems	Applications
High-Capacity Mass Weighing System (improved)	Provision of weights metrological traceability related to mass and force quantities serving for legal metrology, weighing station of the Freeway Bureau, aerospace industry, heavy industry, and people's livelihood to ensure the accuracy of results.
Low Pressure Gas Flow Calibration System - Piston Prover (improved)	Provision of gas meter metrological traceability to calibrate flowmeter serving for energy resource, semiconductor industry, chemical industry, environment protection inspection & testing, and fair trade to ensure the accuracy of results.

(4) Promotion of Measuring Techniques

In support of industrial development, the BSMI and the NML held 13 seminars to share knowledge and information attained from research projects with the industry, and to introduce related services. Important topics include metrology techniques in areas of smart machinery, the new SI units, and ISO 17025:2017...etc.



3. Awareness Program

(1) World Metrology Day

The 2018 Taiwan World Metrology Day was held on May 21 to echo the significant changes of redefining SI, and the theme of this event was "International Trend of Metrology." Dr. Wen-li Wu, a Fellow Emeritus of the NIST (USA), was invited to share the current status and challenges in the area of nanometer-scale metrology. Mr. Terry Tsao, Global Chief Marketing Officer and President of SEMI Taiwan, also presented his views on semiconductor metrology from the perspective of industry. The symposium was another success in promoting people's awareness on the new SI units and communicating to the public the progress made by the government toward such trend.

(2) World Accreditation Day

The BSMI takes a critical role in developing the national quality infrastructure in Taiwan. It supervises and supports the operation of Taiwan Foundation Accreditation (TAF), which is a member of regional and international accreditation organizations.

On September 17, the BSMI and TAF co-hosted the 2018 Taiwan World Accreditation Day, focusing on how accreditation leads to a safer world. The event was also a celebration of the 15th Anniversary of the establishment of TAF, and was attended by around 500 participants from government bodies, industry, research institutes both domestically and abroad.

(3) Some Other Featured Events

The BSMI, with a long-term goal of cultivating metrological talents, continues working with non-profit organizations to co-host series of events disseminating metrological knowledge to the public, especially targeting the young generations. Notable activities of this year include "Tours of a Mobile Laboratory to Countryside Schools," "NML's Open Day for High School Students," and "Promotion of the Digital Collection Website of Cultural Relics of Standards, Inspection and Metrology with the National Science and Technology Museum." A total of more than 9,000 people participated in these events.



Group photo of the event. Dr. Ming-Jong Liou, former Director General of the BSMI (fifth from the left of first row), Dr. Wen-li Wu (sixth from the left of the first row), and Mr. Terry Tsao (forth from the left of the first row).

Table 3 Categories and Scopes of Weights & Measuring Instruments Subject to Verification and Inspection

	Categories	Scopes
1	Taximeters	
2	Weighing instruments	<p>Non-automatic weighing instruments, automatic gravimetric filling weighing instruments and discontinuous totalizing automatic weighing instruments, excluding</p> <ol style="list-style-type: none"> (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	<ol style="list-style-type: none"> (1) Liquid volumetric meters: metal measuring pails and measuring tanks marked with divisions; excluding the following measuring tanks: <ol style="list-style-type: none"> (i) Measuring tanks with a capacity of more than 110 m³; 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 provided for trading petroleum products, excluding oil meters with nominal diameter of more than 160 mm. (5) Liquefied petroleum gas flow meters.

5	Electricity meters	<p>Watt-hour meters, Var-hour meters, Watt-hour demand meters, Static electricity meters and Instrument transformers, excluding</p> <ol style="list-style-type: none"> (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.
6	Speedometers	<ol style="list-style-type: none"> (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	<ol style="list-style-type: none"> (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	

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 m ³ /h	




CERTIFICATE OF CONFORMITY
 Bureau of Standards, Metrology and Inspection,
 Ministry of Economic Affairs, R.O.C.

Certificate No. 000W0000

Applicant
 Name:
 Address:
 Manufacturer
 Name:
 Address:
 Identification of the certified pattern: Water meter

Model	
Type	
Meter Designation/Nominal Size	
Accuracy Class	
Indicator Range(m ³)	
Minimum Scale(L)	
Shell Material	
Type approval No	FD000000
Date of Approval	Month Day, Year
Expired by	Month Day, Year

This certificate hereby identifies the conformity of the above-mentioned type of instrument represented by the samples identified in the associated Test Reports with the requirements of Technical Specification for Type Approval of Water Meters (CNSA 49), of which technical and metrological requirements referred to CNS 14866-93 citing from ISO 4064:1993.

Dr. Ching-Chang Lien
 Director General,
 Month Day, Year





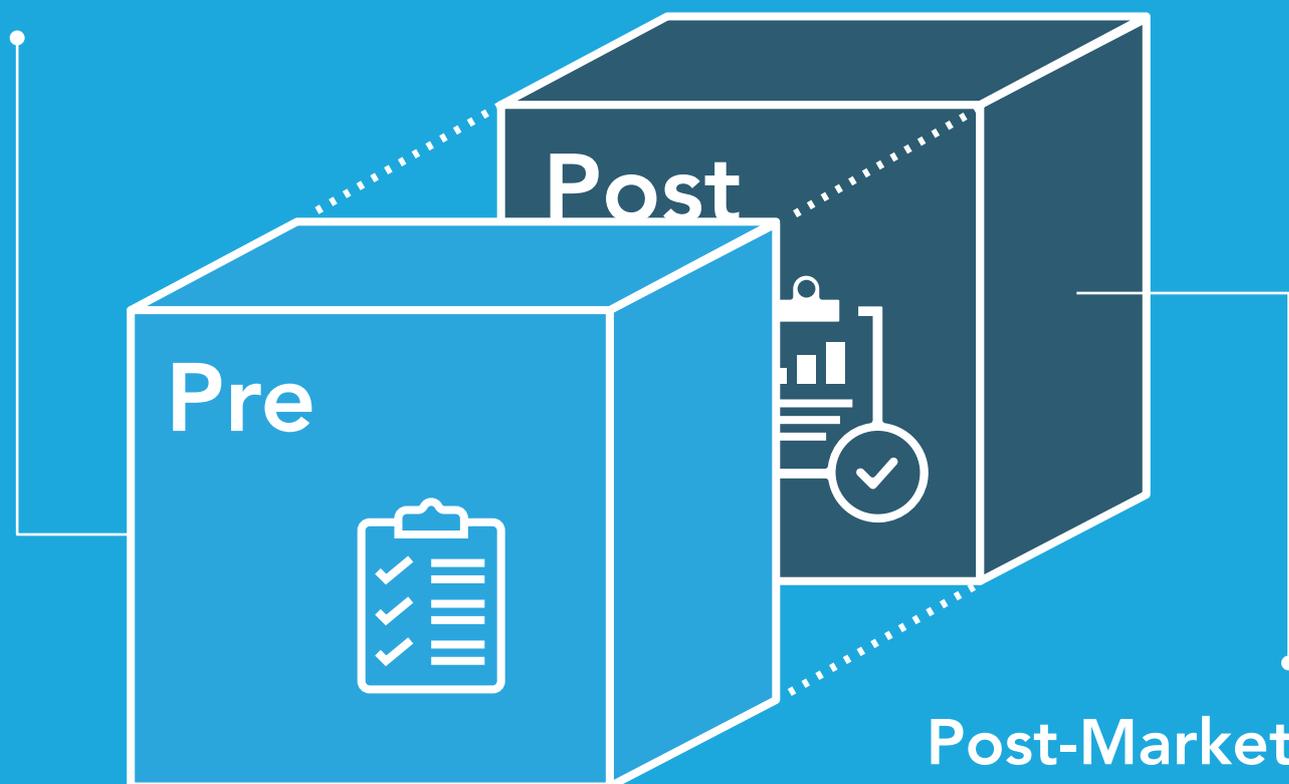
ACTIONS OF THE YEAR



Product Safety

Pre-Market

Batch-by-Batch Inspection
Monitoring Inspection
Registration of Product Certification (RPC)
Declaration of Conformity (DoC)



Post-Market

Market Checks
Sampling Tests
Incident Reports & Product Recall
Report from Volunteers & Consumers

PRODUCT SAFETY

The BSMI is one of the regulatory authorities in Taiwan. It operates mandatory inspection of products under the Commodity Inspection Act. Products fall under the jurisdiction of BSMI are mostly consumer-related commodities, including electrical & electronic products, mechanic products and chemical products. Commodities, both imported and domestically produced, that are announced to be subject to regulatory control shall comply with relevant requirements before they are imported or placed on the market. Inspection of such commodities is carried out by the following four schemes, listed in the order of stringency from high to low, namely:

- Batch-by-Batch Inspection (including Type-Approved Batch Inspection);
- Monitoring Inspection;
- Registration of Product Certification (RPC); and
- Declaration of Conformity (DoC)

After these regulated products enter the marketplace, they are monitored by the BSMI post-market surveillance system. In addition, according to Consumer Protection Act, the BSMI also keeps an eye on those non-regulated products that are in the market or used by consumer to well protect public safety.



1. Pre-Market Measures

(I) Regulated Products

Products subject to mandatory 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 number of commodities subject to regulatory inspection was 1,224 by the end of 2018. Most of them were mechanical, electrical, electronic products, and textiles. (Detailed description of the product items are provided in Table 5).

There were 494,464 batches of products inspected during the year, 98.7% of them being imported products, 34.6% being mechanical, 17.3% being electrical and electronic products. 85.8% of the imported products were processed by BSMI Branch offices in Keelung and Hsinchu, where Keelung Port and Taiwan Taoyuan International Airport are located respectively.



Commodity Inspection Mark



Most regulated products of BSMI

Electrical Products



Electronic Products



Mechanical Products



Chemical Products



more than
1,200 items

(2) Changes to technical regulations

The BSMI periodically reviews its laws and regulations. In 2018, it changed more than 40 technical regulations, including those were newly adopted or amended, with the goal of enhancing protection both to consumers and environment that could keep abreast with the needs and developments of modern times. Products involved in these changes were mainly household electronic devices. As required by Commodity Inspection Act that requirements shall apply both to domestic and imported commodities, the BSMI has notified the World Trade Organization (WTO) about the proposed changes of regulations that could impact international trade ever since 2002 when Taiwan officially joined the WTO. The lists of made notification to the WTO during the year are listed in Table 6 to 8.

2. Post-Market Surveillance

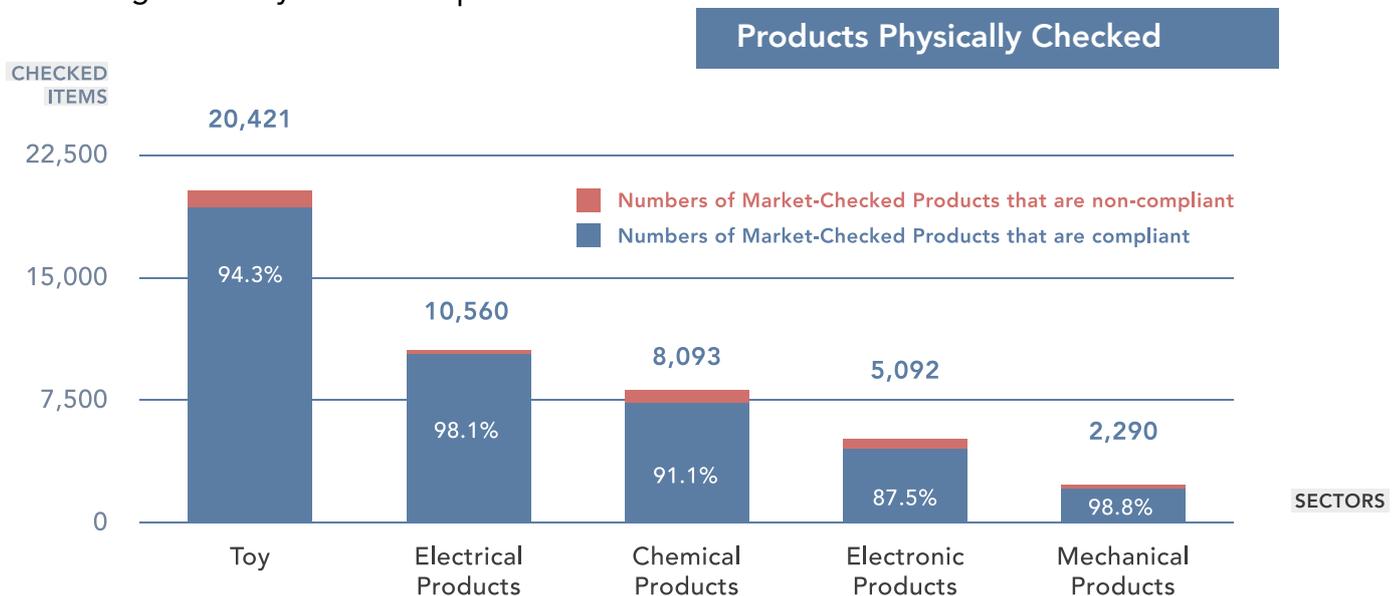
Post-market surveillance system is guided by an annual plan, prepared at the beginning of each year and forwarded to BSMI Branches located around the country for implementation. The annual plan identifies products of high risks and specifies principles for conducting surveillance activities. Market surveillance is performed by the 4 approaches listed below. Results of market surveillance activities and investigations into product incidents are used as references for making the next year’s annual plan.

- Market checks
- Sampling tests
- Incident reports & Product recall
- Report from volunteers and consumers

(1) Market Checks

The projects basically targeted products with high risks, with high frequencies of noncompliance and of concerns to the public. Such products in 2018 encompassed pencils, erasers, plastic dolls, wireless chargers, children’s caps, mobile microphones, food warming cabinets, hot towel cabinets, motorcycle tyres, ice cream makers, BB guns, 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.

In 2018, 59,290 products were market-checked for their compliance with relevant requirements, 46,456 of which were physically checked and the rest were checked over the Internet. For those physically checked, toys outnumbered other products, with the total of 20,421 items checked during the year. Compliance rate of electrical product is the highest, accounting for 98.1% of its own. The bar chart below illustrates



(2) Testing of Purchased Products

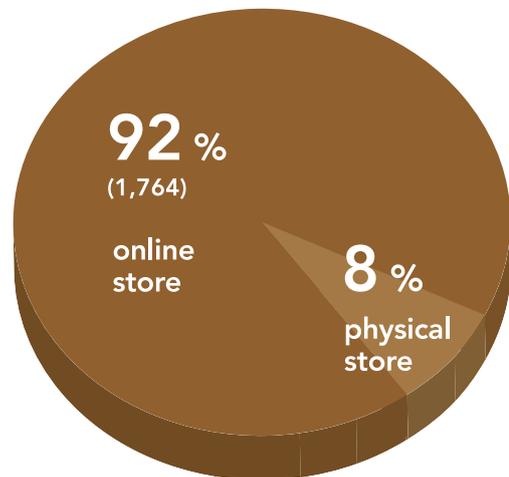
35 projects were implemented in 2018 to test 483 products purchased from the market. These projects focused on compliance of the products' critical features against national standards. For example, children's clothing was tested for the content of formaldehyde and for physical requirements of cords and 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.

For reports made by consumers, there were 1,921 reports about suspect products in 2018, of which 1,764 products were sold on the Internet, accounting for 92% of the total, due to the prevalence of e-commerce. 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.

(3) Report From Volunteers & 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 2018) are important assets of us as they serve a bridge between the bureau and consumers and help disseminate product safety knowledge. In 2018, volunteers reported 2,634 cases of regulated products that possibly violated relevant requirements, and 1,166 violations were confirmed, accounting for 44% of the reports.

2018 Reports from Consumers



2018 Reports from Volunteers



To tackle the problem, the BSMI adopts several pragmatic approaches. These approaches include monitoring products sold on popular shopping websites, strengthening cooperation with online shopping platforms by imposing an obligation on the operators to ensure that information about the compliance of products with mandatory requirements is made available to consumers, and promoting safety awareness to consumers and sellers through social medias like facebook or App Line, in which we also disseminate timely safety messages about products that are of high concern to the public.

(4) Incident Report & Product Recall

Timely incident reports are critical to avoid possible injury or serious accident from re-occurring. To encourage reporting, the BSMI operates a Product Safety Information Website allowing people involved in incidents, people with obligatory duty of reporting or volunteers to upload the information on incidents caused by unsafe products. Investigation will be initiated upon receipt of the reports. In 2018, the BSMI received 151 product incident reports, of which 132 were filed and investigated

(the other 19 being either repeated cases, forwarded to the authorities in charge for processing, or not involving products). The website also provides unsafe product information on recalled products and violating products. The information is updated daily by the Bureau, sourcing from domestic companies and competent authorities of other countries. In 2018, 1,089 pieces of information were provided on the website.



For product recall, the BSMI received 14 cases voluntarily issued by the industries in the year. One of the latest notable cases was launched after a joint audit to gas cylinder stations performed by the BSMI and Consumer Protection Commission of the Executive Yuan on 13 July 2018. Gas leaks were found due to problems with a certain type of valves of gas cylinders, which posed hazards to households. The company imports the valves was requested to recall the 117,250 items, and it went out 98.24% of recall rate due to the comprehensive approach taken jointly by the Bureau and related authorities of urging the company to recall the valves very thoroughly, meanwhile, propagating the information rapidly and continuously to the public.

Product Safety Information Website and its QR code (<http://safety.bsmi.gov.tw>)



Table 5 Number and Inspected Batches of Regulated Products by Categories

Categories	Number of Product Items	Number of Inspected Batches
Total	1,224	494,464
Live animals and animal products	-	73*
Vegetable products	-	3,330*
Animal or vegetable fats and oils and their cleavage products; preserved edible fats; animal or vegetable waxes	-	498*
Prepared foodstuffs; beverages, spirits and vinegar; tobacco and manufactured tobacco substitutes	-	1,787*
Mineral products	22	2,226
Products of the chemical or allied industries	47	1,884
Plastics and articles thereof; rubber and articles thereof	34	9,396
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	12,978
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	8,865
Pulp of wood or of other fibrous cellulosic material; recovered (waste and scrap) paper or paperboard; paper and paperboard and articles thereof	21	1,440
Textiles and textile articles	381	33,225
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	27	4,107
Articles of stone, plaster, cement, asbestos, mica or similar materials; ceramic products; glass and glassware	17	2,608
Base metals and articles of base metal	46	3,034
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	328	257,070
Vehicles, aircraft, vessels and associated transport equipment	7	6,428
Optical, photographic, cinematographic, measuring, checking, precision, medical or surgical instruments and apparatus; clocks and watches; musical instruments; parts and accessories thereof	15	2,928
Miscellaneous manufactured articles	93	142,587

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.

Table 6 Products Added to the List of Regulated Products

Product Items	Effective Date	Description
Exhaust Pipes for Gas Water Heaters (G/TBT/N/TPKM/279)	2018.07.01	Inspection standard CNS 15790 (2015). Designated inspection schemes: RPC or Type-Approved Batch Inspection.

Table 7 Revisions to Technical Regulations

	Product Items	Effective Date	Description		
			Inspection Standards Updated	Additional Inspection Standards	Inspection Scope Modified
1	Hot cathode fluorescent lamp and AC supplied electronic ballasts (G/TBT/N/TPKM/213)	2018.01.01	○	○	
2	92 items of electronic products (including radio keyboards) (G/TBT/N/TPKM/248)	2018.01.01		○	
3	Safety footwear and protective footwear (G/TBT/N/TPKM/250)	2018.01.01	○		
4	Self-ballasted fluorescent lamps (G/TBT/N/TPKM/255)	2018.01.01	○	○	
5	63 items of electrical appliances (including electric blankets) (G/TBT/N/TPKM/256)	2018.01.01 (RoHS) 2019.01.01 (Safety)	○	○	
6	40 items of electrical appliances (including air conditioners) (G/TBT/N/TPKM/258)	2018.01.01	○	○	
7	Drinking water suppliers (G/TBT/N/TPKM/259)	2018.01.01	○	○	
8	Printers and photo-copying machines (G/TBT/N/TPKM/260)	2018.01.01			○
9	7 items of electrical and electronic products (G/TBT/N/TPKM/261)	2018.01.01 (RoHS) 2019.01.01 (safety)	○	○	
10	Toys for children under 14 years of age (G/TBT/N/TPKM/270)	2018.01.01	○		

11	Pressure cookers for domestic use (G/TBT/N/TPKM/271)	2018.07.01	○		
12	Baby walkers (G/TBT/N/TPKM/274)	2018.07.01	○	○	
13	Strollers and carriages (G/TBT/N/TPKM/275)	2018.01.01	○	○	
14	Motorcycle tyres (G/TBT/N/TPKM/280)	2018.05.01	○		
15	Steel wire ropes (G/TBT/N/TPKM/284)	2018.07.01	○		
16	Lighters (G/TBT/N/TPKM/301)	2018.07.01			○
17	Ready mixed paint (synthetic resin type), enamel, solvent-base masonry paint and emulsion paint (G/TBT/N/TPKM/303)	2018.07.01	○		
18	Fire-retardant paints for buildings (G/TBT/N/TPKM/304)	2018.07.01	○		
19	Automobile tyres (G/TBT/N/TPKM/328)	2018.10.15	○		



Table 8 Proposed and Adopted Technical Regulations That Come into Effect in 2019 or a Later Time

	Product Items	Effective Date	Description		
			Inspection Standards Updated	Additional Inspection Standards	Inspection Scope Modified
1	63 items of electrical appliances (including electric blankets) (G/TBT/N/TPKM/256)	2018.01.01 (RoHS) 2019.01.01 (Safety)	○	○	
2	7 items of electrical and electronic products (G/TBT/N/TPKM/261)	2018.01.01 (RoHS) 2019.01.01 (Safety)	○	○	
3	Chargers and secondary lithium batteries for electrical bicycles and electrical assisted bicycles. (G/TBT/N/TPKM/272)	2019.01.01		○	
4	Automotive video cameras, other audio-frequency electric amplifiers and head-mounted monitors (G/TBT/N/TPKM/308)	2019.01.01		○	○
5	Ventilators/exhaust hoods (G/TBT/N/TPKM/313)	2019.01.01		○	
6	Power supply products for automotive cigar lighter (G/TBT/N/TPKM/314)	2019.01.01		○	
7	Secondary lithium cells and batteries products (G/TBT/N/TPKM/317)	2019.01.01	○		
8	Fire doors of buildings (G/TBT/N/TPKM/320)	2022.01.01	○		
9	Industrial Protective Helmets; Safety headgear (G/TBT/N/TPKM/321)	2019.01.01	○		
10	Gas grills (G/TBT/N/TPKM/322)	2019.07.01		○	
11	Hot rolled steel H-beams (G/TBT/N/TPKM/324)	2019.07.01		○	
12	Electronic toilet seats (G/TBT/N/TPKM/327)	2020.07.01		○	
13	Hoses for gas (G/TBT/N/TPKM/330)	2019.07.01		○	
14	Water dispensers (G/TBT/N/TPKM/331)	2020.01.01		○	
15	Masks claiming protection against PM 2.5 (G/TBT/N/TPKM/332)	2019.03.01		○	
16	Laser pointers (G/TBT/N/TPKM/334)	2020.01.01		○	
17	Bicycles for young children; Bicycles and other cycles (including delivery tricycles), not motorized. (G/TBT/N/TPKM/342)	2019.03.01	○		

ACTIONS OF THE YEAR



Testing and Certification



Various Testing



Certification



Quality

TESTING AND CERTIFICATION

The BSMI takes an important role in the development of the national quality infrastructure in Taiwan. It maintains testing laboratories to support the regulated regime in terms of both pre-market control and post-market surveillance. The technical competence is also of great value to fulfill tasks required in national development projects. These have yielded a variety of services in the voluntary regime that are relied upon by other government agencies and industry.

1. Laboratories of BSMI in Brief

Laboratories of BSMI are located at the Headquarters and six Branches, which provide tests mainly for physical, chemical, electrical and electromagnetic compatibility properties of products. Laboratories in headquarters also serve as hubs for technical support to those in the Branches. To make the best use of resources, specialized laboratories have been established to avoid repetition and to build on the expertise in the specialized field. The followings are the specialized areas of BSMI's testing laboratories.

Head Office	Keelung Branch	Hsinchu Branch	Taichung Branch	Tainan Branch	Kaohsiung Branch	Hualien Branch
metallic materials	suitcases	lubricants	lithium batteries	mass calibration	paints	cement
circuit breakers	electric hand tools		baby walkers	electric appliances	wires and cables	
pressure vessels	small household appliances	gas appliances	safety belts for working at height	faucets	LPG	pressure cookers
electronic products			disposable lighters	luminaires	voltage and temperature calibration	
ceramic products					performance anomaly detection / analysis	lifting jacks
				personal protective equipment	metal composition	

2. 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. It is worth mentioning here that the project "Third Party Certification for Renewable Energy" was launched during the year with a view to performing certification of offshore wind farms, which is part of the government's forward-looking infrastructure

development program on green energy. An expert team was formed in the BSMI to design, coordinate and implement the certification scheme. The certification provides investors, owners and operators with the assurance of wind farms in complying with relevant regulations and reduces the risk profile of wind projects.

For projects that the BSMI participated in 2018 and their brief descriptions are listed in Table 9.



Signing ceremony of establishing the Expert Team on Taiwan Renewable Certification. The representatives are from, left to right, ETC (Electronics Testing Center, Taiwan), MIRDC (Metal Industries Research & Development Centre), SOIC (Ship and Ocean Industries R&D Center), BSMI, TPC (Taiwan Power Company), CR (CR CLASSIFICATION SOCIETY), TIER (Taiwan Institute of Economic Research) and TERTEC (Taiwan Electric Research & Testing Center).

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 and its QR code (<http://testing.bsmi.gov.tw/wSite/mp?mp=58>)



3. Voluntary Certification Systems

The BSMI developed certification systems for industrial products, fishery products, and renewable energy 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 2018, the VPC System contained 33 product items, most of them being electrical and electronic products (e.g. fluorescent lamps and starter holders, AC motor capacitors, switches, heat pump water heater, medium and small wind turbines, stationary training equipment, etc.). There were more than 210 certified products by the end of 2018. VPC certified products can demonstrate to the market their enhanced performance and reliable quality assurance.



Product bearing 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 2018, certificates were issued to 84 food processing plants.

The BSMI also serves as one of the national contact points to coordinate administrative arrangements relevant to registration of Taiwan's processing establishments and fishing vessels with European Union, Russia, and Brazil. The numbers of registered establishments and vessels are described in Table 10.



Food Safety Management System Certificate issued by BSMI

Table 9 Participated National Programs on Science and Technology Development

Title of Category	Description of Projects
Third party certification and testing scheme NEW	The BSMI established a team of experts to design and implement the certification scheme on green energy. Green energy projects, mainly PV and wind power, will be assessed to provide reliable data for insurance grant and risk management.
Smart Grid	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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
Emerging Energy	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • Elder care occupancy detector • Wheelchair power • Power raising toilet seat • Power raising shower chair

Table 10 Registered Establishments and Vessels of Taiwan

Areas / Countries	Processing Establishments	Fishing Vessels
European Union	34	185
Russia	20	25
Brazil	28	386

ACTIONS OF THE YEAR



International Cooperation



to work with
trading partners



through exchange
of information on
standards, regulatory
practices, and so on



to ensure trade
facilitation



INTERNATIONAL COOPERATION

The different roles that BSMI takes in our national quality infrastructure have yielded a variety of international cooperation activities, which basically serve the goals that we would like to achieve both internally and externally.

Internally, we engage our partner countries in exchanges of information, practices and experts to maintain a safety and fair society, as well as to support sound development of industry. Externally, we spare no efforts to facilitate export of our products by reducing unnecessary conformity assessment costs. We also participate actively in the limited number of international organizations of which we are a member to enhance our visibility in the international community in this area.

1. Bilateral Cooperation

The BSMI's international cooperation activities on bilateral level mainly take the forms of negotiating of cooperative documents, convening formal meetings with counterpart organizations, holding joint workshops and providing training courses. The subject matters encompass a wide range of topics, which in addition to those under the BSMI's jurisdiction, may also involve the activities of other government bodies. The important activities in the year are highlighted below.

(I) Cooperation Agreement with the Standards and Metrology Institute for Islamic Countries (SMIIC)

SMIIC, consisting of 37 member countries, is a regional organization devoted to achieving uniformity in metrology, laboratory testing and standards in its member countries. An agreement was signed with SMIIC on September 4 in Taipei, which focuses on enhancing the understanding of each side's standards development and promoting cooperation on issues of interest, Halal standards for example.



(2) Joint Activities

Joint workshops are of great value to have focused discussion on issues of interest to the BSMI and partner countries. They can be used to engage both sides in exchanging experiences from considerably extensive aspects. They also build bridges between stakeholders for further cooperation. Introduction to the regulatory systems by way of workshops makes it easier for exporters to understand technical regulations of the target market and complete conformity assessment procedures in a more efficient way. There were several featured events in 2018 as listed below.

- **European Union - Offshore Wind Power Certification Seminar**
On March 14, the BSMI held a joint seminar with the European Economic and Trade Office (EETO) in Taipei on topics related to offshore wind power certification. The EU experts shared their experience in wind power investment and introduced the third-party certification system run in its Member States. The seminar attracted participation from 200.
- **New Zealand - Workshop on Gas Appliances**
The Workshop was co-hosted by the BSMI and WorkSafe in Wellington on May 3 to 4. Both sides exchanged regulations and standards, compared respective regulatory approaches, discussed elements of risk engines and identified actions towards recognizing equivalence of BSMI's certification system for gas appliances. It was one of the implementation activities taken between Taiwan and New Zealand under the Economic Cooperation Agreement signed in 2013.
- **U.S. CPSC - Safety Requirements for Bicycles and Bicycle Parts**
Under the Memorandum of Understanding on consumer product safety matters signed in 2004, the BSMI and Consumer Product Safety Commission (CPSC) work together to organize joint activities on a regular basis. "Training Seminar on Safety Requirements for Bicycles and Bicycle Parts in the United States, Taiwan, and Japan" was held in Taipei on November 1. It was held as a side event to the 2018 Taipei Cycle, one of the world greatest bicycle exhibitions in these years, and opened to the public and bicycle industry. In the seminar, the regulatory systems of the three countries was introduced and speakers, both from governmental agencies and industries, shared their first line experiences and information with the audience, such as updated studies of injury cases caused by components or construction of the products.
- **GSO - Workshops on Product Safety Systems**
On July 24 to 27, the BSMI invited 2 experts from GCC Standardization Organization (GSO) to Taiwan to introduce GSO's technical regulations on toys and low voltage equipment, as well as the GSO system of notified bodies. The events were held with a view to expanding substantial cooperation and business opportunities that are under the framework of 2016 signed MoU between the two authorities.



(3) Training Courses

The BSMI provides partner countries with training courses, which are tailored based on the needs identified, to assist them in developing a technical infrastructure in line with international practices. By sharing the ways relevant systems operate in Taiwan, we hope that trade can be facilitated as a result of alignment of regulatory systems.

On December 3 to 7, the BSMI received a team of 5 delegates from the Directorate General of Consumer Protection and Trade Compliance, Ministry of Trade of Indonesia, for training courses on fluid and gas flow meter calibration and testing. The cooperation was part of the activities of a Memorandum of Understanding between Taiwan and Indonesia signed on August 24, 2018.

(4) Implementation of Mutual Recognition Arrangements (MRAs)

Taiwan has signed MRAs on conformity assessment results with 7 countries. They basically cover electrical and electronic products. While the ones with the United States, Canada and Australia only apply to recognition of test reports, the ones with New Zealand, Singapore and Japan are full-fledged, with recognition extending to certificates. Testing laboratories or certification bodies were designated under the MRA frameworks, which allow products for export to the other contracting party to be tested locally, thus saving time and costs for industry. The one with the Philippines was most recently signed and implementation details are under discussion.

Bilateral — Mutual Recognition

	Information Technology Equipment	Electronic Products	Electrical Products	Tyres
USA	EMC Test Reports			
Canada				
Australia	EMC Test Reports			
Singapore	EMC + Safety Test Reports + Certificates			
New Zealand				
Japan				
The Philippines			Sampling + Test Reports	

2. Multilateral Cooperation

(1) Activities under WTO/TBT Agreement

- The BSMI operates the TBT Enquiry Point as required by the WTO Agreement on Technical Barriers to Trade (TBT). Five main functions are given by this enquiry point:
 - a. To disseminate and translate TBT notification circulated by WTO Secretariat;
 - b. To assist regulatory authorities in submitting TBT notifications and responding to comments and inquiries made by other WTO Members;
 - c. To assist domestic stakeholders in providing comments on adopted or proposed measures by other WTO Members and to respond to their inquiries;
 - d. To convene domestic inter-agency TBT committee meetings and coordinate views with different authorities on issues being discussed at the WTO/TBT Committee meeting; and
 - e. To maintain domestic on-line TBT notification database.
- In 2018, the number of submitted notifications was 83, in which 46 were Addenda or Corrigenda and 37 were New Notification and Revision.

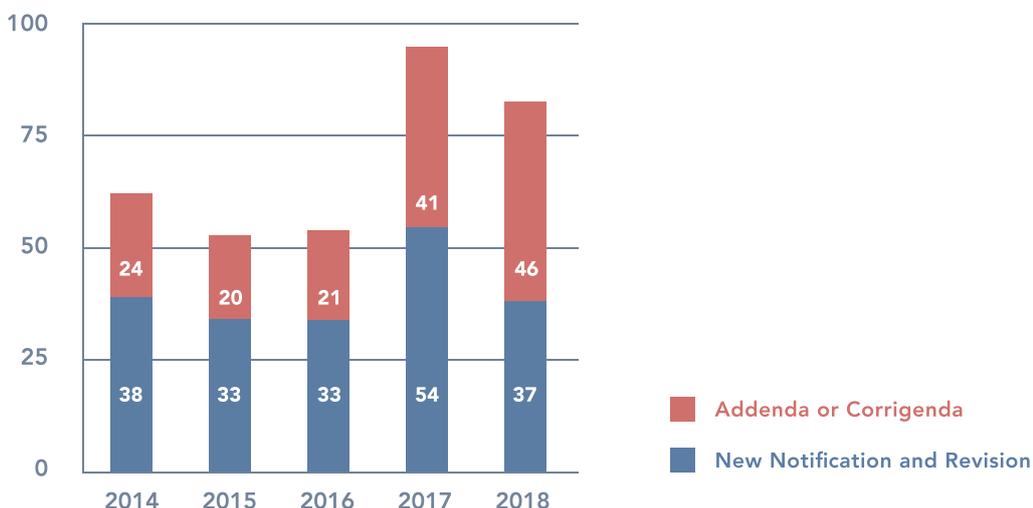
- On the occasion of the Eighth Triennial Review of the TBT Agreement, a discussion paper on “Proposal on Holistic Approach to Risk Assessment” was submitted. It suggested that risk assessment be discussed in a more comprehensive way due to the important role that it plays in preparation for technical regulations, standards and conformity assessment procedures to achieve the goal pursued by the TBT Agreement. It also suggested that thematic sessions be held to form common understanding by WTO Members of this issue. The proposal was adopted and a thematic session on risk assessment was held on March 5, 2019.

(2) Activities under APEC/SCSC

The BSMI is responsible for coordinating Taiwan’s participation in activities of the Sub-Committee on Standard and Conformance (SCSC) of Asia-Pacific Economic Cooperation (APEC).

In 2018, two conferences were held in Taipei.

- “APEC Conference on Analytical Techniques for New Psychoactive Substances in Foods” (June 27)
- “2018 APEC Workshop on Food Safety and Food Adulterated with Drugs” (September 12-13)



(3) Participation in International Event

Below table lists the participation in various international events of the Bureau throughout the year.

Date	Name of Events
February 20-23	2018 ICPHSO Annual Meeting and Training Symposium, Orlando, U.S.A.
February 25-27	APEC/SCSC 1 Meeting, Port Moresby, Papua New Guinea
March 7-8	The 32nd GLP Working Group Meeting, Paris, France
April 4-11	IAF-ILAC Joint Mid-Term Meetings, Frankfurt, Germany
May 14-17	2018 Joint IEEE EMC & APEMC Symposium
June 1-9	2018 APLAC-PAC Joint Annual Meetings, Kyoto, Japan
June 18-22	The 67th Meeting of ISO/IEC JTC 1/SC2/WG2, London, U.K.
June 19-21	WTO/TBT Committee Meeting, Geneva, Switzerland
August 5-6	The 23rd APEC JRAC on EEE Meeting, Port Moresby, Papua New Guinea
August 7-9	APEC/SCSC 2 Meeting, Port Moresby, Papua New Guinea
October 1-5	Meeting of ISO /TC39/SC2, Salzburg, Österreich
October 8-12	Annual Meeting of CIML, Hamburg, Germany
October 22-31	2018 IAF/ILAC Joint Annual Meetings, Singapore
October 29-November 2	ISO/TC229 Nanotechnologies 21st Plenary Meeting and Related Meetings, Kuala Lumpur, Malaysia
November 7-9	The 25th APLMF Forum and Working Group Meetings, Christchurch, New Zealand
November 13-16	BIPM - 26th CGPM, Versailles, France

Table 11 List of Cooperative Partners Based on Signed Agreement or MoU

Cooperation Items	Cooperation Partners
Mutual Recognition of Conformity Assessment Results	<ol style="list-style-type: none"> 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 Spectrum Management 6. Standards, Productivity and Innovation Board, Singapore 7. United States Environmental Protection Agency 8. Ministry of Economy, Trade and Industry, Japan 9. International Accreditation New Zealand 10. Bureau of Philippines Standards
General Cooperation (Information and Expert Exchange)	<ol style="list-style-type: none"> 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 17. The Standards and Metrology Institute for the Islamic Countries (SMIIC) NEW

Cooperation Items	Cooperation Partners
Standards	<ol style="list-style-type: none"> 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	<ol style="list-style-type: none"> 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	<ol style="list-style-type: none"> 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, eSwatini 4. Directorate General of Consumer Protection and Trade Compliance, Ministry of trade of Indonesia NEW



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