EXPLANATORY NOTE

Measurement has a role in most of the things we do from day to day. Measurement is indispensable from measuring the ratio of rice to water in cooking to measuring the distance between your house and your workplace to estimate travel time.

Recognizing this fact, we are proposing to strengthen the National Metrology Division of the Department of Science and Technology and reorganize them into the National Measurement Institute of the Philippines in order to maintain and continuously update the national measurement standards in all relevant fields in the country. Under this bill, the institute will be designated as the country's primary agency for policy, program coordination and administrative supervision for metrology.

The bill also proposes to establish the National Metrology Training Center in order to provide capacity building trainings of calibration laboratories, national regulators, local government units and other entities responsible for implementing legal metrological controls. This is especially important in maintaining standards for government programs and projects such as infrastructure. The bill aims to ensure that measurements in the country are reliable.

The approval of this bill is earnestly sought.

[Signature]

LUIS RAYMUND "LRAY" F. VILLAFUERTE, JR.
AN ACT
MODERNIZING THE NATIONAL MEASUREMENT SYSTEM (NMS) OF THE PHILIPPINES, APPROPRIATING FUNDS THEREFOR AND FOR OTHER PURPOSES

Be it enacted by the Senate and House of Representatives of the Philippines in Congress assembled:

SECTION 1. Short Title. – This Act shall be known and cited as the "Modernized National Measurement System Act".

SECTION 2. Declaration of Policy. – It is hereby declared to be the policy of the State to facilitate the development of scientific and technical knowledge and progress in the national economy by providing a modernized National Measurement System (NMS) that will ensure the integrity of measurements in the country, meet regional and international requirements, and provide support for the competitiveness of Philippine products and services. The State shall also support the undertaking of necessary activities to promote metrology, to develop appropriate infrastructures, to support research in metrology and to protect the health, safety and interest of every citizen and his environment against possible abuse related to measurements.

The State shall support the harmonization of national requirements, including technical regulations, document standards and conformity assessment procedures, with international requirements as envisioned in the ASEAN Economic Community
(AEC), World Trade Organization (WTO) and other international agreements and covenants resulting to free flow of goods and services, and a predictable trading environment.

The State shall provide support to metrology research and development for the purpose of continuously improving the national measurement standards and their measurement uncertainties, developing novel measurement techniques and technologies aiming at Philippine industry take-up to stimulate industrial innovation; coming-up with solutions for societal challenges focusing on contributions for energy efficiency, food security, environment protection, and citizen’s health, security and economic well-being; and address locally the measurement needs of society and industry.

SECTION 3. Scope. – This Act shall cover all agencies, institutions, entities involved in metrological activities and processes, both private and public.

SECTION 4. Objectives. – In furtherance of the policies enunciated in this Act, the following objectives shall be pursued:

(a) Transform the existing National Metrology Division of the Industrial Technology Development Institute to the National Measurement Institute of the Philippines directly under the Department of Science and Technology;
(b) Designate the National Measurement Institute of the Philippines as the country’s national metrology institute;
(c) Ensure that measurements in the country are reliable;
(d) Strengthen and harmonize the country’s measurement system in accordance to international best practices to support confidence to in measurements in for regulation, trade and manufacturing;
(e) Implement legal metrological controls of measuring instruments in the country—in the interest of fair trade, health, safety, law enforcement, and environment protection.
(f) Disseminate knowledge on state-of-the-art calibration techniques and develop competencies on legal metrological controls through capacity building programs; and
(g) Foster a metrology culture that will instill a keen appreciation of the metrology as a discipline through the integration of metrology courses in the educational system.

SECTION 5. Definition of Terms. – For the purpose of harmonizing with international best practices, the following terms are in reference to the International Vocabulary of Metrology and International Vocabulary of Legal Metrology:

(a) **Accreditation** – is the process in which an authoritative body formally recognizes the competence, impartiality and capability of an organization to carry out specific activities, such as certification, testing, calibration and inspection.

(b) **ASEAN Common Requirements of Prepackaged Products** – is a regionally-agreed document specifying the labeling requirements and allowed quantity deficiency in prepackaged products for ASEAN Member States namely Brunei Darussalam, Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, Philippines, Singapore, Thailand and Viet Nam.

(c) **Asia Pacific Legal Metrology Forum (APLMF)** – is a grouping of legal metrology authorities from the Asia Pacific Economic Co-operation Member economies and other economies in the Pacific Rim for the development of legal metrology and promotion of free and open trade in the Asia Pacific region through harmonization and removal of technical or administrative barriers to trade in the field of legal metrology.

(d) **Asia Pacific Metrology Programme (APMP)** – is a grouping of national metrology institutes from the Asia-Pacific region for the promotion and support of a measurement infrastructure in the Asia Pacific region that facilitates international trade, improves industrial efficiency and competitiveness, ensures equity in the marketplace, and enhances the quality of life and the environment through reliable measurements.

(e) **Calibration** – operation that, under specified conditions, in a first step, establishes a relation between the quantity values with measurement uncertainties provided by measurement standards and corresponding indications with associated measurement uncertainties and, in a second
step, uses this information to establish a relation for obtaining a measurement result from an indication.

(f) **Calibration laboratories** – public or private entities that perform tests and/or calibrations in a permanent, temporary, or remote location.

(g) **Certification** – procedure by which a third party provides written attestation that a product, process or service meets specified requirements.

(h) **Conformity assessment** – is a set of processes that shows a product, service or system meets specified requirements. The main forms of conformity assessment are testing, certification, and inspection.

(i) **Designated institutes** – are organizations or entities appointed by a country's national metrology institute to hold specific measurement standards or services that are not covered by the national metrology institute.

(j) **Inspection** – examination of a measuring instrument to ascertain all or some of the following: verification mark and/or certificate is valid, no sealing marks are damaged, after verification the instrument suffered no obvious modification, its errors do not exceed the maximum permissible in service errors. Inspection of a measuring instrument may be done only after verification.

(k) **International System of Units or Système International d'Unités (SI) in French** – is the modern metric system establishing seven base units for base quantities namely metre for length, kilogram for mass, second for time, ampere for electric current, kelvin for thermodynamic temperature, mole for amount of substance and candela for luminous intensity. The derived units of the SI (e.g. metre per second, watt, newton, etc.) are then formed as products of powers of the base units, according to the algebraic relations that define the corresponding derived quantities in terms of the base quantities.

(l) **Legal metrological controls** – series of evaluations and periodic checks performed on regulated measuring instruments throughout their lifetime to monitor if they are still suitable for their intended use. For prepackaged products, it refers to the checking of the quantities contained in the package with reference to the quantity indicated in the label.

(m) **Legal metrology** – is the practice and process of applying regulatory
structure and enforcement to measurements and measuring instruments to ensure trade and legal decisions are fair, and that the health, safety and interest of every citizen and his environment are protected against possible abuse related to wrong measurements.

(n) **Legal units of measurement** – units of measurement required or permitted by regulations.

(o) **Measurement standard** – is a material measure, measuring instrument, reference material or measuring system intended to define, realize, conserve or reproduce a unit, or one or more values of a quantity to serve as a reference.

(p) **Measuring instrument** – is a device used for making measurements, alone or in conjunction with one or more supplementary devices. This may be an indicating measuring instrument or a material measure.

(q) **Metre Convention** – is a diplomatic treaty which established a permanent organizational structure for member governments to act in common accord on all matters relating to metrology.

(r) **Metrological traceability** – is the property of a measurement result whereby the result can be related to a reference through a documented unbroken chain of calibrations, each contributing to the measurement uncertainty.

(s) **Metrology** – science of measurement and its application. It includes all theoretical and practical aspects of measurement.

(t) **National accreditation body** – is a national organization which attests to the competence and impartiality of conformity assessment bodies (testing and calibration laboratories, certification and inspection bodies), according to internationally accepted standards.

(u) **National measurement standards** – measurement standard recognized by national authority to serve in a state or economy as the basis for assigning quantity values to other measurement standards for the kind of quantity concerned.

(v) **National Measurement System (NMS)** – collective infrastructure of national facilities, expertise, knowledge and research, and is also a legal framework for reliable, consistent and internationally recognized
measurement. The infrastructure encompasses essential elements of both the public and private sector.

(w) **National metrology institutes** – are bodies with the responsibility of maintaining the national measurement standards and disseminating the SI Units nationally (i.e. they provide metrological traceability).

(x) **International Organization for Legal Metrology or Organisation Internationale de Métrologie Légale (OIML) in French** – is an intergovernmental organization comprising of one hundred twenty-six (126) governments that establishes the coordination and harmonization at the international level the administrative and technical regulations applied to measurements and measuring instruments passed by different governments.

(y) **OIML recommendations** – are model regulations that establish the metrological characteristics required of certain measuring instruments and which specify methods and equipment for checking their conformity. These model regulations are concerned with the acceptable tolerances referred to as maximum permissible errors, within which regulated measurements and measuring instruments should operate despite variations in temperature and humidity, power supply and electromagnetic interference.

(z) **Prepackaged products** – are commodities that are enclosed in a container or wrapped in any manner, and for which their quantities have been determined and indicated on their labels prior to being offered for sale. The quantity contained cannot be changed without the prepackaged product being opened or doing a perceptible modification.

(aa) **Proficiency testing** – is a comparison activity that determines the performance of individual laboratories for specific tests or measurements and is used to monitor laboratories’ continuing performance.

(bb) **Working measurement standard** – is a measurement standard that is used routinely to calibrate or verify measuring instruments or measuring systems.

SECTION 6. **National Measurement Institute of the Philippines.** – The National Metrology Division (NMD), a division under Industrial Technology Development Institute responsible for establishing and maintaining the national measurement
standards in physical quantities, is hereby transformed to the National Measurement Institute of the Philippines (NMIPhil). Thereafter, all powers, functions, duties, records, files and assets including plantilla positions of the NMD shall be transferred to the NMIPhil. There shall be no diminution of rank and salaries, allowances and benefits of transferred employees. New employees of NMIPhil shall be entitled to the same allowances and benefits as those of the transferred employees.

The NMIPhil shall be designated as the country's national metrology institute. It shall be an attached agency of the Department of Science and Technology (DOST) for policy, program coordination and administrative supervision.

The NMIPhil shall be headed by a Director General. The Director General shall be appointed by the President upon recommendation by the Secretary of the DOST and shall receive the benefits, privileges and emoluments equivalent to the rank of Undersecretary.

As the chief executive officer of the NMIPhil, the Director General shall exercise general supervision and control to its technical and administrative personnel and shall be assisted by at least one (1) Deputy Director General.

The NMIPhil, in coordination with the Department of Budget and Management and the Civil Service Commission, shall determine the appropriate administrative and technical support complement necessary for the effective and efficient operations of the Institute.

SECTION 7. Functions, Duties and Responsibilities of the National Measurement Institute of the Philippines. – The NMIPhil shall have the following functions:

(a) Maintain and continuously update the national measurement standards in all relevant fields for the Philippines; as such the NMIPhil shall guarantee that all metrological laboratories, infrastructure, equipment, instruments, artifacts, reference standards and other similar articles are in good condition,
internationally compliant and reliant and other qualities that may be required in the future;

(b) provide metrological traceability to the International System of Units (SI) for measurements used in regulations, trade and manufacturing;

(c) facilitate international harmonization and comparability of measurements;

(d) strengthen the collaboration with calibration laboratories in the areas of capacity building-and harmonization of measurement procedures;

(e) offer technical support to industry in measurement related issues;

(f) appoint competent laboratories as “Designated Institutes” for specific measurement fields of national interest not covered by the national metrology institute e.g. ionizing radiation and time among others;

(g) coordinate with other local institutes/bodies having metrological responsibilities (radiation, standard time and dissemination, etc)

(h) disseminate knowledge and competencies in metrology through education and capacity building programs to relevant regulatory bodies and other entities responsible for the implementation of legal metrological controls

(i) engage and/or coordinate research and development work in metrology;

(j) strengthen and develop a human resource development program. Hence, there shall be a continuing human resource development program; provided that capacity building activities needed to upgrade capacities of technical personnel to a travel bond or its equivalent return of service as determined by existing laws. Otherwise, the NMIPhil may invite foreign experts to conduct trainings, render technical services such as repair, calibration and the like, which shall be charged to its funds.

(k) represent the Philippines’ interest in international and regional metrology organizations; and,

(l) provide support to Quality Infrastructure-related institutes, especially standardization and accreditation in aspects related to metrology

SECTION 8. National Measurement Standards. – The NMIPhil shall periodically undertake metrological activities, calibration, re-calibration and other related activities to effectively undertake its functions, duties and responsibilities, and comply with international standards.
Any equipment, instrument, artifact, and/or other National Measurement Standards used by NMIPhil that shall be subject to such activities, including proficiency testing, comparison measurements, preventive maintenance and repair, requiring foreign technical services; such processes shall be exempt from any taxes, dues, and other impositions by the Bureau of Customs, Bureau of Internal Revenue or by the Secretary of Finance. The implementing mechanism shall be included in the Implementing Rules and Regulations of this Act.

SECTION 9. Memberships of the Philippines. — The State shall ensure, through the NMIPhil, that the Philippines’ measurement system is linked to the global metrology system by becoming a Signatory to the Metre Convention, a Full Member of the Asia Pacific Metrology Programme (APMP), a Member State of the International Organization for Legal Metrology (OIML) and a Full Member of the Asia Pacific Legal Metrology Forum (APLMF).

Linkages or affiliations to other international and regional metrology organizations and/or associations, other than those mentioned, that are of interest to the country’s national measurement system, shall be established.

SECTION 10. National Metrology Board. — The National Metrology Board (NMB), hereinafter referred to as the Board, shall be chaired by the Secretary of the DOST. It shall be composed of the Secretaries of the following agencies or their duly authorized representative preferably with the rank of Undersecretary, as ex officio members:

(a) Department of Environment and Natural Resources (DENR)
(b) Department of Health (DOH)
(c) Department of Trade and Industry (DTI)
(d) Department of Energy (DOE)
(e) Union of Local Authorities of the Philippines (ULAP)
(f) National Measurement Institute of the Philippines (NMIPhil)
(g) One (1) representative each from the:
   i. manufacturing industry sector;
   ii. local manufacturer of measuring instruments; and
iii. private calibration laboratories / professional metrology association of national membership;

with a term of (3) years to be appointed by the Secretary of the DOST.

The Board may call upon the heads of the following departments/agencies and private institutions such as, but not limited to:

- Department of Agriculture (DA)
- Department of Justice (DOJ)
- Department of Interior and Local Government (DILG)
- Department of National Defense (DND)
- Department of Information Communication Technology (DICT)
- Department of Public Works and Highways (DPWH)
- Department of Transportation (DOTr)
- Local Government Units (LGUs)
- Bureau of Customs (BOC)
- Energy Regulatory Commission (ERC)
- Food and Drug Administration (FDA)
- Manila International Airport Authority (MIAA)
- Manila Electric Company (MERALCO)
- Manila Water Company, Inc.
- Maynilad Water Services, Inc.
- Metropolitan Manila Development Agency (MMDA)
- Metropolitan Waterworks and Sewerage System (MWSS)
- National Food Authority (NFA)
- National Meat Inspection Service (NMIS)
- National Telecommunications Commission (NTC)
- Oil Industry Management Bureau (OIMB)
- Philippine Drug Enforcement Agency (PDEA)
- Sugar Regulatory Authority (SRA)

as the Board deems necessary for the effective implementation of this Act.

The Board shall convene at least twice a year. Special meetings may be convened upon the request of the Chair or majority of the Board members. Each member of
the Board shall be entitled to incentives and allowances for his/her attendance to regular and special meetings based on prevailing DOST guidelines.

The National Measurement Institute of the Philippines is hereby mandated to serve as the Board's Secretariat.

SECTION 11. Functions, Duties and Responsibilities of the National Metrology Board. – The Board shall be responsible for legal metrological controls in the country through the coordination with other executive branches of government, and ensuring uniformity of procedures in the same prescribed manner and their implementation.

In the exercise of its functions, duties and responsibilities, the Board shall have the power to delegate authority to public and private entities to ensure that measurements and measuring instruments used in trade, health, safety, law enforcement and environment protection are subjected to legal metrological controls and are complying with the relevant regulations.

The Board shall likewise perform such other functions to progressively implement this Act.

SECTION 12. National Measurement System. – The National Measurement System (NMS) shall provide and maintain the necessary infrastructure to support confidence in measurements used for regulation, trade, and manufacturing in the country.

The NMS shall cover the:
(a) legal units of measurement;
(b) national measurement standards;
(c) hierarchy of measurement standards and metrological traceability;
(d) national legal metrology regulations for measurements and measuring instruments;
(e) legal metrological controls;
(f) certification system; and
(g) accreditation system.

SECTION 13. Registration of Regulated Measuring Instruments. – The State shall require the registration of all measuring instruments used in trade, health, safety, law enforcement and environment protection with the relevant National Regulators and Local Government Units.

Those measuring instruments used as working measurement standards by the National Regulators, Local Government Units, and Board-authorized entities in the implementation of legal metrological controls, shall be registered with the Board, through the NMB Secretariat.

SECTION 14. Legal Units of Measurement. – The International System of Units (SI) and combinations of those units shall be the legal units of measurement mandated to be used in the Philippines including the following:

(a) non-SI units accepted for use with the SI (e.g. minute, hour, day for time, hectare for area, tonne for mass, bar for pressure, angstrom for length, nautical mile for distance, decibel for sound level); and

(b) non-SI units allowed by international agreement (e.g. feet for altitude navigation and mm Hg for blood pressure).

SECTION 15. Hierarchy of Measurement Standards. – The NMIPhIl shall maintain the national measurement standards for the legal units-having the highest accuracy for the country, and provide calibrations at appropriate levels of accuracy for the calibration laboratories, National Regulators and Board-authorized public or private entities to disseminate the SI units. The national measurement standards shall in all cases be those assumed to be the most accurate measurement standards of the country.

Private and public calibration laboratories including the DOST Regional Offices shall, in turn provide lower-accuracy calibrations and measurements to industry and the community using working measurement standards that have been calibrated by the NMIPhIl. Similarly, National Regulators, Local Government Units and entities authorized by the Board, on the premise that their working measurement standards
are of the same accuracy level as those of the calibration laboratories, shall provide legal metrological controls of measuring instruments using working measurement standards calibrated by the NMIPhil.

SECTION 16. Metrological Traceability. – Measurements in both the regulated and non-regulated areas shall be traceable to the SI through the national measurement standards maintained by the country’s national metrology institute to ensure international compatibility and acceptance of measurement results.

For traceability not provided through the NMIPhil, the State shall recognize measurement standards of other national metrology institutes provided they are internationally accepted by the global metrology community.

SECTION 17. Legal Metrological Controls. – Measuring instruments used in trade, health, safety, law enforcement and environment protection shall be evaluated based on the relevant OIML Recommendations and/or ASEAN Guidelines by the National Regulators, Local Government Units and other Board-authorized entities.

Compliance to quantity and labeling requirements of prepackaged products shall be checked by the National Regulators, Board-authorized public and private entities in accordance with the ASEAN Common Requirements of Prepackaged Products and/or OIML Recommendations.

SECTION 18. Right of Access. – The National Regulators, Local Government Units and Board-authorized public or private entities, upon presentation of their credentials and to perform their duties; shall have the right of access to every establishment or commercial premise, where regulated measuring instruments are, or may be installed, kept or used.

In the same manner, they shall also have the right of access to every premise or facility where prepackaged products are manufactured, or may be filled, packed, labeled, kept or offered for sale.
Any officer or agent of the establishments, commercial premises or other facilities who shall refuse the inspection shall be liable to the penalties imposed under Section 25 of this Act.

SECTION 19. Certification System. – The State shall establish a certification system to ensure that legal metrological controls are carried-out only by competent personnel.

SECTION 20. Accreditation System. – The State shall maintain an accreditation system to ensure the technical competence of calibration and testing laboratories in the performance of their services under the terms of ISO/IEC 17025 “General Requirements for the Competence of Testing and Calibration Laboratories.” The Philippine Accreditation Bureau (PAB), as the national accreditation body of the Philippines shall be responsible to accredit inspection, testing and certifying bodies, and other bodies offering conformity assessment services.

SECTION 21. Prohibited Acts. – The following shall constitute prohibited acts of any person or juridical person and are hereby declared unlawful:

(a) to sell, offer, or expose for sale goods or products with a quantity less than the quantity represented;
(b) to represent the quantity in any manner or intending to mislead or in any way deceive another person;
(c) failure to register regulated measuring instruments;
(d) use of unregistered regulated measuring instruments;
(e) hinder or obstruct any National Regulators, Local Government Units and Board-authorized entities in the performance of their duties;
(f) impersonate a National Regulator, Local Government Units and Board-authorized public and private entity;
(g) affix fake or undue conformity marking or verification marks;
(h) use of units other than the legal units of measurement in trade, commercial transactions, documentation and advertisements for products and services, publications, or training
(i) use of regulated measuring instruments which have not been submitted to legal metrological control;

(j) use of regulated measuring instruments which have failed the legal metrological control and are giving false/wrong measurements;

(k) affix false conformity markings or affix conformity markings illegally on measuring instruments;

(l) falsification of documents relative to legal metrological control;

(m) remove or tamper any tag, seal, or mark from any weight or measure or measuring instrument without being duly authorized by the proper authority; and

(n) manipulate software and/or hardware of measuring instruments to give false measurements.

SECTION 22. National Metrology Training Center. – A National Metrology Training Center shall be established and operated by the NMIPhil to undertake training on metrology for the capacity building of calibration laboratories, National Regulators, Local Government Units and other Board-authorized entities responsible for implementing legal metrological controls in the country.

SECTION 23. Public Information/Advocacy. – The NMIPhil in collaboration with other concerned government agencies and stakeholders, shall engage in information campaigns and advocacy programs to increase the public’s awareness on metrology and instill greater appreciation of metrology by the public.

SECTION 24. Education. – The NMIPhil, Department of Education, Commission on Higher Education and other concerned government agencies shall formulate the design and details of a curriculum on metrology and its inclusion in all levels of the Philippines’ education system.

SECTION 25. Penalties. – Any person who violates any provision of this Act shall be penalized by imprisonment of not less than six (6) months but not more than five (5) years or fine of not less fifty thousand (Php 50,000.00) but not more than five hundred thousand (Php 500,000.00) or both upon the discretion of the court: Provided, however, that if the violator is a corporation, firm, partnership or
association, the penalty shall be imposed upon the president or the manager or any officer thereof who knows or ought to have known the commission of the offense.

SECTION 26. Transitory Provisions. – The transfer of functions, assets, funds, equipment, properties, transactions, and personnel of the affected agency, and the formulation of the internal organic structure, staffing pattern, operating system, and revised budget of NMIPhil, shall be completed within six (6) months from the effectivity of this Act, during which time, the existing personnel shall continue to assume their posts in holdover capacities until new appointments are issued.

Provided, That after the transformation of National Metrology Division as specified in Section 6 of this Act, the DOST, in coordination with the DBM, shall determine and create new positions.

SECTION 27. Appropriations. – The amount necessary to carry out the provisions of this Act shall be included in the General Appropriations Act for the year following its enactment and every year thereafter.

In addition to the GAA, eighty percent (80%) of the fees and charges collected by the NMIPhil, NMB Secretariat and the DOST Regional Offices from metrology-related works including calibration and measurement services, technical trainings, and proficiency testing services shall be retained and correspondingly used by the NMIPhil and DOST Regional Offices in the upkeep and modernization of measurement standards and facilities, purchase of measurement standards and equipment, promotion of metrology culture, awareness raising programs and advocacy campaigns, among others. The remaining amount shall be remitted to the National Treasury.

SECTION 28. Implementing Rules And Regulations. – The DOST in coordination with other concerned government departments, agencies and representatives mentioned in Section 9 hereof shall within one hundred eighty (180) days from the effectivity of this Act issue the necessary implementing rules and regulations of this Act.
SECTION 29. Separability Clause. – Should any provision herein be declared unconstitutional, the same shall not affect the validity of the other provisions of this Act.

SECTION 30. Repealing Clause. – All laws, decrees, orders, rules, and regulations or other issuances or parts inconsistent with the provisions of this Act are hereby repealed, amended, or modified accordingly.

SECTION 31. Effectivity Clause. – This Act shall take effect in fifteen (15) days after publication in the Official Gazette or in one (1) newspaper of general circulation in the Philippines.

Approved,