



Innovation, Science and
Economic Development Canada
Measurement Canada

Innovation, Sciences et
Développement économique Canada
Mesures Canada

Canada

Presentation to the delegation of Indonesia

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Introduction and Agenda for Today

- Introductions
- Measurement Canada's mandate
- Programs and Services
- Authorized Service Providers (ASPs)
- Compliance and Enforcement

Measurement Canada

- In Canada, legal metrology (trade measurement) is governed by the *Weights and Measures Act* and *Electricity and Gas Inspection Act*.
- These two Acts, administered and enforced solely by Measurement Canada, govern all trade measurement in Canada.
- The Acts and associated Regulations
 - Identify and define legal units of measurement
 - Establish rules for measuring devices and measurements
 - Identify legal obligations for device owners and Measurement Canada
 - State the consequences for non compliance (fines and penalties)

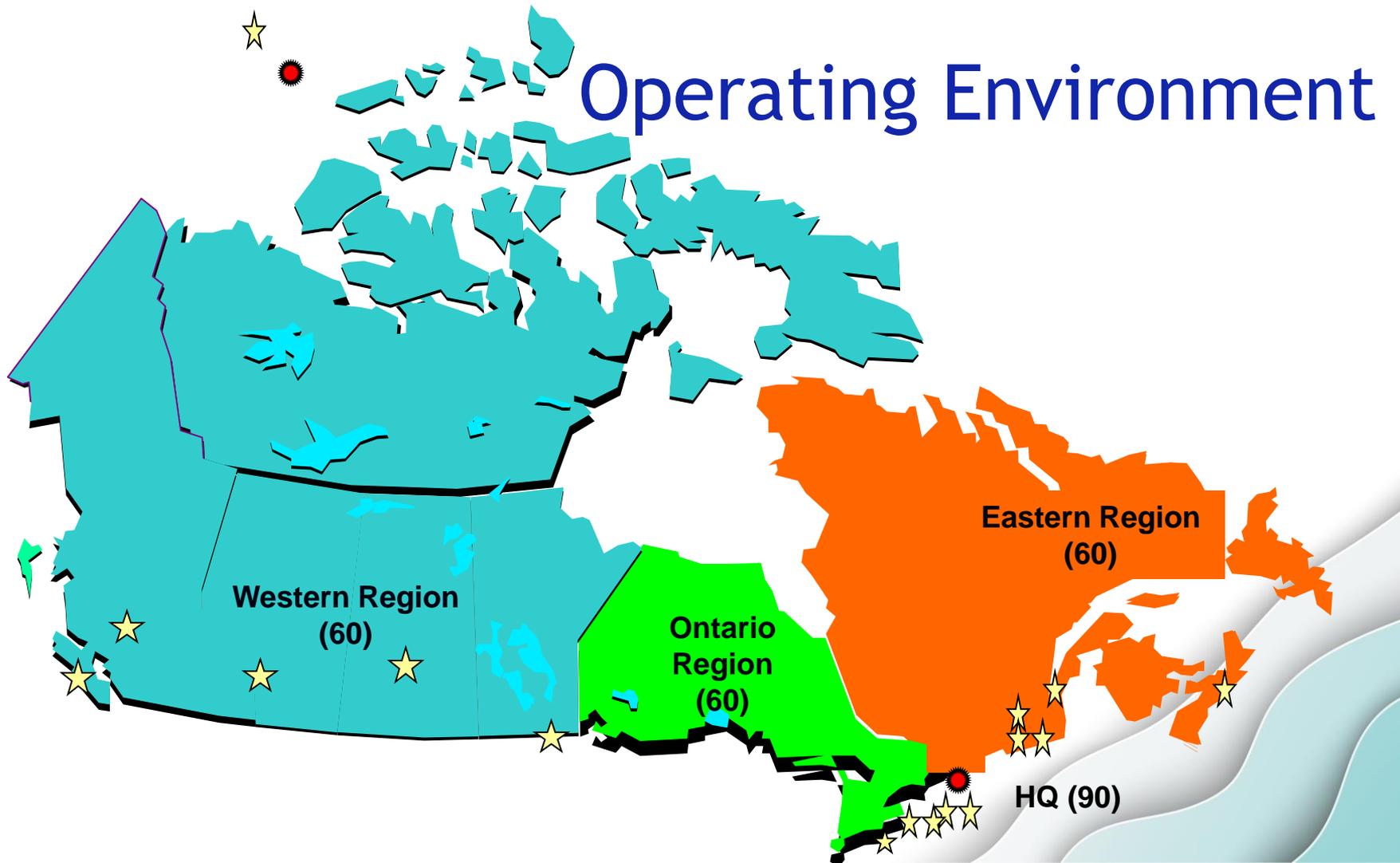
Legislative Mandate

- Financial-based measurement transactions in over 39 trade sectors, such as:
 - Retail food products
 - Retail petroleum
 - Electricity
 - Natural gas
 - Precious metals and gem stones
 - Fishing
 - Forestry
 - Dairy
 - Mining
 - Field and grain crops
 - Road construction
- Measuring devices used in retail and commercial applications, including:
 - Residential and commercial electricity and natural gas meters
 - Retail and industrial scales
 - Gasoline pumps and propane dispensers
 - Bulk petroleum meters
 - Milk receiving meters and systems
- Marking and net quantity requirements for commodities

Programs and Services

- Develop rules and requirements, policies and procedures for measuring devices and measurement transactions.
- Certify and calibrate standards of mass, volume, pressure, temperature, length and various electrical quantities.
- Evaluate and approve prototype measuring devices.
- Test and certify compliance of devices with the Acts and Regulations, compelling corrective action where necessary.
- Authorize private sector companies to perform inspections.
- Investigate business and consumer complaints of suspected inaccurate measurement.

Operating Environment

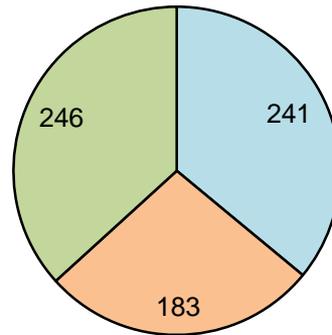


Alternative Service Delivery

- Measurement Canada recognizes private sector organizations to perform inspections, calibrations and approval testing on the agency's behalf
- These organizations must meet strict criteria, including:
 - Training and evaluation requirements
 - Use of test procedures accepted by Measurement Canada
 - Use of certified and traceable test equipment
 - Implementation of a quality management system in certain cases
- Measurement Canada maintains strong audit/oversight role
- Authorized service providers cannot take enforcement action when non compliance identified

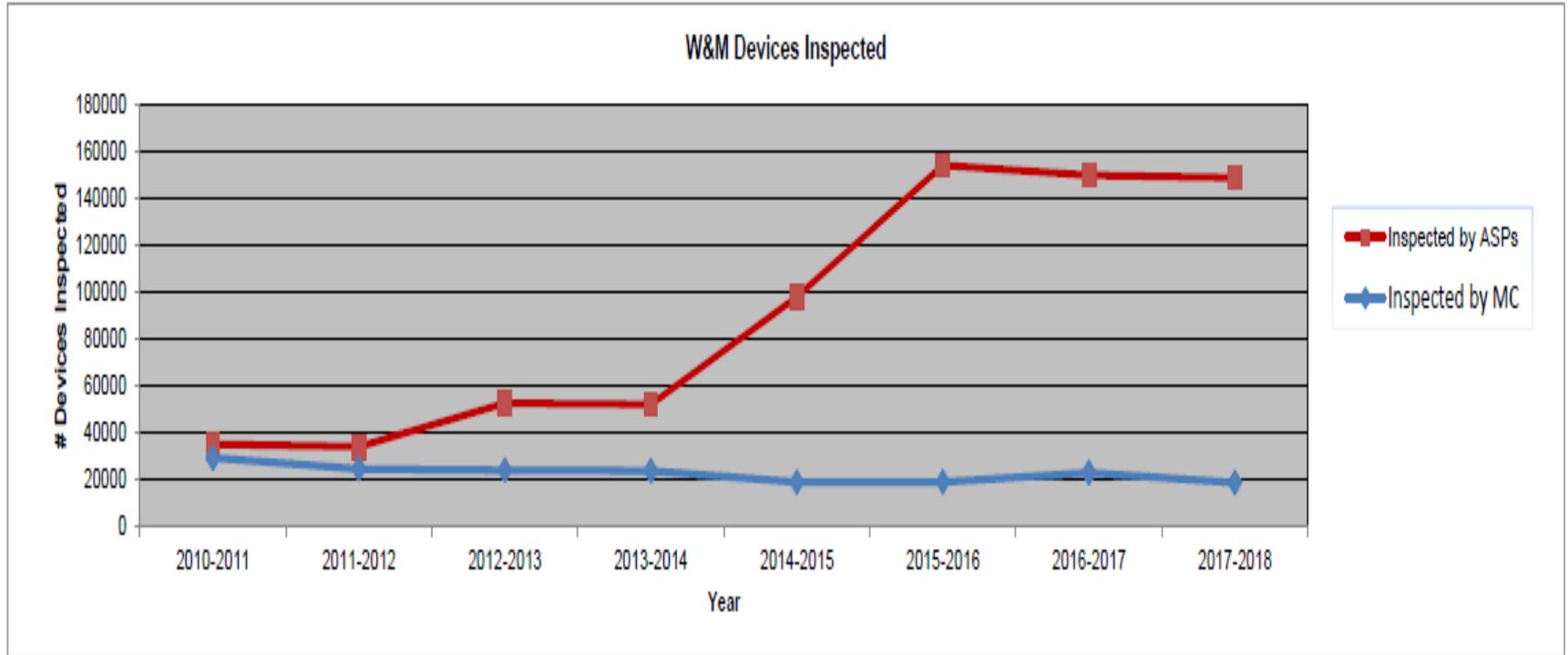
Alternative Service Delivery

227 Authorized Service Providers
670 Recognized W&M Technicians
401 under Accreditation
269 under Registration



■ Eastern ■ Ontario ■ Western

Alternative Service Delivery



Engineering and Laboratory Services

Engineering and Laboratory Services directorate is responsible for:

- Assessing and approving prototype measuring instruments for the measurement industry in Canada and abroad
- Calibrating and certifying field and laboratory standards used in the inspection of weighing, measuring and metering devices
- Providing engineering consultation, advice, design and manufacturing in support of operations, policies and program development
- Four (4) laboratories, one for each discipline (Mass, Electricity, Volume, Gas) with the support of engineers for each lab

Engineering and Laboratory Services

Type Approval of Devices

- Provide *Notice of Approvals* to applicant to confirm that a particular measuring device complies with all applicable legal requirements and can be marked for use in trade
 - Requires to review technology specs, testing results, development of testing plans, testing of technologies, final review and approval by engineers

Calibration of Standards

- Private sector organizations and Measurement Canada inspectors may have their measurement apparatus calibrated by the laboratories
 - Measurement Canada is accredited to ISO/IEC 17025 - *General requirements for the competence of testing and calibration laboratories* for all calibration services

Engineering and Laboratory Services

- In 2018-2019, the laboratories tested approximately 570 devices, all disciplines included (401 projects closed)
- For calibration projects, a certificate of calibration will be issued within 60 calendar days of receipt of the equipment to be calibrated
- For approvals, a notice of approvals is usually submitted 90 to 120 days after submission of prototype
 - Length might vary depending if additional specific testing need to be performed or if it is a new technology requiring development of new specifications

International Agreements

United States/Canada Mutual Recognition Arrangement (MRA)

- The USA and Canada have a mutual recognition for type approval testing. By doing so, this reduces the overlap in the device evaluation and approval process in order to be able to market the devices for trade in both countries.
- The following devices are eligible to be recognized under the program:
 - gasoline and diesel dispensers
 - high-speed dispensers
 - gasoline and diesel meters (used in fuel dispensers and truck refuellers only)
 - electronic computing and non-computing bench and floor scales with a capacity up to 1000 kg (2000 lb)
 - weighing and load receiving elements with a capacity of up to 1000 kg (2000 lb)
 - electronic indicators for scales (except those that are software based)
 - mechanical scales with a capacity of up to 10 000 kg (20 000 lb)
- In the past year 37 projects were approved through the US/Canada MRA

International Agreements

International Organization of Legal Metrology Certification System (OIML-CS)

- The OIML-CS enables your device's test results from another participating country to be recognized in Canada.
- This applies to devices with a valid OIML-CS certificate and that is listed in the Declaration of Mutual Confidence for OIML R76 (Non-Automatic Weighing Instruments)
- In the past year 3 projects were approved through the OIML-CS

Approvals

The following are examples of tests performed on the devices submitted for type approval:

Examples of evaluation of metrological features:

- Marking
- Sealing
- Indication and registration—representation
- Recorded representation (printed)
- Agreement of registrations
- Price computing feature
- Recorded representation of gross, tare and net weights
- Indicating zero and negative values
- Limits of indication
- Tare
- Tilting (off-level effect)
- Segment verification
- Multi-interval devices and multiple range devices

Approvals

Examples of evaluation of performance tests:

- Temperature effect on linearity, hysteresis, repeatability
- Load discrimination, eccentricity
- Tilting (off level position), suitability of the level indicator
- Warm up time
- Power interruption
- AC/DC voltage variations
- Immunity to radiated electromagnetic field
- Susceptibility to magnetism—ferromagnetic loads/plates
- Creep and creep—return-to-zero
- Temperature effect on the no-load indication
- Damp heat, steady state
- Electrostatic discharge test
- Short time power reduction test
- Burst test
- Endurance (permanence) test

Program Development

Program Development is responsible for:

- Developing legislation, frameworks, programs, policies, rules, standards and,
- requirements pertaining to trade measurement and for participating in their implementation
- Program development also negotiates and monitors the compliance of multi-lateral agreements with foreign jurisdictions

Program Development

Measurement Canada works closely with our international legal metrology colleagues:

- During the development of new domestic requirements and international model laws
- To harmonize technical requirements
- To adopt mutual agreements for type approval

We play an active role as a member of:

- International Organization of Legal Metrology (OIML)
- US National Conference of Weights and Measures (NCWM)
- Asia Pacific Legal Metrology Forum (APLMF)

Regional Operations

- Measurement Canada serves all of Canada. The three regions help to focus on regional priorities and risk areas.
- Regional operations are the frontline for Measurement Canada. They are tasked with performing:
 - Marketplace monitoring activities,
 - Surveillance of Authorized Service Providers,
 - Device inspections,
 - Calibration and certification of standards
 - Handling complaints and disputes.

Mandatory Examinations

Measuring device owners are required to have their scales, gas pumps and other weighing and measuring equipment inspected by a Measurement Canada authorized service provider (ASP) within a prescribed mandatory inspection frequency in eight sectors:

- Dairy
- Downstream petroleum
- Fishing
- Forestry
- Grain and field crops
- Mining
- Retail food
- Retail petroleum

Compliance and Enforcement

Guiding principles of the compliance policy

- Regulated parties are responsible for knowing the legislative requirements to which they are subject and for ensuring the accuracy of their device or of stated quantities of commodities.
- MC works with regulated parties to help them understand legislative requirements.
- Enforcement activities are carried out in an objective and consistent manner.
- MC continually improves compliance programs and policies.
- Compliance options are exercised in a manner that fosters conformity with regulatory requirements while considering the economic impact on the public.
- Enforcement activities are carried out by trained and designated personnel.
- Alleged violators have access to recourse mechanisms established in the legislation.

Compliance and Enforcement

Compliance activities include:

Compliance promotion

- Meetings with industry associations
- Public consultations
- Communication activities with stakeholders

Market place monitoring

- Device examinations and re-examinations
- Audits
- Measurement disputes
- Commodity examinations
- Complaint examinations

Compliance and Enforcement

Responses to non-compliance include:

- Educations
- Warning letters
- Corrective action requests
- Notices of non-compliance
- Seizure
- Administrative orders
- Administrative monetary penalties
- Prosecutions

Measurement Canada Video

- [Measurement Canada Video](#)

Questions and answers

