Legal Metrology Policy Review
Discussion Paper

National Measurement Institute
August 2016

www.measurement.gov.au
Foreword

The necessity for a system of agreed and consistent measurements has been recognised for at least the last 4,000 years. In 2150 BCE during the Akkadian Empire of ancient Mesopotamia, the competing measuring systems of individual cities, kingdoms and guilds were unified by a single official standard, the royal gur-cube, a theoretical cuboid of water approximately 6m × 6m × 0.5m from which all other units could be derived.

New trade structures and emerging technologies have given rise to new ways in which measurement is used for trade and relied upon for legal purposes. As our domestic and overseas markets continue to change, our national measurement system is confronted with new challenges and opportunities. This invites us to think creatively about the kind of national measurement system that will enable us to better realise the opportunities before us and meet the needs for our globally competitive industries.

A number of countries are revising their law on metrology, reorganising their legal metrology structures, reconsidering the scope of legal metrological control and reviewing technical requirements to adapt to emerging technologies. The Australian Government is keen to ensure that Australia’s legal metrology system is best positioned to serve the needs of Australia’s businesses, consumers and government.

The National Measurement Institute (NMI) delivers a nationally harmonised legal metrology framework but there is some scope for improvement. For example, there is a variety of views amongst our stakeholders as to what the key policy objectives are for legal metrology in Australia and therefore a need to articulate a clear strategic policy.

The paper provides an opportunity to consider and confirm the policy objectives for legal metrology in Australia now and into the future.

Dr Peter Fisk
Chief Executive and Chief Metrologist
National Measurement Institute

12 August 2016
Providing your feedback

NMI is seeking your input on appropriate policy objectives for the national legal metrology (measurement) system.

All submissions received by the due date will be considered by NMI in preparing a strategic policy statement to outline the direction and desired outcomes for legal metrology and inform a subsequent legislative review.

The public consultation process will run from 12 August until 12 September 2016.

Submissions on this consultation paper

Key questions are provided throughout this paper and are replicated in the online submission form, to facilitate and focus submissions. Attachments, providing supporting evidence, may also be included.

Your submission must reach NMI by 11.59 PM AEST on 12 September 2016.

NMI prefers submissions be made through the Department of Industry, Innovation & Science’s internet portal for stakeholder engagement, the Consultation Hub¹.

Responses to the consultation paper may, however, also be submitted by:

- emailing with the subject heading 'Legal Metrology Consultation' to LMReview@measurement.gov.au; or
- posting to Legal Metrology Branch, National Measurement Institute, PO Box 264, Lindfield NSW 2070 marked Attention: Legal Metrology Consultation

All information (including name and address) contained in formal submissions may be made available to the public on the Department’s consultation hub following the close of submissions.

Providing a confidential submission

If you wish to make a confidential submission, please complete the commercial-in-confidence submission form that is available on the Department’s consultation hub.

For this purpose, automatically generated confidentiality statements in emails would not be viewed as a request to consider your submission as confidential.

Decisions on requests made under the Freedom of Information Act 1982 for a submission marked ‘confidential’ to be made available, will be determined in accordance with that Act.

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1. Introduction
The Government has identified that the strategic direction and desired outcomes for legal metrology and the national measurement system need to be updated and articulated.

This discussion paper begins a formal process for considering future directions for legal metrology in Australia. This paper has been prepared to facilitate discussion leading to the preparation of an overarching strategic policy statement which outlines the appropriate objectives and outcomes for legal metrology in Australia.

The strategic policy statement will provide a clear context to establish priorities, processes and boundaries for the delivery of legal metrology activities in Australia and provide the principles to inform a later legislative review.

2. Key Questions
This paper seeks stakeholder input on a range of policy issues to inform the development of the strategic policy statement. Sections of the paper outline the context for a specific policy issue and provide some key questions to consider in relation to that issue. The questions for each section, which are also listed below, are provided as a guide for stakeholders but should not be considered as limiting the raising of any other issues in response to this paper.

<table>
<thead>
<tr>
<th>Issue</th>
<th>Key Questions</th>
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</table>
| Policy objectives for legal metrology in Australia         | • Are the following policy objectives appropriate for legal metrology in Australia and what is their relative importance?  
  o Supporting confidence in the measurement system         |
  • Reduced disputation and transaction costs in trade transactions |
  • Sound evidential basis for legal and regulatory measurements |
  o Facilitating a level playing field for business          |
  o Consumer (or the broader term customer) protection       |
  o Supporting industry development and technology innovation |
  • Are there any other policy objectives that for legal metrology that would assist in delivering successful outcomes for Australian businesses and consumers? |
<p>| International cooperation and harmonisation                | • What should be the criteria for Australia’s participation in the development of international documentary standards relevant to legal metrology? |
|                                                           | • What should be NMI’s approach to determining Australia’s pattern approval requirements where documentary standards from organisations such as the ISO and the IEC more fully account for recent developments in technology and operation of measuring instruments than equivalent OIML standards? |
|                                                           | • To what extent should NMI consider flexibility to allow for particular circumstances in Australia when adopting international standards for pattern approval? |</p>
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| Principles-based approach to regulation | • What are the key principles that should drive Australia’s regulatory approach to legal metrology?  
• What concerns, if any, could there be for a business when managing compliance in a principles-based regulatory environment?  
• What level of guidance material, if any, should be available to ensure stakeholders have sufficient understanding of the policy objectives and outcomes being sought?  
• What should be the legislative status of such guidance material? |
| Risk-based approach to compliance monitoring | • What are the appropriate factors to inform risk management related to setting priorities for regulation of legal metrology, including compliance and enforcement activity? |
| Regulatory approaches for legal metrology - Fit for purpose | • How important is it that NMI considers the broader context of ‘fit-for-purpose’ when developing requirements/policies in relation to measurement?  
• How should NMI focus its regulatory activity in relation to conformity to type assessment? |
| Regulatory approaches for legal metrology - Compliance and enforcement | • How should NMI focus its compliance activities to ensure businesses are meeting their obligations under trade measurement law?  
• Which is more harmful: inaccuracy that benefits the customer/consumer or inaccuracy that benefits the vendor/trader?  
• What relative weight should NMI give to: identifying that certain thresholds have been breached; and individual risk assessments, before financial penalties are imposed?  
• What are the appropriate circumstances for NMI to consider referral for prosecution as a regulatory response? |
3. What is legal metrology?

Metrology is the science of measurement. Legal metrology has its historical origins in the need to ensure fair trade but is now considered to encompass all measurements carried out for any legal purpose, including the supporting technical and regulatory infrastructure.

Metrology standards and the traceability of measurement to those standards provide the basis for successful trade and commerce. They help drive the continuous development of science, technology and industrial production. They are the foundation for all testing and measurements, including those associated with disease diagnosis and health care, food safety, forensic science, environmental monitoring, work health and safety, optimisation of production and consumer confidence and protection.²

The economic impact of activities covered by legal metrology is significant. Studies in Australia, the USA and Canada have estimated that the total value of trade transactions involving measurement (including packaged goods and utility metering) accounts for at least 50% of Gross National Income (GNI). Of this amount, around a quarter is accounted for by retail transactions with the remaining three quarters being business to business transactions.³ Based on these estimates, the total value of trade transactions involving measurement in Australia in 2014-15 was more than $750 billion.

While there are some differences internationally in emphasis and approach to administration, most countries’ legal metrology systems are made up of three elements:

- the legislative framework to establish a system of measurement and regulate its operation;
- mechanism(s) to approve and/or certify measuring instruments for legal purposes (pattern approval and verification); and
- inspection/audit of measuring instruments, measured goods and services, and measurement practices, to ensure compliance with legislative requirements.

Legal metrology systems are also underpinned by the necessary scientific and technical infrastructure to support correct measurements (traceability).

Pattern (or type) approval confirms that a measuring instrument’s design meets relevant documentary standards⁴ and performs as intended over a range of environmental and usage conditions.

Verification is the testing of measuring instruments to ensure that they operate in accordance with pattern approval requirements and are calibrated.

Traceability is being able to demonstrate that a measurement result is related to a primary measurement standard⁵ through a documented, unbroken chain of calibrations.

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⁴ A documentary standard provides requirements, specifications, guidelines or characteristics that can be used consistently to ensure that materials, products, processes and services are fit for their purpose. (www.iso.org).
⁵ Australia’s primary measurement standards directly relate to the base units of the International System of Units (SI): the metre, the kilogram, the second, the ampere, the kelvin, the mole, and the candela.
4. Legal metrology in Australia


The Act establishes a national system of units and standards of measurement and provides for their uniform use throughout Australia to ensure traceability of measurement. The Act also regulates transactions involving measurement, including sales of measured quantities and packaged goods, and sets out specific requirements for measuring instruments used for trade.

A measuring instrument is being used for trade if it is used in determining the consideration in respect of a transaction or in determining the amount of a tax. In Australia, all measuring instruments used for trade must be pattern approved and verified.

Examination of trade measuring instruments and issuing certificates for pattern approval is undertaken by NMI, except in the case of electricity and water meters where examinations are undertaken by NMI appointed Approving Authorities.

Verification of trade measuring instruments is usually carried out by NMI appointed organisations known as Servicing Licensees or Utility Meter Verifiers. In Australia, verification is usually undertaken in accordance with National Instrument Test Procedures (NITPs) determined by NMI and aligned with international practice.

To ensure traceability of reference standards used for verification of trade measuring instruments, NMI appoints Verifying Authorities in areas such as length, mass, area, volume, density, and temperature.

NMI also appoints Certifying Authorities to calibrate certain grain quality measuring instruments and to produce reference materials used in their calibration.

NMI employs Trade Measurement Inspectors who can visit a place of business to: check packaged goods for correct measurement; inspect and/or test measuring equipment; and review how measurements are made, to ensure compliance with the law.

The figure below illustrates the regulatory framework for measuring instruments used for trade.
There is also Commonwealth and State/Territory legislation and regulation covering measurements and measuring instruments used for other legal purposes which, as noted above, include law enforcement, environmental monitoring, food safety, and work health and safety. The national measurement system provides the technical infrastructure to support these measurements.

An example of the national measurement system providing traceability for other legal measurements is the time sources used by point to point speed measurement systems in Queensland and the ACT to calculate average vehicle speeds. These time sources are continuously monitored and audited by NMI with reference to Coordinated Universal Time (UTC) Australia - the primary standard maintained by NMI which contributes to the international UTC.

Where requested, NMI also provides a pattern approval and verification framework for other legal measuring instruments. For example, to assist Australian law enforcement agencies with providing traceability for measurements made by breath-alcohol analysers, NMI appoints Approving Authorities to ensure their design meets agreed standards and appoints Certifying Authorities to calibrate them and to produce reference materials used in their calibration.
5. Policy objectives for legal metrology

Clearly articulated policy objectives which set out the Government’s desired regulatory outcomes will provide a mandate for establishing priorities, processes and boundaries for delivering legal metrology activities.

In determining the objectives for legal metrology it is important to have an appreciation of the benefits legal metrology provides for industry, the economy and the community.

The policy objectives outlined below are inter-related and not necessarily mutually exclusive.

The objectives have been articulated to assist consideration of their relative importance in providing direction for Australia’s administration of legal metrology functions.

5.1 Confidence in trade and legal measurement

It has been argued that the over-arching benefit of legal metrology is its significant contribution to social capital through supporting the confidence in measurements required to facilitate the smooth functioning of the economy and the legal system.6

Confidence in measurements supports fair and open competition by enabling trust between market participants.

Australian exporters also gain a marketing advantage from the reputation benefits derived from confidence in their measurements.

A robust legal metrology system which delivers traceable measurements within a reliable framework provides a firm basis for that confidence.

A number of subsidiary objectives for legal metrology flow from the over-arching objective of supporting confidence in the measurement system, as outlined below.

5.1.1 Reduced disputation and transaction costs

Where trade transactions involving measurements are unregulated there is considerable scope for uncertainty and disputation. For example, disputes can result from information asymmetry between the party providing the measurements (typically the supplier or seller) and the party accepting these measurements (usually the purchaser in retail transactions, the producer in farm produce transactions and the smaller business in commercial transactions).

Extra transaction costs can arise where the parties to these transactions have concerns about the accuracy of the measurement, such as short measure, and the consistency of the measurement, such as paying more than other customers. Such transaction costs could include: the purchaser needing to re-weigh goods to confirm that the trader’s representations are accurate; and taking legal action to recover any potential losses. Extra transaction costs can also arise from the lost opportunities for those relying on measurements being accurate.

A legal metrology system that supports confidence in measurements minimises the likelihood of disputes and extra transaction costs, and thus reduces market inefficiencies.

5.1.2 Sound evidential basis for legal and regulatory measurements

In addition to trade transactions, accurate measurements are also required for legal purposes such as public health, safety and order, protecting the environment and levying taxes and duties. Traceability to national measurement standards provides a sound evidential basis for legal and regulatory measurements, which are accepted by courts when disputes arise. This enhances community confidence in the measurements and the application of law.

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5.2 Level playing field for business
Another objective for legal metrology is to provide consistency and certainty in measurement so that all market participants, irrespective of their size or financial strength, follow the same rules and get equal opportunity to compete. Legal metrology can facilitate a level playing field for business by, amongst other things, ensuring that measuring instruments are fit for purpose, meet international standards, and are operated correctly.

5.3 Consumer protection
Because sellers of products are usually responsible for the measurement process, consumers in retail transactions are likely to lack significant information about that measurement. Consumers therefore are reliant on representations by the trader and have limited market power in the transaction.

As a result, consumer protection can also be considered as an important objective for legal metrology. Indeed, as noted in the international comparisons earlier in this paper, consumer protection is often cited as a primary consideration for legal metrology.

Since retail transactions account for a quarter of all trade transactions involving measurement, however, it is open to question whether legal metrology is only or primarily for consumer protection.

In this context, it may be more appropriate to consider facilitating fair trading in measurement transactions or minimising ‘customer’ detriment as more appropriate higher-order objectives than ‘consumer’ protection.

5.4 Supporting industry/technology development and innovation
NMI supports the Department’s vision of enabling growth and productivity of globally competitive industries through helping create new markets for Australian industries by, as noted in Chapter 8:

- participating in the development of internationally accepted standards for new technologies and products; and
- facilitating regulatory approvals for Australian measuring instruments in overseas markets.

NMI can also assist Australian companies developing measuring instruments with advice and assistance on instrument capabilities and quality assurance processes required to meet national and international documentary standards.

Questions:

5.1 Are the following policy objectives appropriate for legal metrology in Australia and what is their relative importance?
- Supporting confidence in the measurement system
  - Reduced disputation and transaction costs in trade transactions
  - Sound evidential basis for legal and regulatory measurements
- Facilitating a level playing field for business
- Consumer (or the broader term customer) protection
- Supporting industry development and technology innovation

5.2 Are there any other policy objectives that for legal metrology that would assist in delivering successful outcomes for Australian businesses and consumers?
6. International objectives for legal metrology

Other countries’ stated objectives for legal metrology are broadly similar with each other and usually refer to efficient operation of markets, business competitiveness, fair trading and protection of consumers. For example:

- In the UK, fair and accurate measurement is important to a competitive economy as it: provides consumers and businesses the confidence to buy and sell goods; enables purchasers to make informed purchasing decisions; reduces barriers to trade; and minimises regulatory burden, thereby enabling markets to operate efficiently. (www.gov.uk)

- France keeps instruments accurate and transactions fair for business competitiveness and consumer protection. (www.entreprises.gouv.fr)

- In the Netherlands, enforcing the rules for reliable measurements contributes to fair trading, thus ensuring better consumer protection while also protecting traders against fraud and unfair competition. (www.government.nl)

- Canada ensures equity and accuracy of measurement in order to contribute to a fair and competitive marketplace. (www.ic.gc.ca)

- Singapore regulates weights and measures to protect consumers and traders. (www.spring.gov.sg)

- The Republic of Korea ensures accurate measuring instruments and regulatory compliance to establish a foundation for fair trade and protect the interests of consumers. (www.kats.go.kr)

- In New Zealand, representations as to weight and measures must be accurate so that: the interests of consumers are protected; businesses compete effectively; and consumers and businesses participate confidently. (www.legislation.govt.nz)

Some countries also include political and economic development goals, such as:

- The USA promotes uniform weights and measures to achieve equity between buyers and sellers in the marketplace and thereby enhance consumer confidence, enable U.S. businesses to compete fairly, and strengthen the U.S. economy. (www.nist.gov)

- In Germany, the regulation of measurements supports fair trade, strengthens the trust of citizens in official measurements and helps to prevent economic damage during cross-border trade. Germany participates in development and harmonisation of international measurement regulation to facilitate easier market access for German manufacturers of measuring instruments. (www.ptb.de)

- The Metrology Law of the People’s Republic of China has been formulated to contribute to the development of production, trade, and science and technology, to meet the needs of socialist modernization and to safeguard the interests of the state and the people. (www.npc.gov.cn)
7. The wider Government policy context

Consideration of strategic policy objectives for legal metrology will take account of the Australian Government’s broader policy settings and objectives, such as encouraging innovation, reducing barriers to trade and minimising regulatory burden.

For example, the Government’s Competitiveness Agenda aims to improve access to international markets for Australian businesses and open up the economy to greater domestic and international competition. This includes assessing opportunities for the greater acceptance of trusted international documentary standards and risk assessments, without any additional requirements for Australian approval unless it can be demonstrated there are good reasons for those additional requirements.

The Department of Industry, Innovation and Science’s 2016-20 Strategic Plan recognises that reducing the burden on industry of inefficient regulation can lower costs to businesses and facilitate innovation. It also notes the importance of ensuring that the regulatory environment strikes the right balance between efficient markets and community expectations.

The Secretary of the Department of Industry, Innovation and Science has also recently issued a Statement of Expectations for NMI which, amongst other things, confirms that NMI’s legal metrology activities must be consistent with the Government’s preferred approach for best-practice regulation, including:

a) focusing on regulatory reform to reduce red tape and compliance costs for businesses and the community;
b) moving towards more principles-based regulation that identifies the desired outcomes, rather than prescribing how to achieve them; and
c) pursuing a risk-based approach to compliance obligations, engagement and enforcement, allowing for proportionate approaches suited to the size, nature, complexity and risk of regulated entities.

8. International cooperation and harmonisation

Australia is a member of the International Organisation of Legal Metrology (OIML), an intergovernmental treaty organisation whose primary aim is to facilitate trade, establish mutual confidence and support consumer protection through enabling countries to put in place mutually compatible and internationally recognised legal metrology infrastructure.

Amongst other things, OIML develops recommendations that establish the performance requirements for measuring instruments and specify methods and equipment for testing whether instruments meet those requirements. OIML Member States agree to implement these recommendations to the greatest possible extent.

In Australia, OIML recommendations are currently adopted, after consultation with domestic stakeholders, as NMI recommendations (pattern approval standards) and National Instrument Test Procedures (NITPs) covering measuring instruments in use for trade.\(^7\) In accordance with the Act, where specifications of OIML recommendations are inconsistent with the national interest or impracticable because of particular circumstances in Australia, NMI can modify those specifications before adopting them in Australia.

NMI also represents Australia’s interests on OIML committees developing documentary standards in areas of priority for Australian stakeholders. NMI can seek input from Australian manufacturers and other stakeholders on the development and revision of those international documentary standards in order to, amongst other things, support market access for innovative designs and applications being developed in Australia.

\(^7\) See also s11.1 - Fit for purpose
International market access for Australian companies is also supported through the mutual recognition and acceptance arrangements arising from Australia’s membership of OIML. Where a measuring instrument’s design is captured under existing OIML standards, an Australian manufacturer can reuse the testing and evaluation reports required by NMI when seeking approval in overseas markets. Upon approval by NMI, a manufacturer can also benefit from Australia’s international mutual acceptance arrangements to gain access to certain overseas markets with minimal regulatory obstacles.

NMI also participates, along with Standards Australia and the National Association of Testing Authorities (NATA), in the development of other international documentary standards, through groups such as the International Organization for Standardization (ISO) and the International Electrotechnical Commission (IEC). In some industry sectors and markets, ISO and IEC standards can be more relevant than OIML recommendations in accounting for recent developments in technology and operation of measuring instruments.

Questions:

8.1 What should be the criteria for Australia’s participation in the development of international documentary standards relevant to legal metrology?

8.2 What should be NMI’s approach to determining Australia’s pattern approval requirements where documentary standards from organisations such as the ISO and the IEC more fully account for recent developments in technology and operation of measuring instruments than equivalent OIML standards?

8.3 To what extent should NMI consider flexibility to allow for particular circumstances in Australia when adopting international standards for pattern approval?

9. Principles-based approach to regulation

Principles-based regulation focuses more on principles and objectives and less on prescriptive rules. By focusing on the purpose behind the rules, a principles-based approach allows regulated entities to make their own decisions about how to comply with the desired outcomes.

While prescriptive rules-based regulation can provide certainty (especially for small businesses and customers), it can lead to gaps and rigidity. For example, where existing rules do not take account of emerging technologies and changes in the business environment, managing compliance may require regulators to apply discretion in individual cases. This may lead to substantial inconsistencies in regulatory approaches.

Ensuring compliance under a principles-based approach can be assisted through developing guidance material and working with industry on codes of practice which provide examples of compliant practice without being prescriptive. Guidance materials can also be sourced from existing material produced by other regulatory bodies, international standards organisations and industry bodies.

Through consistent interpretation and consistent enforcement of those interpretations, a regulator can also build a body of precedent that clarifies the principles and provides regulated entities with further guidance. While education and encouragement for voluntary compliance are the primary tools for ensuring compliance with principles, those tools are most effective when supported by the possibility of more severe penalties.8

These matters will be addressed in more detail in the legislative review that will follow completion of this policy review.

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9.1  A possible principles-based approach for regulating measuring instruments

Under current legislation, Division 2.1 of the National Trade Measurement Regulations 2009 includes highly detailed rules in relation to the operation of measuring instruments used for trade.

Below is an example of how a principles-based approach could potentially be applied to one of the many requirements for operation of those measuring instruments.

<table>
<thead>
<tr>
<th>Extract from Division 2.1 of the current National Trade Measurement Regulations 2009</th>
<th>Potential revision under a principles-based legislative framework</th>
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</thead>
<tbody>
<tr>
<td>2.18  Person in possession of certain measuring instrument must ensure measuring instrument is artificially illuminated</td>
<td></td>
</tr>
<tr>
<td>1) A person who is in possession of a measuring instrument that is used for trade to measure a liquid must ensure that the measuring instrument is, at least to the extent necessary for the purpose of permitting proper observation of its operation, artificially illuminated:</td>
<td>The operation and measurements of a measuring instrument in use for trade must be clearly visible to a customer while in use.</td>
</tr>
<tr>
<td>a) between sunset and sunrise; and</td>
<td></td>
</tr>
<tr>
<td>b) if artificial illumination is necessary for that purpose at any other time — at that time.</td>
<td></td>
</tr>
<tr>
<td>2.19  Person who makes certain measuring instrument available must ensure measuring instrument is artificially illuminated</td>
<td></td>
</tr>
<tr>
<td>1) A person who makes a measuring instrument available for use for trade to measure a liquid must ensure that the measuring instrument is, at least to the extent necessary for the purpose of permitting proper observation of its operation, artificially illuminated:</td>
<td></td>
</tr>
<tr>
<td>a. between sunset and sunrise; and</td>
<td></td>
</tr>
<tr>
<td>b. if artificial illumination is necessary for that purpose at any other time — at that time.</td>
<td></td>
</tr>
</tbody>
</table>

Questions:

9.1 What are the key principles that should drive Australia’s regulatory approach to legal metrology?

9.2 What concerns, if any, could there be for a business when managing compliance in a principles-based regulatory environment?

9.3 What level of guidance material, if any, should be available to ensure stakeholders have sufficient understanding of the policy objectives and outcomes being sought?

9.4 What should be the legislative status of such guidance material?
10. Risk-based approach to regulating

The Public Governance Performance and Accountability Act 2013 (PGPA Act) requires all Commonwealth entities to establish and maintain appropriate systems of risk oversight and management. Risk management is integral to achieving the best regulatory outcomes with available resources by helping to ensure that activities are managed efficiently and in a manner that is acceptable to stakeholders.

NMI’s trade measurement compliance and enforcement policy\(^9\) articulates a risk management framework based on the consequence and likelihood of non-compliance. Consequence is defined as the harm resulting from economic impacts and reductions in business and consumer confidence in the regulatory system. The aim is to achieve a high level of consumer and business protection and avoid harm without unnecessary compliance costs or burdens for business. The compliance and enforcement policy lists the following factors as influencing the targeting of compliance and enforcement activities and the nature of responses to identified non-compliance:

- the extent of financial detriment to consumers or to industry;
- the extent of repeat contravention of the national trade measurement legislation;
- referrals from any consumer protection agencies or regulators;
- particular contraventions of high public interest; and
- special circumstances that give enforcement actions added significance such as deterrence of a non-compliant practice within an industry and protection of particularly vulnerable or disadvantaged groups.

Other factors also include the impact on competition and consumers being able to make informed decisions on value.

Determining the extent of harm may account for either or both of:

- the impact of any single instance of non-compliance; or
- the cumulative effect of many individual instances of non-compliance.

The factors listed above also inform NMI’s risk management related to setting of priorities for establishing and amending the legal metrology infrastructure, eg pattern approval standards, NITPs and appointment of Authorities, for particular industry groups and instrument types.

Questions:

10.1 What are the appropriate factors to inform risk management related to setting priorities for regulation of legal metrology, including compliance and enforcement activity?

11. Regulatory approaches for legal metrology

Legal metrology contributes to the delivery of the objectives outlined above through:

- regulatory mechanisms to approve and verify/certify measuring instruments; and
- the inspection/audit of measuring instruments, measured goods and services, and measurement practices.

11.1 Fit for purpose

Ensuring measurements and measuring instruments are ‘fit-for-purpose’ is a legal metrology function required to achieve outcomes such as a level playing field for business and customer protection.

Fitness-for-purpose is a determination about the suitability of a measuring instrument for the context in which a measurement is made. The accuracy of the instrument will be one consideration in a fitness-for-purpose assessment, but not the only one. Other considerations are reliability under normal operating conditions and being tamper-proof. In the legal metrology context, the process of formally certifying fitness for purpose is known as pattern approval.

Through the pattern approval and inspection functions, legal metrology can help to ensure that measuring instruments have a level of accuracy that is appropriate for their intended use and meets industry and community objectives. For example, the degree of accuracy, durability and mode of operation for weighbridges used to measure the load carried by heavy freight vehicles will be different from that required for scales used to weigh potatoes at the local fruit and vegetable store and different again for the scales used by a dealer in precious metals and gemstones.

A further regulatory activity to help ensure instruments are fit for purpose is “conformity to type” assessment. This involves testing to determine whether manufactured devices comply with the requirements defined in the pattern approval certificate.

Conformity to type assessment is a component of regulatory regimes in Europe and the United States of America, through the Measuring Instruments Directive (MID) and the National Type Evaluation Program (NTEP) Conformity Assessment Programme respectively. It has not to date been officially implemented in Australia by the Commonwealth Government.

NMI has, however, recently assisted in developing the Water Meter Pattern Compliance and Data Sharing Code of Practice, at the request of the Water Services Association of Australia, to support the industry with their own conformity testing of water meters.

Questions:

11.1 How important is it that NMI considers the broader context of ‘fit-for-purpose’ when developing requirements/policies in relation to measurement?

11.2 How should NMI focus its regulatory activity in relation to conformity to type assessment?

11.2 Measurement accuracy

Measurements need to be suitably accurate to ensure a level playing field for all parties, to enable individuals and businesses to make informed decisions, and to maintain the confidence required to minimise disputes and reduce transaction costs. In most cases, neither buyers nor sellers have the knowledge, opportunity or equipment to check the accuracy of instruments or measurements.

Requiring that trade measurement instruments are verified before use ensures that they are accurate when installed.

Inspection and audit of businesses provides the means to monitor and enforce that measurements and statements about those measurements are accurate ‘in the field’, through checking measuring instruments, measurement practices and the quantities of pre-packaged goods.
For measuring instruments, a suitable level of accuracy can be regulated through determining ‘maximum permissible errors’ (MPE) for particular instrument types. It is also important that measuring instruments are used and maintained in a manner to facilitate accurate measurement. For example, if a scale is used when selling goods, it should be level and indicating zero before use and be kept clean and in good working order.

11.3 Reducing opportunities for fraud

Through business audit and inspection activity, legal metrology can help to reduce opportunities for businesses to use short measure to obtain commercial advantage over customers and competitors. Approval and verification of instruments used for trade also helps make sure that the design of measuring instruments does not facilitate fraud.

11.4 Ensuring Compliance

Following the risk-based approach to compliance monitoring and enforcement outlined above, there is a range of escalating potential responses where non-compliance with measurement regulation is identified. These responses are proportional to the consequence and likelihood of harm resulting from any non-compliance identified.

The initial, and by far the most common, market surveillance activity undertaken by NMI’s trade measurement inspectors is a mixture of education and compliance monitoring, informing businesses about their obligations under the law.

Where a detected contravention has a low level of consequence and there is minimal likelihood of continued non-compliance an inspector will issue a non-compliance notice and provide advice. A follow-up visit will check that any issues identified have been corrected by the trader.

Inspectors conducted over 7,500 initial audits of business premises during 2015-16 and found at least one example of non-compliance with trade measurement law at 34% of those premises. For the most part, however, these breaches were relatively minor and, following issue of a non-compliance notice and advice from the inspector, were corrected by the trader.

Of more than 2,400 follow-up visits made by inspectors in 2015-16, only 15% identified any continued non-compliance. This demonstrates that audits of businesses undertaken by NMI are an important activity to promote compliance with the law and thereby minimise the need for further enforcement action.

Depending on the severity of any particular contravention, however, more punitive enforcement actions can also be considered.

Where follow-up inspections identify continued non-compliance and/or the level of initial non-compliance breaches certain thresholds, possible enforcement options include warning letters and infringement notices (which currently include a fine of $900 per offence).

Current thresholds for considering issuing an infringement notice include: 2% or greater deficiency in content of packaged goods; and inaccuracy of three times or greater MPE for measuring instruments. These thresholds are currently used as a guide and a risk assessment is undertaken in each case to determine whether the consequences of non-compliance are sufficiently serious to issue an infringement notice with associated fine.
Where non-compliance and infringement notices have not proved successful in deterring traders from breaching trade measurement law, or where auditing activities detect serious issues and it is deemed inappropriate to use non-compliance and infringement notices, further enforcement options include:

- NMI agreeing an enforceable undertaking with a trader; and/or
- referring matters to the Commonwealth Director of Public Prosecutions (CDPP) for consideration of injunction or prosecution.

Consistent with the principle of proportionality and assessment of risk, these more punitive enforcement actions occur on relatively few occasions. Inspectors undertook just over 10,000 initial and follow-up trader audits in 2015-16 and in that period there were only: 186 warning letters sent; 88 infringement notices issued; and seven matters referred to the CDPP.

The chart below illustrates NMI’s range of responses to non-compliance depending on the severity of any contravention of the Act.

<table>
<thead>
<tr>
<th>RISK OF NON-COMPLIANCE</th>
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<th>HIGH</th>
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Questions:

11.3 How should NMI focus its compliance activities to ensure businesses are meeting their obligations under trade measurement law?

11.4 Which is more harmful: inaccuracy that benefits the customer/consumer or inaccuracy that benefits the vendor/trader?

11.5 What relative weight should NMI give to: identifying that certain thresholds have been breached; and individual risk assessments, before financial penalties are imposed?

11.6 What are the appropriate circumstances for NMI to consider referral for prosecution as a regulatory response?