



Australian Government
Department of Industry,
Innovation and Science

DISCUSSION PAPER:

SCOPE OF **AUSTRALIA'S** **MEASUREMENT LAWS**

Measurement Law Review
May 2018

Have your say

The Australian Government is seeking responses to the issues raised in this paper. The questions outlined in this paper are designed to prompt responses. However, respondents do not need to answer all of them.

Full text and details of Australia's measurement laws can be found on the Federal Register of Legislation <https://www.legislation.gov.au>.

All submissions received will be considered by the Government in the process of finalising the proposal. We encourage those who have a view on the issues outlined in the discussion paper to make a written submission by **22 June 2018**.

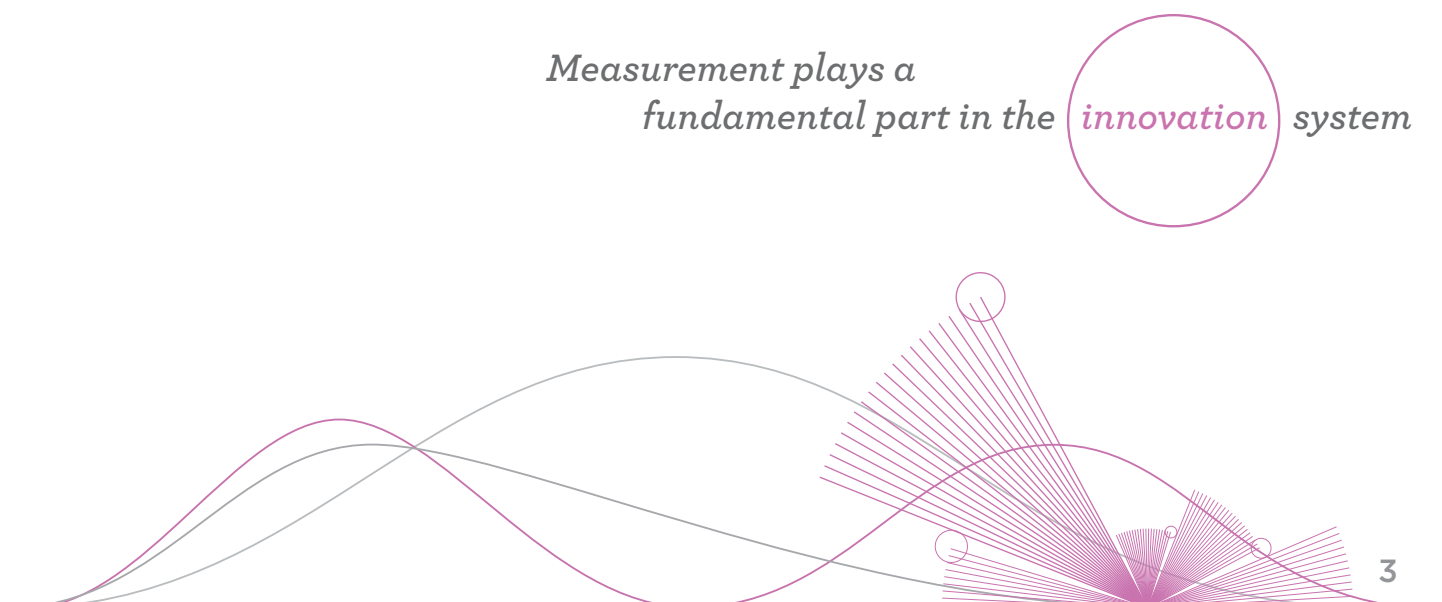
Submissions can be made on the Department of Industry, Innovation and Science Consultation Hub webpage: <https://consult.industry.gov.au/measurement-law-review/scope>. If you have difficulties or questions, please call **1300 686 664** or email measurementlawreview@industry.gov.au.

Submissions received may be made public on the consultation website, unless otherwise specified. Submissions should indicate whether any part of the content should not be disclosed to the public.

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*Measurement plays a
fundamental part in the **innovation** system*



SCOPE OF **AUSTRALIA'S
MEASUREMENT LAWS**

1. Introduction

The Australian Government is **conducting a review** of Australia's measurement laws. Changes in technology, industry and consumer needs call for a major rethink of Australia's legislative framework for measurement to ensure it continues to support the Australian economy. Although measurement has been evolving, Australia's current measurement laws have not been reviewed to examine the appropriateness of the legislative and policy framework.

The Measurement Law Review marks the first comprehensive review of Australia's measurement laws. The review will release six key topic papers that collectively focus on aspects of the framework created by Australia's measurement laws. These include this paper and companion papers on traceability, measuring instruments, transactions based on measurement, third party arrangements, and compliance arrangements. This paper will examine the scope of Australia's measurement laws, which currently provide requirements related to measurement used in the course of trade, commerce and for other compliance reasons.

The **Terms of Reference** for the Measurement Law Review are available on the Department of Industry, Innovation and Science website at www.industry.gov.au/measurement-law-review.

2. Aims of the review

Australia's measurement system can be relied on domestically and internationally. This confidence has real-world economic value. One of the main objectives for the review is to consider whether a more modern, flexible legislative framework for measurement could deliver greater confidence and economic benefit to Australians, now and into the future.

The Australian Government is committed to providing a strong and effective national measurement system which facilitates trade, supports ongoing economic prosperity, builds business and consumer confidence, and meets safety and security objectives. Australia's measurement system includes capabilities that support the objectives of a number of government, private sector and community organisations, measurement services that strengthen our economy and a legislative framework which aligns Australia's approach with that of our trading partners.

Measurement also plays a fundamental part in the innovation system. Australian businesses need to measure quantity, quality and performance to develop new products and processes. The aim of the review is to explore the role of measurement in the context of a modern economy and consider the broad use of measurements to ensure an effective legislative framework.

The Measurement Law Review aligns with the Australian Government's vision for measurement in Australia as outlined in the [National Measurement Policy Statement](#). The review will ensure Australia's measurement framework is fit-for-purpose with respect to industry and trade, science and innovation, and the public interest. Consideration of the current value of the existing measurement system will enable a comparison against the benefits that a more flexible framework could bring to the economy. Understanding the current benefits will enable the Australian Government to better position measurement to provide additional benefits to the economy.

Respondents' feedback to this paper will be used to inform the development of policy options of the scope of Australia's measurement laws.

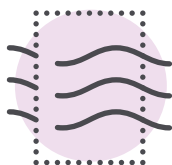
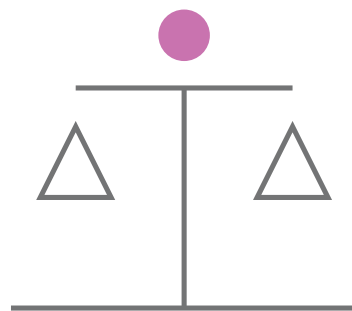
scope

3. Measurement in everyday life

Australia's measurement system is linked to formal and internationally-agreed standards which ensure the accuracy and reliability of measurements that are used in everyday life.

Measurement is everywhere. The routines of our daily lives depend on it, from the watts of electricity supplied to our homes and the litres of the petrol we purchase through to the milligrams of the medicines we take and the timing of the transport that we use. Rapid developments in science, technology, industrial production and innovation have, in turn, driven and been driven by comparably rapid developments in measurement techniques. Every aspect of life, every sector of industry depends on ever-increasing levels of measurement accuracy.

Our society depends on reliable measurements. We need to know the threshold for fatigue in steel before we put it under strain in an aircraft or building; that our blood pressure reading accurately reflects our arterial health; that contaminants in our water and noxious fumes in our air are not breaching safe limits; and that the temperature of our refrigerator is low enough to preserve our food – to name a few examples.



air quality



wind



water



fuel



*new
technologies*



*ultrasound
diagnosis*



superfoods



*postage
rates*



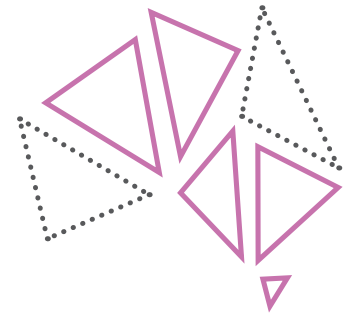
x-rays



allergies



4. Current regulatory framework



The Constitution gives the Australian Government legislative power with respect to weights and measures. The *National Measurement Act 1960* (the Act) is the primary legislative instrument that underpins Australia's measurement system.

Australia's measurement laws set out the scope of the national measurement system and implement Australia's international commitments under measurement treaties. Australia's measurement laws provide for:

- Units of measurement to be used in Australia which link to the metric system of units used internationally (International System of Units);
- The uniform use and dissemination of units of measurement to support confidence in measurement;
- A mandatory framework for measurements used for trade purposes, including the accuracy of instruments used in transactions and the measurement statements on pre-packaged goods; and
- A framework for measurements used for non-trade purposes such as those used by Commonwealth, state and territory authorities for safety and environmental regulatory purposes.

The primary objective of the Australian Government's role in measurement is to provide a strong and effective national measurement system that is trusted and accepted both domestically and internationally.

QUESTION

- 4.1 What should be the role of Australia's measurement laws in a modern economy?**

5. Measurement laws in other countries

Other countries' measurement laws have broadly similar objectives of supporting the efficient operation of markets, business competitiveness, fair trading, and consumer protection.

As such, measurement laws typically apply not only to trading transactions, but can also apply to the well-being of individuals and society as a whole, for instance for law enforcement and health and safety.

Some examples of other countries' scope of measurement laws are provided in Annex A.

QUESTIONS

- 5.1 What should be within the scope of Australia's measurement laws?**
- 5.2 Are there ways in which the current scope of Australia's measurement laws could be expanded or limited?**



6. Principles-based legislation

Australia's measurement law is primarily a prescriptive framework, setting out specific rules rather than articulating general principles. This potentially restricts the community from developing or implementing new approaches capable of meeting the legislation's intended outcome.

Principles-based legislation refers to a legislative drafting technique, where instead of legislation prescribing *how* an outcome must be achieved, it states *what* the outcome (or principle) is to be achieved, and leaves the mode of compliance to be determined by the party involved.¹ The Terms of Reference for the Measurement Law Review explicitly require consideration of the appropriateness of transitioning Australia's measurement laws to a more principles-based framework.

For example: Imagine the policy problem is employees arriving late for an 8:30am shift at work. A prescriptive rule might specify that employees must: (1) set their alarm for 6:00am, (2) leave home by 7:00am, (3) travel by car along specified roads, (4) park in a specific carpark, and, (5) be at their desk at 8:30am. In contrast a principles-based rule might say only "you must get to your desk on time", leaving employees to work out how to make it happen, and some flexibility for the employer to define "on time" to suit changing circumstances.

The primary benefit of principles-based legislation is flexibility in adapting to changing circumstances. As long as the outcome sought has not changed, the legislation can accommodate the maximum number of alternative scenarios which might not have been foreseen by the policymakers or legislative drafters when crafting their response to the policy problem. This can be efficient in allowing new and better modes of compliance (or capturing new and problematic forms of conduct) without having to wait for legislation to 'catch up'.

For example: To continue the above example, suppose a new light rail was built which enabled a quicker commute to work for employees than the route specified in the prescriptive rule, and thereby allowed them extra time for leisure activities or sleep in the morning whilst still getting to work by 8:30am (or indeed, arriving at work early!). Neither the employees nor employer would be able to benefit from the light rail, creating inefficiencies. The principles-based rule, however, would allow immediate benefits.

¹ The Australian Law Reform Commission (ALRC) has described principles-based regulation thus: '[It] can be distinguished from rules-based regulation in that it does not necessarily prescribe detailed steps that must be complied with, but rather sets an overall objective that must be achieved... principles-based regulation... guides and assists regulated entities to develop an appreciation of the core goals of the regulatory scheme. A key advantage of principles-based regulation is its facilitation of regulatory flexibility through the statement of general principles that can be applied to new and changing situations. It has been said that such a regulatory framework is exhortatory in that it emphasises a 'do the right thing' approach and promotes compliance with the spirit of the law. (ALRC, [For your information: Australian Privacy Law and Practice](#), Report 108).

The main drawback of principles-based legislation is a lack of precision. There is more ambiguity and room for subjective interpretation in principles-based approaches than in prescriptive drafting, where there is often little room for argument about whether or not a law or rule has been breached.

This can make it more difficult to determine whether a breach has occurred, particularly in 'grey area' circumstances. It might also result in increased referral of disputes to the courts to resolve disagreements about the meaning of the law.

For example: It is a current policy principle (outcome sought) of the Australian Government that purchasers should be able to access information about the quantity of a product so they can make a determination of value for money, compare it with like products, and thus create a competitive market through correcting market failures relating to information asymmetry. Australia's measurement laws reflect this policy outcome in prescriptive, 'bright line' rules around the placement, height and format of a measurement mark on certain products. The Australian Consumer Law arguably addresses the same outcome through a principles-based approach, by prohibiting traders from engaging **'in conduct that is liable to mislead the public as to the nature, the manufacturing process, the characteristics, the suitability for their purpose or the quantity of any goods or services'** (emphasis added).

With Australia's measurement laws, there is little to no ambiguity in ascertaining breach. With the Australian Consumer Law, however, there would need to be active consideration of whether conduct was 'liable to mislead the public'. Questions such as 'who is the public?', 'is confused the same as misled?' would need to be resolved. Published guidance from the regulator or decisions of the courts may contain such detail.

A principles-based framework is more likely to be appropriate for requirements which need to be able to accommodate a changing external environment, or which have been criticised for being overly complex, prescriptive or containing redundant rules and provisions. A well-written principle will describe the intended outcome clearly enough to produce workable results.

However, there can still be cases where it is useful to explain the principle's application to particular situations or where there may be a sufficient doubt or ambiguity about its meaning or scope to warrant clarification. The process of explanation and clarification is called 'unfolding' the principle. 'Unfolding' of the principles in legislation can often be accommodated in regulations, guidance material published by the regulator, or other sources. Recommendations on the level of detail for 'unfolding' the principles of Australia's measurement system will be developed as a product of the review consultation process.

QUESTIONS

- 6.1 Would you be confident of operating in a principles-based regulatory environment for measurement? Why or why not?**
- 6.2 Would the need for detailed guidance material limit the value and flexibility of a principles-based approach to measurement laws?**



7. Measurements used for trade

The primary purpose of the Australian trade measurement system is to ensure that goods and services are traded based on fair and accurate measurement.

In Australia, the trade measurement requirements under the Act apply to transactions where the sale or purchase of a good or article is based on measurement, such as everyday household items from groceries and fuel, to electricity and water, as well as commodities like iron ore and grain. It also extends to instances where the price of a service is based on measurement, for instance freight or removal of waste.

To trade successfully businesses require a regulatory framework that provides measurement confidence and supports fair participation in global markets without unnecessary barriers to trade. To support businesses, Australia's measurement laws require an established infrastructure of measurements linked seamlessly to the international system of measurement.

Australia's current measurement laws give confidence to buyers and sellers by providing a framework that ensures measuring instruments used for trade are fit for purpose.

Pattern approval and verification requirements apply to all instruments 'in use for trade' (trade measuring instruments). Pattern approval confirms that a measuring instrument's design meets relevant documented standards and that the instrument performs as intended over a range of environmental and operating conditions. Verification assesses the accuracy of measuring instruments to check whether they operate within the accepted limits of error.

The term 'in use for trade'² covers measuring instruments used in (a) trade transactions, (b) tax debits and (c) tax credits/adjustments where specified in the measurement regulations. Consequently, a broad range of measurements (and measuring instruments) are captured under Australia's measurement laws. This poses challenges in regulating new and specialised measuring instruments where there is little to no existing measurement infrastructure in the form of pattern approval standards and test procedures to confirm the ongoing accuracy of these instruments.

QUESTIONS

- 7.1 Are there benefits from directly regulating an area of measurement as opposed to providing broad principles of good measurement practice without direct intervention?**
- 7.2 What regulatory models should Australia's measurement laws enable (for instance, principles-based, compliance-focused and/or rules-based), and why?**

7.1 Changing nature of trade measurement

While trade measurement in Australia has traditionally focused on quantity measurements (mass, volume or number), it has grown to include quality measurements. For example, payments to farmers for cane sugar and grain are based not only on mass but also on other factors such as the sugar content, protein content and moisture of these agricultural products. Other examples can be seen in milk pricing and timber products.

Additionally, measurement is also increasingly used in service-based transactions. While measurements of mass and volume are commonly used to determine the price of postage, freight or the cost of waste removal, there has been a shift towards the use of less traditional measurements in determining the price paid for a service. The digital sector has seen the rapid reliance on data usage measurements by Internet Service Providers and telecommunication providers to determine usage costs based on both speed and upload/download volumes. New types of time based services in the growing electric vehicle charging sector and shared service economy, such as ride-share services, are examples of new developments in the nature of trade measurements.

² See section 3 of the Act, which refers to 'in use for trade'.

With the shift away from traditional analogue to digital instruments, combined with ever increasing innovation in measuring instrument technology, the question of what constitutes a measuring instrument is becoming increasingly important. Examples include, but are not limited to:

- Instruments controlled by software
- Measuring instruments with modular, interchangeable components
- Instruments connected virtually (for example, multiple load cells reporting to a hand-held device, or mobile phone applications that integrate the individual measurements into a final result and then displays it)
- Instruments without a co-located display (for example, electricity meters)
- Independent instruments deployed across multiple physical locations but effectively controlled by a single central computer (for example, supermarket point of sale systems)
- Instruments calculating quantities on the basis of captured images (for example, hand-held multidimensional measuring instruments)

Bringing each of these instances of innovation into Australia's current measurement laws present challenges. In Australia, all measuring instruments used for a trade purpose are subject to requirements under Australia's measurement laws regardless of the nature of the transaction. Whilst these requirements provide a level of confidence, they can cause barriers to market entry and unnecessary burdens for businesses.

Advances will also continue to be made in both the development and application of measurement technologies that require a more agile regulatory environment, rather than repeatedly revisiting legislation.

QUESTIONS

- 7.1.1 What types of measuring instruments should be regulated by Australia's measurement laws?**
- 7.1.2 How should Australia's measurement laws apply to transactions for goods and services that are based on measurement?**
- 7.1.3 What regulatory models should be applied to quality and quantity measurements?**

7.2 Exemptions

Measurement used solely for descriptive purposes, such as those used to sell televisions or monitors (32 inch display) or on a package of hardware screws described as 12 mm screws do not fall within the scope of the Australia's measurement laws. Where there is a concern with such descriptive measurements consumers are able to seek remedies under the Australian Consumer Law.

Australia's current measurement laws also outline specific exemptions for certain types of measuring instruments. Many of these exemptions relate to matters regulated by states and territories, or those where measurement is one of the considerations for government intervention. Others exist because the desired policy objective could be reached by other means. The legislative exemptions include gas meters, some classes of water and electricity meters, charges relating to phone calls or internet services, taxi fares, charges for hiring a motor vehicle, tyre pressure, parking meters, automated packing machines and greenhouse gas emissions.

QUESTIONS

- 7.2.1 How should Australia's measurement laws specify the types of measuring instruments they apply to? For instance, by exemption or inclusion requirements?**
- 7.2.2 What are your views on the current listed exemptions?**



8. Non-trade measurements

Australia's current measurement laws are intended to support the use of measurement and measuring instruments, for both trade and non-trade purposes, including those regulated and used by other agencies and regulators.

For instance, state and territory law enforcement agencies use the framework to ensure evidential breath analyzers display accurate and traceable measurement results used to determine whether a person is driving under the influence of alcohol. Other examples of non-trade purposes include compliance with:

- transport regulations for heavy vehicles;
- requirements for regulated fisheries; and
- safety and environmental regulations.

Although Australia's current measurement laws provide an established framework to ensure confidence in trade measurement, administrators only use certain aspects of the framework, such as pattern approval. There are limitations under Australia's current measurement laws for other administrators (Commonwealth, and state and territory) to use measurement requirements to ensure compliance with jurisdictional laws, such as verification of measuring instruments under Australia's measurement laws.

A future measurement framework could be adapted to meet the needs of both trade purposes and the needs of administrators that elect to use the measurement framework. Alternatively, administrators could utilise aspects of the framework that are usually applicable to trade measurement to ensure compliance with their legislation. For example, the existing pattern approval and verification infrastructure is accepted for:

- assessment of container weight, ensuring compliance with international maritime treaties;
- obtaining the empty weight of a vehicle, ensuring compliance with state and territory transport regulation; and
- ensuring trains are not overloaded.



*evidential
breath analyzers*



transport



fisheries



safety



environmental

QUESTIONS

- 8.1** What future measurement needs or priorities would benefit from a measurement framework?
- 8.2** Should the focus of the Australia's measurement laws be to regulate measuring instruments or measurement results, or both?
- 8.3** How should the national measurement framework apply to non-trade measurements and instruments? Should the approach be different for different types and/or categories of measurement?
- 8.4** What are the types of non-trade measurements (and measuring instruments) that would benefit from inclusion within the measurement framework?
- 8.5** Are there instances in which non-trade measurements (and measuring instruments) require a nationally consistent approach to measurement?

Annex A: Examples of other countries' scope of measurement laws





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**...a better framework for
measurement in Australia**