



**National Enabling Technologies Strategy - Discussion Paper**  
**Submission in response by Standards Australia**  
August 2009

**1. What are the key issues and challenges that need to be addressed by the National Enabling Technologies Strategy?**

A key issue is to identify areas of the National Enabling Technologies Strategy (NETS) that can be addressed by the inclusive and consensus based Standards Australia standardisation process. Credible and widely accepted standards in the nanotechnology area will be an effective foundation for the NETS to build upon. The Government's early engagement and support for Australian and International standardisation a part of any strategy in this field will contribute to the growth of the sector by:

- providing a basis for consistent development across scientific disciplines and industry through common frameworks for measurement, characterisation and nomenclature and foundations for technological development, application and product development;
- providing certainty for manufacturers, suppliers and consumers alike in the quality and safety of nanoparticles and nanotechnology';
- documenting consensus based agreement between all interested stakeholders, including governments, industries, academia and the community;
- supporting government policy frameworks for both formal regulation and industry self regulation; and
- ensuring Australian requirements are included in the development of the International Standards.

Standards as a tool can provide an opportunity to innovate and develop new processes, technologies, industries and markets, bringing associated growth in employment and the economy. Today, innovation is understood to involve much more than the transmission of knowledge down the pipeline of production from research to development to application. Standards can compliment the innovation that flows from R&D and may even substitute for it by diffusing knowledge through and between businesses.

National standards facilitate harmonised regulation. They are a key component of Australia's regulatory infrastructure. Standards development is a driver of productivity and competitiveness within forms and industries and a keys means of supporting the diffusion and take up of new technologies and innovative processes across industries and the community.



## **2. How should these issues and challenges be addressed? What is your organisation doing to address those issues and challenges?**

Standards Australia is positioned to provide customised standards solutions that provide real and tangible outcomes that will benefit the environment, the community and the national as a whole in the area of enabling technologies.

Due to the recent implementation of the Standards Australia New Business Model, stakeholders can partner with Standards Australia to develop standards/other tools in a shorter timeframe.

Net Benefit is the central concept which now underpins all of our standards development activities. It can be defined as 'having an overall positive impact on relevant communities', where the cost of development must be outweighed by the benefits provided to Australia. All projects that Standards Australia is involved in are judged on this criterion amongst others, such as demonstration of wide stakeholder support. For every new project, the proponent must submit a project proposal and articulate the net benefit case to Standards Australia for consideration.

New tools and processes were launched to assess and prioritise standards projects and to engage with stakeholders more effectively in order to identify the most appropriate standards development pathways.

### How long does it take to develop standards?

Standards Australia will discuss funding levels and agree on timeline requirements with stakeholders prior to project commencement and this enables standards projects to be completed in a much shorter timeframe, sometimes as short as 10-12 months or less, if there is an initial draft available that the technical committee can begin work on.

The costs associated with agreed timeframes are factored into a tailored agreement between the two parties before work begins. It must be noted however that timelines are always subject to the length of time it takes the volunteer committee members to reach a consensus decision on the content.

### The Role of the Technical Committee

The content of a standard is the responsibility of a technical committee. The basis for the composition (or 'constitution') of a technical committee is to ensure balanced participation by those interests that will be significantly affected by the resulting standard. Individual members of a technical committee are selected by appropriate Nominating Organisations

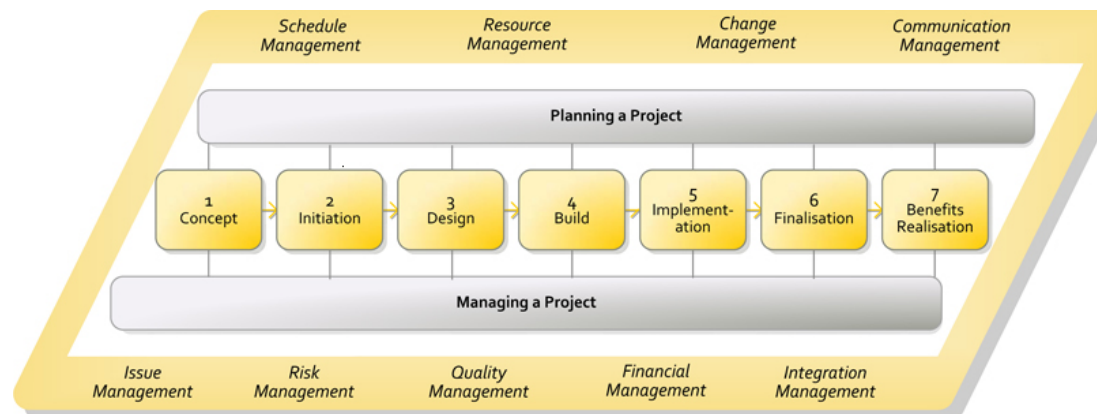


that may include, but are not restricted to, government bodies, industry associations, community-based and consumer organisations, employee organisations and professional, technical or trade associations.

### **Standards Australia Project Management Methodology**

Standards Australia has developed and implemented a methodology to manage all standards development projects. This provides a common framework, tools and templates within which all projects will be developed. The SP<sub>3</sub> process has seven distinct phases, each with specified milestones for delivery which are tracked throughout the lifecycle as detailed below.

*Diagram 1: The Seven Phases of SP<sup>3</sup> Development*



An integral benefit of this new methodology is the level of control that it brings to all development projects through the introduction of status reporting, issue and risks management and change management.

### Proposal Submission and Evaluation

The Project Proposal is submitted to the Standards Australia Customer Information Service (CIS) for registration.

A Project Proposal is required to be completed and submitted to Standards Australia for approval. Part of the Project Proposal requires that relevant stakeholders are consulted to determine if there is wide support for the proposed Australian Standard/ TS or Handbook.

- A Project Proposal requires information on the following:
- Scope of Proposal

- Avoidance of Duplication – Including International Standard
- Strategic Priorities
- Contractual Obligations for Standards Australia
- Preferred Pathway for Development
- Stakeholder Support
- Risks and Opportunities
- Post Implementation Review
- Purpose and Demonstration of Net Benefit

Part of the Project Proposal is the development of the Net Benefit case. This is where the proponent articulates the way the proposed standard will benefit the Australian community against the following criteria:

- Public health and safety;



- Social and community impact;
- Environmental impact;
- Competition; and
- Economic impact.

As part of Standards Australia's obligations as peak national standard's body and under the Memorandum of Understanding with the Commonwealth, all projects must demonstrate a positive Net Benefit to the community as a whole.

Net Benefit is a core component of how Standards Australia operates.

For simplicity and to align the Productivity Commission's recommendations with the Accreditation Board for Standards Development Organisations (ABSDO's) requirements, Standards Australia has defined Net Benefit to mean *"having an overall positive impact on relevant communities"*.

These measures align with Australian Government Office of Best Practice Regulation (OBPR) and provide a level playing field for all proposals for Standards development projects.

#### Proposal Approval

Once the Proposal has passed evaluation it is forwarded to the Production Management Group (PMG) for final consideration and approval. The PMG approves/rejects the proposal thereby endorsing the pathway, net benefit, resource availability as well as prioritisation of the project/program.

Australian Standards are efficient and effective. They are developed by Government, business, the community and other relevant stakeholders. In this way, Australian Standards are developed *'by the people for the people'*. Standards Australia has the experience at managing and implementing initiatives such as this.

Standards Australia currently has a number of collaborative relationships and projects, examples of which include:

- The Department of Health and Ageing (DoHA) – Health Informatics (IT14);
- Department of Environment, Water, Heritage and the Arts (DEWHA) – Energy efficiency standards; and
- The South Australian Government – Environmental Protection Authority (EPA) – Greywater treatment for river vessels.



### **3. What would you like to see as the main outcomes for the National Enabling Technologies Strategy?**

a) Increased and focused financial support for International Standards Activities, in particular Australian delegate involvement in International Standards Organisation (ISO) Technical Committee (TC229) to develop standards in nanotechnologies; and financial support to ensure project management work associated with this engagement.

b) Standards Australia Committee NT-001 to begin work on a programme of Australian Standards where appropriate and warranted to meet some of the nation's enabling technologies policy objectives under a collaborative agreement with the Government.

c) Financial support for adopting ISO Nanotechnology standards and documents as AS/ISO. For example below:

- ISO/TR 12885:2008 Nanotechnologies -- Health and safety practices in occupational settings relevant to nanotechnologies.
- ISO/TS 27687:2008 Nanotechnologies -- Terminology and definitions for nano-objects Nanoparticle, nanofibre and nanoplate.
- ISO/TR 12885:2008, Health and safety practices in occupational settings relevant to nanotechnologies. This document focuses on the manufacture and use of engineered nanomaterials. The Technical Report is based on current information about nanotechnologies, including characterization, health effects, exposure assessments, and control practices. Broadly applicable across a range of nanomaterials and applications, the Technical Report provides advice for companies, researchers, workers and other people to prevent adverse health

and safety consequences during the production, handling, use and disposal of manufactured nanomaterials.

d) Standards Australia proposes a collaborative approach to the dissemination of the standards work being undertaken by NT-001. Examples of communications could include posting meeting notes, newsletters or updates on the NETS website.

#### Standards Australia and Nanotechnology work to date

In early 2005, Standards Australia voted to establish a new International Standards Organisation (ISO) Technical Committee (TC229) to develop standards in nanotechnologies.

In mid 2005, Standards Australia hosted a forum to consult with industry and government on Australia's potential participation on this International Committee. This consultation resulted in agreement from all parties that Australia should take an active role in TC229



Nanotechnologies and should initiate an Australian Technical Committee (NT-001) to contribute to the development of standards in this area in Australia.

#### Standards Australia's NT-001

In early 2006, Standards Australia formed the Technical Committee NT-001 and hosted its first meeting in March 2006. The constitution of NT-001 covers a broad range of industry, government, academic and consumer groupings. NT-001 plans to reconstitute and include more members to increase the expertise and knowledge base of the group.

In summary to date, Standards Australia has:

Supported an Australian delegate to attend the first meeting of TC229 in London in November 2005;

Convened the new Australian Technical Committee, NT-001 Nanotechnologies to participate on an ongoing basis to the development of Australian and International Standards in this area;

Appointed a senior staff member for NT-001;

Identified NT-001 as a key cross-sector standards development activity, reporting to all standards sector advisory boards;

Standards Australia has become a member of the Australian Nanotechnology Business Forum (ANBF); and

International Electrotechnical Commission (IEC) established a new committee TC113 - Nanotechnology standardisation for electrical and electronic products and systems.

Standards Australia is an 'Observer' member. Standards Australia is monitoring the work being done by the IEC TC113.

#### International Nanotechnology Standards Activities

The scope of TC229, which has 30 Participating and 10 Observer member countries, is standardisation in the field of nanotechnologies that includes either or both of the following:

1. Understanding and control of matter and processes at the nanoscale, typically, but not exclusively, below 100 nanometres in one or more dimensions where the onset of size dependent phenomena usually enables novel applications;
2. Utilising the properties of nanoscale materials that differ from the properties of individual atoms, molecules and bulk matter, to create improved materials, devices, and systems that exploit these new properties.

Specific tasks include developing standards for: terminology and nomenclature; metrology and instrumentation, including specifications for reference materials; test methodologies; modelling and simulation; and science-based health, safety, and environmental practices.



At the first meeting of ISO TC 229 in London in November 2005, the Committee established the following structure:

- Working Group 1 - Terminology and nomenclature (Convenorship – Canada)
- Working Group 2 - Measurement and characterisation (Convenorship – Japan)
- Working Group 3 - Health, safety and environment (Convenorship – USA)
- Chairman's Advisory Group (CAG)

ISO TC 229 will, in accordance with ISO's strategic plan for 2005 to 2010, develop robust standards and other deliverables relevant to nanotechnologies that will:

- support the sustainable and responsible development and global dissemination of these emerging technologies;
- facilitate global trade in nanotechnologies, nanotechnology products and nanotechnology enabled systems and products;
- improve quality, safety, security, consumer and environmental protection, together with the rational use of natural resources in the context of nanotechnologies; and
- promote good practice in the production, use and disposal of nanomaterials, nanotechnology products and nanotechnology enabled systems and products.

ISO TC229 has been organised into the following structure:

Subcommittee/Working Group	Title
TC 229/CAG	Chairman Advisory Group
TC 229/WG 1	Terminology and nomenclature
TC 229/WG 2	Measurement and characterization
TC 229/WG 3	Health, Safety and Environmental Aspects of Nanotechnologies

Continuity of delegations is important, to build relationships and maintain dialogue with key international participants and to actively influence the direction of projects and the thinking of other delegations.

NT-001 has expressed clear interest in monitoring, contributing, and where possible, leading work in this area. NT-001 provides a conduit between the Australian nanotechnology community and TC229. Standards Australia delegates to TC229 have been very successful in influencing the direction of the ISO Nanotechnology standards development.

The table below represents the TC229 meeting locations for the coming years. Standards Australia will require funding support for NT-001 delegates to attend each sub-committee meeting for the coming financial years.

Meeting Number	Location	Committee
10	Maastricht – Netherlands	TC 229
11	Malaysia	TC 229
12	Isfahan - Iran	TC 229

#### **4. How do you think your organisation could work with the Enabling Technologies Policy and Public Awareness Sections and others to address those issues and challenges?**

Standards Australia, as the nation's peak non-government standards development body, has a very important role to play in the development of Australian Standards as an important component of a harmonised regulatory approach. Standardisation is a process that assists in the removal of inefficiencies and duplication across jurisdictions.

Standards Australia would welcome increased engagement with the Enabling Technologies Policy and Public Awareness Sections and other Government agencies and industry stakeholders to maximise the benefits which may be gained from the development of Australian Standards.

The purpose of this document is to reinforce Standards Australia as the right and obvious choice to partner with the Government in a collaborative manner as part of the solution to meet Australia's National Enabling Technologies challenges going forward.