Standards Development Organizations:

Climate Action Guidance

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Introduction

The impacts of climate change, from extreme weather events to rising sea levels, are no longer theoretical scenarios but stark realities. The need for robust, sustained, systemic and equitable climate action is greater than ever. In this context, standards development organizations (SDOs) can play a unique role in enabling climate adaptation and mitigation, supporting an equitable net zero transition by developing standards that support innovation, resilience, and sustainable development.

This guidance, developed for national SDOs, aims to empower these organizations to take meaningful, proactive steps to identify ways of taking meaningful climate action, recognizing SDOs' distinct role in climate action. It draws upon BSI's own efforts to realise the London Declaration, as well as best practice examples from ISO in the implementation of ISO's London Declaration Action Plan.

Who is this guide for?

This guide is aimed at professionals within national standards development organizations. It aims to be universally applicable, and accessible to non-technical experts in the field of climate change and sustainability.

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1. The role of standards development organizations in climate action

Standards development organizations (SDOs), as impartial, consensus-based entities, have a critical role in addressing the climate crisis. Their unique attributes position them as key enablers of sustainable change:

- **Developing Standards:** By developing standards for products, services, and systems that prioritize sustainability and emissions reduction, SDOs can help accelerate the transition to net zero.
- **Fostering Innovation:** Standards can play a key role in fostering innovation in the climate governance landscape, convening industry and society to address novel and fast-moving challenges.
- **Ensuring Consistency and Compatibility:** SDOs can facilitate global harmonization by aligning standards across regions, ensuring that climate solutions are consistent and compatible on a global scale.

1.1 Dimensions of Climate Action for SDOs

Broadly, climate action can be divided into two categories:

- **Climate adaptation** – referring to adjusting a system, process or product to be compatible with actual or expected climate impacts (e.g. increased intensity and frequency of extreme weather events)
- **Climate mitigation** – referring to actions that either reduce greenhouse gas emissions (e.g. through increased fuel efficiency measures) or remove greenhouse gases (e.g. through the planting of trees, or technological removal)

Both climate adaptation and mitigation are relevant in the context of standardization. It is important to note that actions related to climate adaptation and mitigation can have cross-impacts, e.g. adaptation measures that increase greenhouse gas emissions (affecting mitigation), or mitigation measures that affect climate adaptation. Care should be taken to identify and address where these synergies exist.

1.1.1 Climate adaptation and standardization

Ranges of operating conditions have always been a feature of standards, for example expected ranges of moisture, heat stress, or wind speed. Usually, determining the appropriate ranges for such variables has been based on historic data. However, projections by organizations such as the IPCC (Intergovernmental Panel on Climate Change) and recent real-world experience demonstrate that it is now insufficient to look to past data to determine appropriate performance conditions. Increased severity and intensity of extreme weather events, both now and into the future, necessitate a new way of thinking when it comes to setting parameters. This is particularly true in the contexts of products with long lifespans, such as building materials, that can be expected to be more susceptible to variation in normal operating conditions into the future.

Standards that do not take these considerations into account may become unfit for purpose. This is true across the entire lifecycle of a product, from primary resource extraction, through to manufacture, distribution, and end of life disposal.

1.1.2 Climate mitigation and standardization

All products and services have an impact on the climate. From requiring certain inputs that must be sourced, refined, and manufactured, to end-of-life outputs associated with disposal and decomposition. The precise magnitude of this impact varies from product to product, and service to service, but the fundamental reality of the impact remains the same.

Therefore, standards associated with a given product or service, its manufacture, use, or disposal, have an impact on the climate. The onus is therefore on standards makers to quantify this impact, and develop standards that appropriately mitigate these emissions sources, to ensure that standards contribute to global net zero.

1.2 Standards supporting the net zero transition: the London Declaration

Recognising the role that standards can play in facilitating an equitable net zero transition, in September 2021 the ISO London Declaration was adopted by the ISO general assembly. This commitment recognised the pivotal role that the international standards system could play in facilitating reaching net zero. The declaration consists of three pillars of action:

1. Foster the active consideration of climate science and associated transitions in the development of all new and revised International Standards and publications.
2. Facilitate the involvement of civil society and those most vulnerable to climate change in the development of International Standards and publications.
3. Develop and publish an Action Plan and Measurement Framework detailing concrete actions and initiatives and a reporting mechanism to track progress.

While international standards development organizations play an important role in facilitating the realisation of the London Declaration, national standards development organizations are also key to its success. National standards development organizations can often innovate more quickly in their processes and policies, and often are responsible for national standards that are applicable solely in their domestic context. Therefore, there is an obligation on all standards development organizations to work towards the realisation of the London Declaration and align the standards development system with a net zero future.

2. Organizational climate action

2.1 High level principles

In taking climate action as an organization beyond the standards development process itself, there are several high-level principles that should be followed to ensure robust, just, and ambitious climate action.

Alignment. Any organizational policy or strategy should align with broader efforts within the international standards community and beyond (e.g. the Paris Agreement).

Urgency. Any action should be taken immediately and on an ongoing basis to address climate adaptation and mitigation.

Ambition. Any targets and policies should be ambitious in scope, and include short-, medium- and long-term targets.

Prioritization. Any targets or policies should be based on a prioritization of immediate greenhouse gas reductions and adaptation to immediate forecast climate impacts.

Evidence-based. Any action or policy should be based on the best available knowledge, including scientific and indigenous knowledge, and regularly reviewed for changes to generally accepted best available knowledge.

Risk-based. Any action or policy should be assessed for potential risks, and controls put in place to monitor these risks on an ongoing basis. These risks should include the risks of not acting.

Credible. Any action or policy should be demonstrably high-quality, and able to be independently assessed by a third-party.

Just. Any action or policy should take equity and justice considerations into account, and support the realisation of the UN Sustainable Development Goals where possible.

Transparent. Any action or policy should be publicly announced and made available to external scrutiny. Regular reports on progress should be produced.

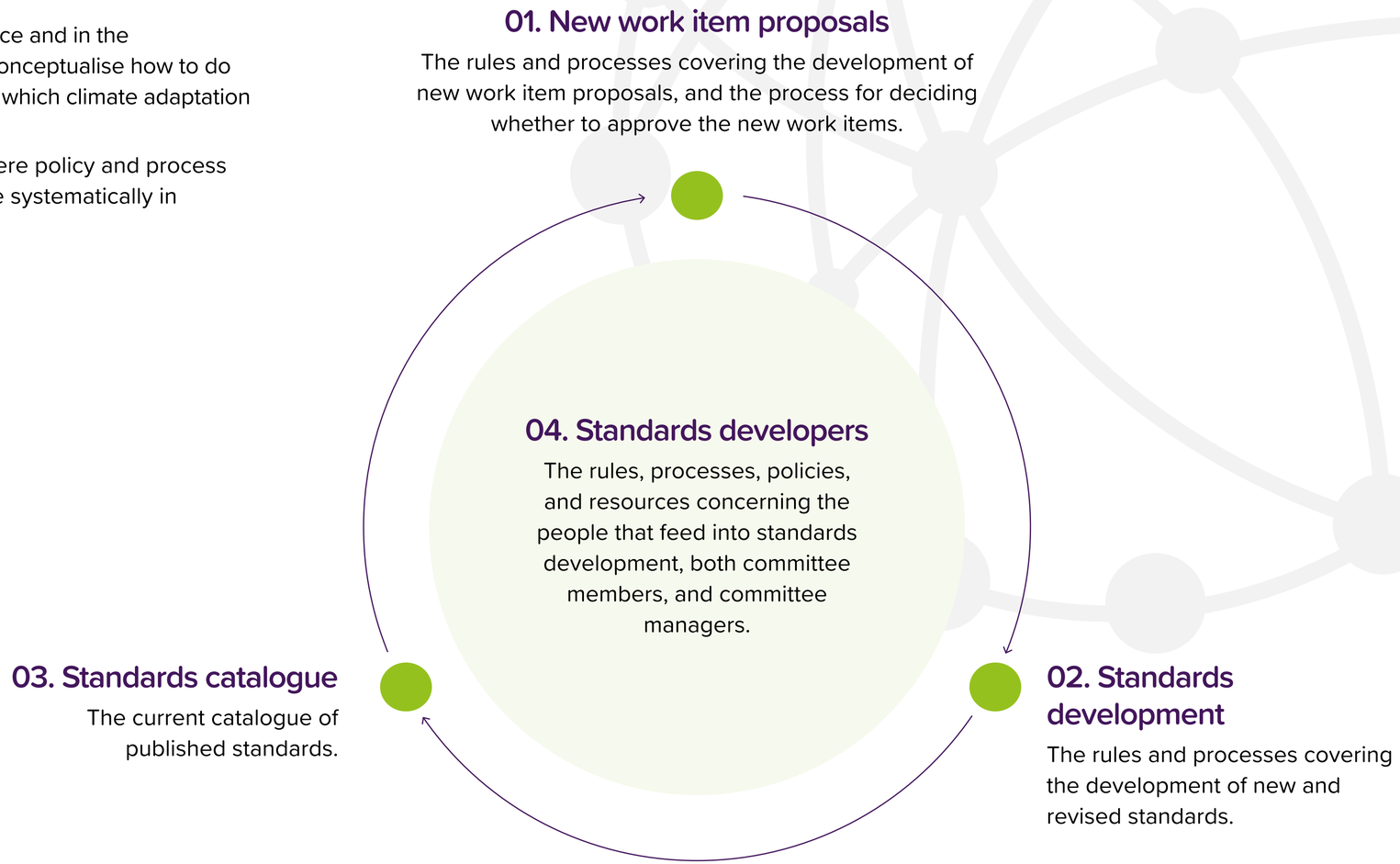
Ongoing. Any action or policy should aim to achieve net zero and/or adapt to locked in climate impacts, with future plans for more ambitious strategy or policy development (e.g. negative greenhouse gas emissions).

Further information on taking organizational action for net zero can be found in *ISO IWA 42:2022 Net zero guidelines*

2.2 Embedding climate action in standards development

The ISO London Declaration commits signatories to actively consider climate science and in the development of all new and revised standards and publications. A helpful way to conceptualise how to do this is to consider the lifecycle of standards development and examine the ways in which climate adaptation and mitigation considerations can be incorporated into each.

This section will provide guidance for each of these areas in turn, suggesting where policy and process changes can be implemented to consider climate adaptation and mitigation more systematically in standards development.



2.2.1 New work item proposals

Ensuring that new work items - whether it be the revision of existing standards, or the development of new standards – align with the net zero transition is crucial in taking robust climate action. Therefore, steps should be taken to ensure proposers of new work items are adequately considering climate adaptation and mitigation in the proposal itself, and a mechanism is in place to track how this is addressed throughout the project's lifespan.

If proposal templates are used as part of this process, one option is to include a mandatory section in the template covering the expected climate adaptation and mitigation considerations in the proposal, and how they will be addressed. Care should be taken to ensure there is sufficient expertise within the review panel to assess whether the proposer has sufficiently addressed the climate considerations within the proposal, and that a mechanism is in place to monitor how the considerations are addressed.

Guiding questions

- Is the objective of this new work item subject to climate impacts – e.g. increased severity and frequency of extreme weather events such as droughts, floods, storms, etc.? If so, how will this be addressed?
- Is the objective of this new work item associated with the emission of greenhouse gases, or within a sector or activity that is a significant source of greenhouse gases? If so, how will this be addressed in the development of this work item?
- Is there relevant expertise on the review board for proposals to assess whether climate considerations are being adequately addressed by proposers?
- Is there a mechanism in place to ensure climate-relevant work items are tracked throughout their project lifecycle to assess how the identified considerations are addressed?

2.2.2 Standards development

Aligning standards with the net zero transition requires a systematic review of the rules and procedures governing standards development. Care should be taken to ensure both the requisite knowledge is present in committees to adequate address climate adaptation and consideration, and that the process of standards development includes mechanisms for assessing these.

Guiding questions

- What rules and templates govern how committees meetings are run – e.g. could a standing item on committee agendas be created to assess the climate considerations of current projects?
- What are the rules governing the drafting of national standards? Could the be changed to require committees to consider climate adaptation and mitigation as part of the drafting process?
- How are national committees' objectives set? Could climate action be embedded as a core objective of all national committees e.g. in a committee's strategic business plan?
- How are drafting panels onboarded and trained to write standards? Is there a possibility to include some training on climate adaptation and/or mitigation, or develop a guidance document for these panels?
- What are the requirements for committee membership? Could these be amended to include a requirement to actively consider the clime impact of a committee's work as a condition of membership? Additionally, could a requirement be created to assess the climate expertise on a committee, and proactively seek new membership if a lack of climate expertise is identified?

2.2.3 Standards catalogue

In responding to climate change, it may be necessary to review standards outside their normal systematic review cycle. For these, conducting a climate impact materiality assessment of the current standards library may be beneficial.

Guiding questions

- What sector do the largest proportion of national standards belong to? Is this sector associated with significant greenhouse gas emissions?
- Do sectors associated with significant greenhouse gas emissions have any dedicated climate-related standards? If not, could they be developed?
- Are there any standards that have been validated without revision in several years?
- Which standards have objectives most susceptible to climate impacts, e.g. increased severity and frequency of extreme weather events such as droughts, floods, storms, etc.?
- What are the most utilised standards? Do these consider climate adaptation and/or mitigation?
- Where a standard is an adoption, is there an opportunity to propose a climate-related revision to the relevant regional or international SDO?
- Does additional support need to be brought in to support committees – e.g. advisors with specific expertise in climate adaptation and/or mitigation?

2.2.4 Standards developers

Ensuring the correct constitution of a committee is a core requirement for effective standards development. As part of a SDO's climate action plan, it may be necessary to review a committee's composition to ensure the right expertise is present on the committee.

Guiding questions

- Is the right expertise present on committees to assess and address the climate impacts of its work? If not, how can this expertise be sourced?
- What networks are available to committees looking to source climate-related expertise? Could these networks be fostered?
- How confident are committee managers in their ability to identify a lack of expertise within a committee, and appropriate recruit to address it?
- Could training or resource development assist in upskilling all committees in their climate knowledge?

3. Climate adaptation in standards development

Incorporating climate adaptation into standards requires a systematic approach. A suggested approach is:

1. Following high level adaptation principles.
2. Assessing the necessity of climate adaptation in standards.
3. Implementing appropriate adaptation measures.

3.1 Principles of climate adaptation in standardization

When incorporating climate adaptation considerations into standards, it is helpful to consider additional principles, to be considered in addition to the principles outlined in 2.1 above. Due consideration should be given to:

Integration. Adaptation considerations should be integrated into the core objectives and clauses of standards.

Prioritise those most vulnerable. Climate impacts are disproportionately felt by certain groups within society. Therefore, standards developers, when considering climate adaptation measures in standards, should identify and prioritise the people, places and infrastructure that are most vulnerable to climate impacts.

Build partnerships. Adaptation measures require coordination across society and across different scales from local to national and therefore should build upon and be in consultation existing public and private stakeholder groups and initiatives.

3.2 Assessing the necessity of climate adaptation in standards

When assessing the necessity for considering climate adaptation in standards, it can be helpful to assess potential direct and indirect impacts to the achievement of a standard's objectives via a checklist. Such a checklist can be found in documents such as *ISO Guide 84:2020 D.3*, or *CEN/CENELEC Guide 32:2016*.

Direct climate impact considerations include:

- Does the production or service delivery depend on the supply of water (high volumes or specific quality), energy, agricultural or forestry products?
- Is the climate or water a key input into the production process?
- Does production or service provision involve any outdoor activities?
- Are there any climate, weather, temperature or humidity sensitive production stages?
- Processes, such as those reliant on cooling, water use or energy supply?
- Is the standard for a test method that is sensitive to temperature or humidity?
- Is the effectiveness of the product affected by the weather or climate?
- Does the weather or climate influence what properties are required of the product?
- Are disposals or reprocessing activities likely to be weather or temperature sensitive?

Indirect climate impact considerations include:

- Does the product rely on the supply of specific raw materials or inputs from a specific region?
- Is production or service provision likely to rely on staff occupying premises where health, safety and comfort can be compromised by weather?
- Is the service life of the product more than 10 years including its reuse? Is reusability important?
- Does your standard deal with transportation or is transport involved in any stage of the life cycle?

If the answer is 'yes' in relation to any of the above questions, then climate adaptation considerations are likely relevant to the standard in question. It is important to note that the above questions are not exhaustive, and additional questions should be developed to suit the specific technical area of the committee in question. These should be developed by the relevant committee, with external expertise sought where the committee identifies a lack of climate adaptation expertise within the committee membership.

3.3 Implementing appropriate climate adaptation measures

Where climate adaptation is identified as being relevant to a committee's standardization activities, appropriate measures should be incorporated into the content of the standard. The precise nature of these measures will vary based both on the type of standard (e.g. management system standard, test method, product standard, etc.), and the area of standardization (e.g. steel manufacturing, facility management, etc.). Additionally, the measures will vary depending on the state of best available knowledge as to future climate impacts. However, measures could include:

For agricultural products, consider different ingredients or new climate resilient varieties.	Give preference to materials that can be sourced from more than one place.
Ensure buildings can function and provide thermal comfort in a changing climate.	Include different design approaches depending on the geographical factors of area of use and provide relevant supporting information, e.g. maps.
Choose materials that are more robust, heat resistant, porous, waterproof (depending on the context).	Design for durability including improved reparability and maintainability.
Assess that products at end-of-life will not be negatively affected by climate change in their reuse, recycling, recovery, disposal or decommissioning and look for new/ alternative end-of-life options if necessary.	Choose the most resilient transport methods.

4. Climate mitigation in standards development

Climate change mitigation generally refers to actions that seek to avoid, minimise, limit, or compensate for the release of greenhouse gases. In addressing climate mitigation, a three-step approach should be adopted:

1. Identify the best method to evaluate the climate mitigation potential of a given standard or technical area.
2. Quantify (where possible) the emissions associated with a given standard or standardization activity, and associated proposed mitigatory activities.
3. Implement direct and indirect measures to mitigate the climate impact of a standard, following the mitigation hierarchy.

4.1 Choosing an evaluation method.

Addressing climate mitigation in standards is an iterative process. Several methods exist to assist in scoping the mitigatory potential of a standard.

Where a standard is situated within a wider dynamic system, a systems thinking approach can help assess the broader impacts a change in a standard can have on the emissions of a given system. For example, changing the performance requirements in a standard could have broader knock-on impacts within the value-chain that standard operates.

- **ISO Guide 84: 2020, Annex A** provides more detail on how to conduct a systems mapping.

Where a standard is associated with a multi-stage process (such as the manufacture, use and disposal of a product) then a life-cycle approach is a helpful method for ensuring the greenhouse gases associated with the entire lifecycle of a product or service are captured, and guide the development of appropriate provisions within a given standard.

- **ISO Guide 84: 2020, Clause B.3** provides more detail on the life-cycle approach.

Where a standard is associated with risk, then a risk- or precautionary-based approach may be helpful to scope the range of climate interventions possible. A risk-based approach is useful where the risks can be properly identified and understood. Where this is not possible, for example due to a standard being associated with a dynamic or complex system, then a precautionary-based approach may be more helpful.

- **ISO Guide 84: 2020, Clause B.4** provides more detail on the risk-based approach, and Clause B.5 provides more information on the precautionary-based approach.

4.2 Quantifying greenhouse gas emissions.

Where possible, standards should include the ability to quantify the emissions associated with their use. Where possible, this should be included directly in the standard itself, as this will increase the likelihood that should quantification work can be done. There exist a range of existing approaches for conducting such an assessment.

Standards that can facilitate in this include:

- **ISO 14064-1:2018** *Greenhouse gases — Part 1: Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals*
- **ISO 14083:2023** *Greenhouse gases — Quantification and reporting of greenhouse gas emissions arising from transport chain operations*
- **ISO 19694-1:2021** *Stationary source emissions — Determination of greenhouse gas emissions in energy-intensive industries — Part 1: General aspects*

4.3 Mitigating greenhouse gas emissions

Determining the intervention to minimise the greenhouse gases associated with a given standard will vary depending on the technical area. In all cases however, the mitigation hierarchy should be followed. The mitigation hierarchy is:

Principle	Guiding Question
Avoid	• Can the development of a standard be done in a way that avoids emissions (e.g. increased online standards development?) • Can a standard help identify and avoid the emission of greenhouse gases?
Reduce	• Can a standard help identify and/or support the reduction of greenhouse gas emissions? • Can efficiencies be encouraged in the standard? (e.g. processes, waste, etc.?)
Substitute	• Can the standard help identify/support the substitution of greenhouse gases (e.g. substituting fluorinated gases for another input?) • Can alternative fuels, renewable energy, e.g. be promoted in the standard? • Can the standard be converted into a performance standard to foster innovation?
Compensate	• Can the standard hep identify/support ways to compensate for greenhouse gas emissions (e.g. through nature-based sequestration?)

5. Civil society in standards development

5.1 Introduction

People who are socioeconomically, culturally, politically, institutionally, or otherwise marginalised by society are especially vulnerable to the impacts of climate change. This can include, but is not limited to, the young and old, people with disabilities, ethnic minorities, and those in sub-standard housing.

5.1 General considerations to enhance stakeholder participation in standards development

Some steps to consider when engaging stakeholders in the standards development process include:

1. **Conduct stakeholder mapping** - Where a standard is identified to have potential impact on a particular stakeholder group, particularly where that group is historically underrepresented in standardization, consider conducting a stakeholder mapping of the relevant committee. Ensure committee managers are regularly capturing and reporting committee demographics, and proactively identifying where additional representation is needed, e.g. in order to ensure a new standard under development is suitable for a variety of stakeholders.

2. **Identifying gaps and stakeholder interests** - Evaluate the committee's makeup against the specific requirements of climate-responsive standards. Seek input from stakeholders who can offer insights into the social and community impacts of climate change, ensuring a more holistic and adaptive approach to standardization. Consider the inclusion of stakeholders who can offer different perspectives on climate adaptation and mitigation, such as environmental advocacy groups, indigenous communities, and organizations specializing in sustainable development.

3. **Establish networks** - Establish collaborative relationships with civil society organizations and consumer advocacy groups, recognizing their unique perspectives on the socio-economic implications of climate adaptation and mitigation. Engage with stakeholders who represent marginalized communities, ensuring their voices are heard in the standards development process. Regularly provide updates on upcoming standardization activity that may be of relevance to these networks.

4. **Capacity Building** - Provide training opportunities specifically tailored to empower new committee members with insights into climate science, adaptation strategies, and mitigation efforts. This ensures that diverse stakeholders contribute meaningfully to the standards development process, enriching the collective expertise of the committee.

5. **Alternative Participation** - Consider creating alternative means of allowing stakeholder participation in standards development, beyond committee membership or public commenting. An example of this would be to proactively convene relevant stakeholder groups prior to the initial drafting of a standard or revision, to gather viewpoints and collate them into a position paper. Ensure this position paper is reflected on by the committee, and any decisions on taking its recommendations forward, or not, are communicated back to the group. In this way, stakeholder viewpoints can be demonstrably valued.

6. Conclusion

Climate change requires urgent, ambitious, and inclusive action across every level of the economy and society. SDO's can play a key role in facilitating climate action, allowing for the creation of best practice and consensus-based guidance of what 'good' looks like across technical areas.

The ISO London Declaration is a bold call to action for standards development organizations and requires a systemic consideration of the standards development process itself, and its outputs, to ensure they align with an inclusive net-zero transition. This guidance aims to serve as a jumping off point for shaping SDO's thinking around inclusive climate action as a standards development organization but is in no way exhaustive.

It is hoped that future work can build on this guidance document to capture and amplify examples of best practice across the standards development space. Should you have suggestions or examples as to how this work could be improved, please reach out to *Tom.Cantillon@bsigroup.com*

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About the Commonwealth Standards Network (CSN)

The CSN is a collaborative network that supports trade, economic growth and prosperity throughout the Commonwealth by promoting increased awareness, development and use of international standards.

To find out more about the network please see **www.commonwealthstandards.net** or contact the CSN Senior Programme Manager, Ben Hedley **ben.hedley@bsigroup.com**

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