GREEN HYDROGEN
SOUTH AFRICA

Supporting Suistanable Hydrogen Development:

The Role of Technical Standards, Regulation and Sustainability Certification.

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SUPPORTING SUISTANABLE HYDROGEN DEVELOPMENT:

The Role of Technical Standards, Regulation and Sustainability Certification.

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RESPONSIBLE INSTITUTIONS

Green Hydrogen South Africa (GHSA): GHSA is a multi-stakeholder initiative that promotes South Africa as a leading green hydrogen producer and investment destination of choice. It is led by The Presidency of South Africa and home of the South African Green Hydrogen Summit (SAGHS).

H2.SA: H2.SA is a project of the German Development Cooperation with South Africa. It is commissioned by the German Federal Ministry for Economic Cooperation and Development (BMZ) and implemented by the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH in close cooperation with The Presidency of South Africa. H2.SA's main objective is to promote a South African green and sustainable hydrogen economy. Working closely with its partners from Government, private sector, and civil society, H2.SA provides expertise, resources, and builds capacity for a secure and sustainable energy future that holds opportunities for all South Africans.

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1. Introduction

South Africa's Green Hydrogen Commercialisation Strategy (GHCS) aims to position the country as a major producer and user of green hydrogen, utilising its abundant renewable energy resources, particularly solar and wind. The GHCS places equal emphasis on supporting domestic decarbonisation—essential for one of the world's most carbon-intensive economies—and establishing South Africa as a competitive exporter of green hydrogen. Decarbonisation of domestic industries is also essential to meet the requirements of key export markets, including compliance with the EU's Carbon Border Adjustment Mechanism (CBAM) and similar initiatives in other regions. A core component of the GHCS is the development of a comprehensive regulatory framework, including regulations, codes, and standards (RCS), to support safe, efficient, and compliant production, enhancing both South Africa's local energy transition and its access to international markets.

Standards are an essential tool in regulatory frameworks, typically developed with strong industry input and often adopted or mandated by governments. This approach allows standards to incorporate industry expertise and reflect global best practice, making them particularly effective in addressing complex and evolving technical requirements. By using standards alongside traditional regulations, regulatory frameworks gain flexibility, allowing industries to adapt to new technological advances and changing conditions without the need for frequent regulatory updates.

The South African Bureau of Standards (SABS) is at the centre of these efforts, with a mandate to develop, promote, and maintain South African National Standards (SANS). Through its Technical Committees (TCs), which bring together a wide range of industry stakeholders, the SABS facilitates the drafting, review, and approval of standards, ensuring that they meet national needs and align with international best practice. The SABS also adopts relevant international standards to ensure that South African practices are compatible with global norms, and publishes these standards for accessibility and implementation across industries.

Regional collaboration is expected to play a constructive role in supporting South Africa's green hydrogen objectives. By working with regional bodies and initiatives, South Africa can benefit from knowledge sharing, standards harmonisation, and mutual recognition agreements that facilitate cross-border trade and reduce technical barriers. Such cooperation strengthens South Africa's position within the region and contributes to a consistent approach to green hydrogen standards across Southern Africa, thereby promoting both local industry and regional market development.

Sustainability certification is another priority, ensuring that hydrogen production meets recognised standards for renewable energy use and carbon footprint reduction. If South Africa were to mandate low-carbon fuels for specific sectors, it would need a robust system to certify hydrogen and its derivatives for sustainability. South Africa's key export markets—particularly the EU, Japan, and South Korea—set the specific requirements and compliance procedures for hydrogen imports. By aligning domestic certification with the expectations of these markets, South Africa can develop relevant capabilities that both support local market needs and facilitate producers' access to international markets.

2. Legal and Regulatory Framework for Hydrogen in South Africa

South Africa has a comprehensive and sophisticated legal and regulatory framework that is broadly appropriate for hydrogen installations. This framework includes a number of legislative instruments that address safety, environmental protection, and compliance with standards. The following elements are particularly important:

- **Occupational Health and Safety Act (OHSA):**
  - **General Machinery Regulation:** The General Machinery Regulations, while not specifically addressing hydrogen use, provide a framework for ensuring machinery safety that can be adapted to hydrogen-related equipment by emphasizing proper design, maintenance, and operation by trained personnel.
  - **Pressure Equipment Regulation (PER):** Requires inspection and testing for hydrogen equipment operating above 0.5 kPa. PER references SANS 347 for risk classification and structural integrity standards while also integrating relevant international standards to ensure comprehensive safety measures.
  - **Major Hazard Installation Regulation (MHIR):** Applies to facilities handling significant volumes of hazardous substances, including hydrogen. MHIR mandates:
    - **Risk Assessments:** Facilities must conduct risk assessments, particularly for fire and explosion risks.
    - **Hazardous Zone Classification:** Requires classification of facility zones based on explosion risk, adhering to SANS 10108 and ATEX standards for equipment in potentially explosive atmospheres.
    - **Emergency Planning:** Requires facilities to establish emergency response plans and coordinate with local emergency services.
- **National Regulator for Compulsory Specifications Act (NRCS Act):** Ensures that hydrogen-related products and systems meet mandatory safety and quality standards.
- **National Road Transportation Act:** Regulates the safe transport of hydrogen, requiring adherence to SANS 1518 for labelling, packaging, and handling hazardous materials.
- **National Environmental Management Act (NEMA):** Requires Environmental Impact Assessments (EIAs) for hydrogen production and storage facilities, focusing on potential environmental risks and mitigation.

- **Mine Health and Safety Act:** Regulates hydrogen safety in mining environments, aligning with standards OHSA for pressurised systems and hazardous classifications.

In South Africa, the responsibilities and obligations of a manufacturer and operator follow a top–down approach as illustrated in Figure 1 below:

Figure 1: Top–Down regulatory approach

Link to Standards: Both the PER and MHIR reference technical standards to detail operational safety requirements. PER relies on **SANS 347** for pressure equipment classification, as well as international standards to establish broader safety guidelines. Similarly, MHIR recognises **SANS 10108** and several international standards for hazardous area classification and explosion protection, blending national and international standards to support regulatory compliance and safe handling of hydrogen. Figure 2 provides an example of the incorporation of standards in the PER under the OHSA.

South Africa has sophisticated statutory requirements for important and interdisciplinary areas such as pressure equipment and major hazard installation, which are relevant for hydrogen technologies as they address hydrogen as a chemical substance or flammable gas. Furthermore, several standards have already been adopted or developed under SABS and been published as SANS Health and Safety Standards / compulsory specifications or as recommended guidelines. This standardisation process in South Africa generally follows the guidelines for good standardisation practice of the World Trade Organization to be aligned with international standards and therefore avoid global trade barriers. While several relevant standards were already adopted and are well established, South Africa lacks hydrogen-specific standards which are mainly based on the several Working Groups (WGs) of ISO/TC 197 on hydrogen technologies (e.g., ISO 22734:2019 - Hydrogen generators using water electrolysis — Industrial, commercial, and residential applications) and IEC/TC 105 on fuel cell technologies (e.g. IEC 62282-2: Fuel cell technologies - Part 2-100: Fuel cell modules – Safety). The discussion and decision on specific adoption of safety-related hydrogen standards should take place under the established SABS/TC 197. South Africa's SABS is an active member in ISO/TC 197 SC1 on sustainability criteria of hydrogen and could extend its participation to the other relevant WGs.

Subsequently, the updates of hydrogen-related standards should be incorporated as Health and Safety Standards (HSS) to make them mandatory under the regulatory framework, e.g., under PERs which requires an update of the respective South African Government Gazette by the responsible department.

A similar gap in standardisation can be identified for compulsory specifications on electrical standards, especially regarding functional safety (e.g., IEC 61511 which is published as SANS series of standards already) and cyber security (e.g., IEC 62443) which should be addressed and effects hydrogen technologies, generally.

South Africa aims to increasingly localise (green) hydrogen activities, which requires deep-dive expert know-how and experience across the hydrogen value chain segments to create and ensure safety of hydrogen technologies, focusing for example on research and development, hydrogen production facilities, municipalities/authorities, workshops, maintenance, and operation staff etc. This present and future demand of specific hydrogen skills is not clearly defined in South Africa yet and should address which skills and qualifications are required.

Conclusion: South Africa's existing regulatory framework provides a solid foundation for hydrogen facilities, drawing on both national and international standards to address safety and regulatory requirements. However, targeted updates to adapt standards specifically for hydrogen technologies would further improve safety and operational consistency, preparing the industry for growth while aligning with international best practice.

Based on the ISO and IEC TCs, but also other international activities, there are hydrogen-specific standards over the entire hydrogen value chain available that should be adopted in South Africa with a special short-term focus on standards related to Green hydrogen and ammonia production and transportation. Other applications such as fuel cells or hydrogen refuelling stations and mobility applications are also important but have a lower short-term market relevance in South Africa.

To ramp-up the local hydrogen market, South Africa requires certain capabilities, from qualified personnel to testing laboratories, which are not fully defined and in place yet.

3. Technical Standards

Technical standards are essential to ensure that the production, storage, and distribution of hydrogen in South Africa meets safety and operational requirements. These standards include both hydrogen-specific and non-hydrogen-specific standards.

Examples of hydrogen-specific standards include:

- ISO 22734:2019: Specifies requirements for hydrogen production by electrolysis, supporting safe and efficient green hydrogen production.
- ISO 19980-1:2020 Provides guidelines for hydrogen refuelling stations, including design, installation, and operational safety.

Examples of non-hydrogen-specific standards:

- SANS 347: Governs the classification and safety of pressure equipment, which applies to pressurised hydrogen storage systems.
- SANS 10108: Outlines requirements for hazardous area classification, relevant to hydrogen storage and production facilities.

Notably, the SABS has adopted certain hydrogen-specific standards as national standards. For example, SANS 62282-4-101 covers fuel cell technologies and SANS 23828: 2010 covers the safety of hydrogen powered vehicles. These standards are steps towards establishing a comprehensive national framework for hydrogen safety and quality in South Africa.

Table 1: summarises hydrogen-specific codes and standards along the hydrogen value chain.

Table 1 Hydrogen specific codes and standards along the value chain (extract):

Value Chain Segment / End Use	South African Regulations	International Standards / Directives	South African approved standards	Comments
Manufacturing & Operation	Pressure Equipment R.; Electrical Installation R.; General Machinery R.; Hazardous Agent R.; Major Hazardous Installation R.; Mine Health and Safety Act R.	2014/34/ EU, 2014/30/ EU, 2014/35/ EU, 2014/69/ EU, 1914/28/ EU, EN 16991, ISO 15848, ISO 15156 ARP 0108, ASME B31.12, ANSI/CSA HVG 2-2014, NFPA 2, CGA-Standards, AS ME VIII, API 580, API 579, API 941, API 934	SANS 10108, SANS 347, SANS 10019, SANS 60079-ff, SANS 61241-ff, SABS 970, SANS 1142, SANS 868, SANS 1654, SANS 10086-ff SANS 808, SANS 1213, SANS 1489-ff, SANS 1515, SANS 1020, SANS 60529, SANS 62262, SANS 50334 SANS 53774	The Department of Employment and Labour or Department of Mineral Resources are responsible.
Storage	Pressure Equipment R.; General Machinery R.	ISO 11625, EN 14470-2, API 1170, API 1171	SANS 10234, SANS 10019	Department of Employment and Labour or Department of Mineral Resources are responsible.
Transportation (dangerous goods by road and rail and pipelines)	National Road Transportation Regulation, Pressure Equipment Regulation	DOT-Standards, 2010/35/EU , ISO 13985:2006, ISO 19881:2018, ISO 16111:2018, ISO 19882, ASME B31.12, API 941	SANS 10228, SANS 10229, SANS 1518, SANS 10260	The Department of Transport (DOT) and Department of Employment and Labour are responsible.

Value Chain Segment / End Use	South African Regulations	International Standards / Directives	South African approved standards	Comments
Mobility (Road Vehicles)	South Africa -Signatories to the UNECE 1958 and 1998 Agreements (UN Regulation No. 134)	UN Regulation No. 134, Global Technical Regulation N°13 (UN GTR 13), EU 2021/535, EC79/2009, CSA/ANSI HGV 3.1-2015, SAE J2601_202005, ISO 21266:2018, ISO 12619:2017, ISO 17268:2020, ISO 19880, SAE J2572_201410	More general standards for vehicles (partially adopted from reference in UN ECE Regulations). SANS 1046, SANS 1051, SANS 1055, SANS 1116, SANS.1550, SANS 20013	Overseen by the Department of Transport (DOT)
Maritime	South African Maritime Safety Authority Regulation (SAMSA)	IMDG-Rules	MS-Documents RG 5905, SANS 10019, SANS 10229	Overseen by the Department of Transport (NRTA), responsible is SA Marine Safety Authority (SAMSA)
Aviation	Civil Aviation Regulations (CAR)	ICAO & IATA Rules	Civil Aviation Regulations (CATS Documents 92 (Dangerous Goods), SANS 10229	Overseen by the Department of Transport (NRTA), responsible is the SA Civil Aviation Authority (SACAA).

Alignment with international standards: South Africa is a member of the World Trade Organisation (WTO); thus, its approach emphasises alignment with international standards to facilitate global trade and cooperation. Through the SABS, which also serves as the Technical Barriers to Trade Enquiry point in the WTO for South Africa, the country participates in the International Organisation for Standardisation (ISO) and the International Electrotechnical Commission (IEC). This alignment allows South Africa to harmonise its national standards with global guidelines, ensuring that hydrogen-related standards meet internationally recognised safety, technical, and quality benchmarks. The SABS's involvement in international standards discussions also ensures that these standards are relevant for adoption as national guidelines, thus simplifying compliance for South African industry in the global marketplace.

Conclusion: Adopting international standards and selectively incorporating them into national standards, as South Africa is doing, reduces barriers to trade and helps establish the country as a reliable partner in the global hydrogen supply chain. Further prioritisation of the adoption of hydrogen-specific standards will enhance South Africa's ability to compete globally and attract international investment.

4. Sustainability Certification

Sustainability certification ensures that hydrogen production meets established renewable energy and emissions criteria and verifies that hydrogen is produced in a manner that meets environmental and sustainability standards. This certification is often influenced by international frameworks and regulations, such as the European Union's Renewable Energy Directive II (RED II), which sets out specific requirements for the production of renewable energy, including hydrogen. Schemes such as CertifHy provide certification models based on RED II, establishing guidelines for tracking the renewable origin and carbon footprint of hydrogen throughout the supply chain.

- **Export certification:** For export markets, importing countries—such as the EU, Japan and South Korea—define the sustainability requirements. Often, these countries only allow authorised organisations within their jurisdiction to conduct sustainability verification, meaning that South Africa's role in export certification is limited. Australia, for example, has made efforts to develop a national certification scheme tailored to export requirements, but has faced challenges in gaining acceptance in target markets. This illustrates the difficulty of gaining recognition for national schemes abroad. Although there are ongoing efforts towards globally harmonised certification, such as **ISO TS 19870** (a technical specification aimed at standardising hydrogen sustainability criteria), a fully unified global certification framework is unlikely to materialise in the short to medium term. Electricity certification can also support sustainability certification for hydrogen, particularly in disaggregated value chains where the environmental credentials of green hydrogen rely on using certified renewable electricity during production by another market actor.
- **Domestic certification:** Establishing a domestic certification framework is essential for South Africa to effectively regulate the role of renewable and low-carbon hydrogen in reducing carbon emissions and achieving its Nationally Determined Contributions (NDCs) under the Paris Agreement. A clear policy and regulatory framework is needed to support the domestic uptake of green hydrogen, including mechanisms such as setting targets for specific industries (e.g., heavy industry, transport, and energy). This framework will help drive domestic demand for green hydrogen, fostering the growth of a local market and accelerating decarbonisation in key sectors.

In addition, by designing the domestic certification framework to be **regionally applicable,** South Africa can facilitate hydrogen trade within the Southern African Development Community (SADC). A regionally compatible certification approach will create consistency across member states, strengthen cross-border cooperation, and support the development of a cohesive green hydrogen economy in Southern

Africa. Harmonisation with international standards of key trading partners—such as the EU, Japan and South Korea—will further facilitate the acceptance of South African hydrogen in these markets and position the country as a trusted hydrogen producer on the global stage.

Box 1: Market requirements of the main hydrogen importing countries.

- **European Union (EU):** The EU market is guided by the Renewable Energy Directive and related Implementing and Delegated Regulations. The European Commission has to date recognized three "voluntary schemes" [add here link to https://energy.ec.europa.eu/topics/renewable-energy/bioenergy/voluntary-schemes_en] (CertifHy[1], ISCC[2] and REDcert[3]) for certification of RFNBOs (Renewable Fuels of Non-Biological Origin). Hydrogen certified as RFNBO needs to meet both greenhouse gas (GHG) emission reduction thresholds as well as renewability criteria.
- **United Kingdom (UK):** The UK's evolving hydrogen strategy emphasises the importance of low-carbon hydrogen standards, focusing on reducing the carbon intensity of hydrogen production in line with broader decarbonisation goals. The UK is developing a certification scheme based on its own low-carbon hydrogen standard, which is likely to align with international frameworks to facilitate trade.
- **Japan:** Japan's Green Growth Strategy prioritises the carbon intensity of hydrogen (GHG emissions). Certification will require application of a well-to-gate approach also for imports and will likely align with internationally accepted methods, such as ISO or IPHE.
- **South Korea:** South Korea's Hydrogen Economy Roadmap introduces a tiered certification system that categorises hydrogen based on GHG emissions, with specific standards for zero-carbon and low-carbon hydrogen. The system is designed to ensure that hydrogen imports meet South Korea's ambitious climate goals, with thresholds for different tiers going as low as 0.8 gCO_2eq/MJ.

Conclusion: Developing a domestic certification framework will enable South Africa to regulate the sustainability of its hydrogen industry in line with national carbon reduction targets. Setting industry-specific targets for green hydrogen deployment can support local market growth. In addition, a certification framework that is compatible within the SADC would expand regional market opportunities and promote a cohesive green hydrogen economy across Southern Africa, advancing both domestic and regional priorities for economic growth and sustainability.

It would also be beneficial for the domestic scheme to be aligned or compatible with the certification schemes of South Africa's major export markets as outlined in Text Box 1, likely to include the EU, to facilitate access to export and domestic markets under similar rules.

1 https://www.certifhy.eu/

2 https://www.iscc-system.org/certification/iscc-certification-schemes/iscc-eu/

3 https://energy.ec.europa.eu/topics/renewable-energy/bioenergy/voluntary-schemes_en

5. Hydrogen Quality Infrastructure

Quality infrastructure (QI) is a comprehensive system of regulations, standards, metrology, testing, inspection, certification, and accreditation that work together to ensure the quality, safety, and compliance of hydrogen production, handling, and use. For hydrogen, QI provides a reliable framework that reduces risk, ensures consistent quality, and supports integration into domestic and international markets by aligning with global best practice.

Key elements of the Hydrogen QI:

- **Metrology:** Metrology involves the accurate measurement of hydrogen purity, flow rates, and energy content, which is essential for safe storage, transport, and use, particularly in applications such as fuel cells and high-pressure systems.
- **Testing and Inspection:** Testing and inspection services assess the safety and reliability of hydrogen equipment and infrastructure, including storage tanks, pipelines, and refuelling stations, to ensure compliance with defined standards, particularly for high-pressure and potentially explosive environments.
- **Certification and accreditation:** Certification verifies that hydrogen-related processes and products meet established standards, while accreditation ensures that certification bodies operate with recognised credibility, which is critical for access to international markets.
- **Standardisation:** Standards define requirements for the safe and efficient production, storage, and use of hydrogen, creating consistency across the hydrogen value chain and facilitating market integration by aligning with international practices.

South Africa's situation: While South Africa's QI system provides a strong foundation, additional attention to hydrogen-specific metrology can improve accuracy in key areas. Strengthening metrology is imperative for promoting coherent and fit-for-purpose regulations and standards as well as aligning them with international standards. The benefits of such an approach increases predictability and reduces compliance costs for producers and thus facilitates international trade.

6. Proposed Short-, Medium-, and Long-Term Priorities

Establishing a structured framework for hydrogen regulations and standards as well as sustainability certification in South Africa will support the country's hydrogen export ambitions, facilitate the decarbonisation of industry and heavy-duty transport, and enable the development of new industrial value chains. A phased approach to implementing these priorities will ensure that South Africa can gradually build a robust hydrogen ecosystem, aligned with both domestic needs and international expectations.

6.1. Short-Term Priorities (Within one year)

Regulations:

- Define personnel qualification requirements for individuals working with hydrogen systems to ensure they have appropriate expertise and experience specific to hydrogen in South Africa.
- Promote transparency and uniformity among regulators by harmonising responsibilities, with significant engagement from the Department of Trade, Industry and Competition (DTIC).

Standards:

- Incorporate hydrogen-specific standards such as ISO 22734 (for hydrogen generators using water electrolysis) and ISO 16110-1 (for hydrogen generators using fuel processing technologies).
- Publish co-branded permitting guidelines for hydrogen installations.

Sustainability Certification:

- Continue efforts within ISO TC197 on sustainability certification.
- Begin engagement with the SADC to discuss regional sustainability standards and a potential certification scheme.
- Continue participation in the ISO/TS 19870:2023 process, applying it as a best practice for hydrogen certification.
- Explore how a CBAM might impact hydrogen exports to the EU, ensuring alignment where necessary.

- Investigate whether South Africa has the relevant institutions in place to provide prospective exporters with the requisite documents they need.
- Publish recommendations on hydrogen sustainability certification developed as part of the GIZ project on RCS and certification implementation.

Other QI:

- Assess whether South Africa has the necessary metrology services for hydrogen production and handling, ensuring that these are adequate and accessible.

6.2. Medium-Term Priorities (Within three years)

Regulations:

- Update applied standards and compulsory specifications under existing regulations, such as the PER and MHIR. This includes specific updates for hydrogen-related equipment such as electrolysers, Type 4 hydrogen containers, and welding standards.

Standards:

- Incorporate additional hydrogen-specific standards from ISO / TC197 and IEC / TC 105, such as ISO 19880-1 (hydrogen refuelling stations) and IEC 62282-2 (fuel cell technology).
- Discuss further standards for functional safety (e.g., ISO 15916 or ANSI/CSA HGV 4.4-2013 for high-pressure hydrogen applications) and cybersecurity (e.g., IEC 62443).
- Continue participation through existing structures in ISO H_2 working groups to stay current with emerging hydrogen standards and best practices.

Sustainability Certification:

- Develop and implement a domestic (or regional) certification framework that includes a policy and regulatory framework with defined goals and obligations.
- Establish a regional certification scheme within SADC, ensuring compatibility for cross-border hydrogen trade.
- ISO/TS 19870:2023 has been adopted as a technical specification in South Africa under SATS 19870. It should be considered for adoption as a national standard in South Africa once it attains full international standard status.
- Ensure that electricity certification aligns with hydrogen certification, supporting requirements for GHG emissions and renewable energy tracking.

Other QI:

- Address any identified gaps in hydrogen metrology.
- Modify or develop testing laboratories to support hydrogen technologies, ensuring the country has adequate infrastructure to verify hydrogen purity, safety, and performance.

6.3. Long-Term Priorities (More than three years)

Regulations:

Develop and implement regulations to support hydrogen applications in maritime and aviation sectors, expanding the regulatory framework to cover a broader range of hydrogen use.

Standards:

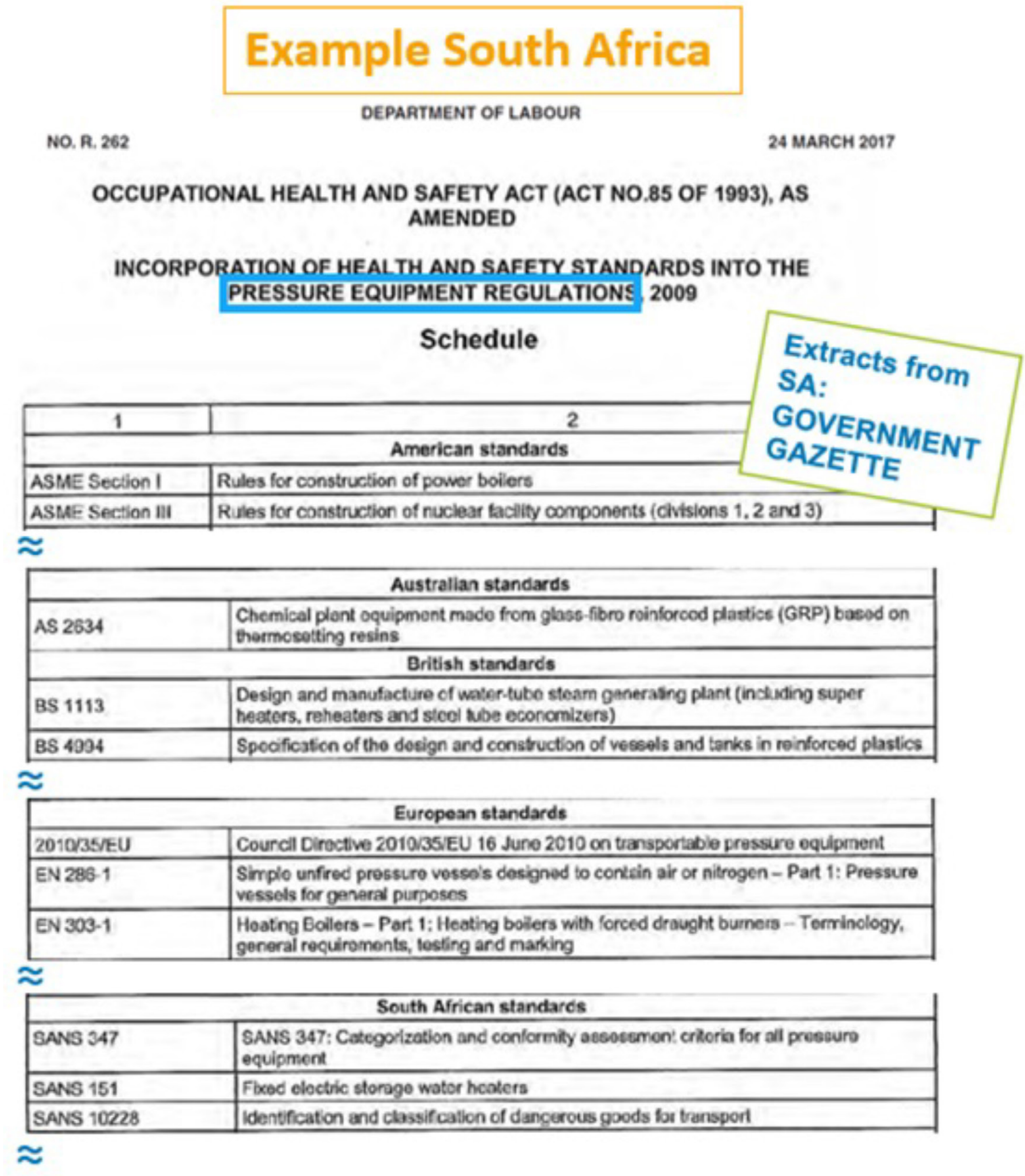
Facilitate regional cooperation on standard development and adoption, continuing discussions under frameworks like the African Organisation for Standardisation (ARSO).

Participate in the ISO/IEC Joint Advisory Group on hydrogen technologies to help coordinate and align hydrogen-related standards across ISO and IEC committees, ensuring comprehensive and harmonised standards that support South Africa's integration into the global hydrogen industry.

Sustainability Certification:

Participate in global efforts to harmonise sustainability certification, supporting the development of internationally recognised frameworks for hydrogen certification.

Appendix A: Example of standards incorporated into a regulation



Example South Africa

DEPARTMENT OF LABOUR

NO. R. 262 — 24 MARCH 2017

OCCUPATIONAL HEALTH AND SAFETY ACT (ACT NO.85 OF 1993), AS AMENDED

INCORPORATION OF HEALTH AND SAFETY STANDARDS INTO THE PRESSURE EQUIPMENT REGULATIONS, 2009

Schedule

Extracts from SA: GOVERNMENT GAZETTE

1	2
	American standards
ASME Section I	Rules for construction of power boilers
ASME Section III	Rules for construction of nuclear facility components (divisions 1, 2 and 3)

≈

	Australian standards
AS 2634	Chemical plant equipment made from glass-fibro reinforced plastics (GRP) based on thermosetting resins
	British standards
BS 1113	Design and manufacture of water-tube steam generating plant (including super heaters, reheaters and steel tube economizers)
BS 4994	Specification of the design and construction of vessels and tanks in reinforced plastics

≈

	European standards
2010/35/EU	Council Directive 2010/35/EU 16 June 2010 on transportable pressure equipment
EN 286-1	Simple unfired pressure vessels designed to contain air or nitrogen – Part 1: Pressure vessels for general purposes
EN 303-1	Heating Boilers – Part 1: Heating boilers with forced draught burners – Terminology, general requirements, testing and marking

≈

	South African standards
SANS 347	SANS 347: Categorization and conformity assessment criteria for all pressure equipment
SANS 151	Fixed electric storage water heaters
SANS 10228	Identification and classification of dangerous goods for transport

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Figure 2: Example of health and safety standards incorporated into the pressure equipment regulation.

Notes