

MEDIA FACTSHEET

Singapore ramps up quality and standards development to give businesses a leg up in green transition

EnterpriseSG, SSC and SAC to develop new international and national standards and accreditation programmes for greenhouse gas reporting, decarbonisation, and renewable energy

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1. Singapore is set to expand its quality and standards development efforts to support businesses in the transition towards more sustainable practices and to access new opportunities in the green economy. In the next 2 to 3 years, businesses can look forward to a slew of new international and Singapore standards and accreditation programmes in areas such as greenhouse gas reporting, decarbonisation and renewable energy. These efforts will be spearheaded by Enterprise Singapore (EnterpriseSG), together with the Singapore Standards Council (SSC) and Singapore Accreditation Council (SAC).
2. At the international-level, Singapore, represented by EnterpriseSG and SSC, is leading the development of an **International Electrotechnical Commission (IEC) standard on the design guidelines and recommendations for floating photovoltaic (PV) power plants**. Expected to be available by end of 2024, the new IEC standard will reference Singapore's Technical Reference (TR) 100¹ to develop standardised guidelines and recommendations for the design and installation of floating photovoltaic power plants and capture more opportunities in harnessing solar energy. By leading the development of this new international standard, Singapore is positioned to be connected and recognised globally as a key player for future technological developments on floating solar PV farms.
3. Singapore is also active in sustainability standards development across 27 international technical committees² at the International Organisation of Standardisation (ISO) and IEC, an increase of 50% since 2019³. Some of the upcoming international standards that are being developed with Singapore's participation include:

¹ Technical Reference (TR) 100 sets out general guidelines and recommendations for the design and installation of floating photovoltaic (PV) power plants.

² These technical committees oversee standards development in multiple areas of sustainability, including energy efficiency, energy management systems, and greenhouse gas management.

³ Singapore was involved in 18 international technical committees prior to 2019.

- New ISO standards to guide companies on greenhouse gas emissions reporting and a new framework to establish carbon neutrality and greenhouse gas reduction strategies.
 - Revised series of IEC standards supporting the testing and safe operations of PV systems.
4. To enhance companies' access to opportunities in the green economy overseas, SAC plans to expand Singapore's international mutual recognition arrangements (MRAs)⁴ in areas such as greenhouse gas validation and verification for the International Civil Aviation Organisation – Carbon Offsetting and Reduction Scheme for International Aviation (ICAO-CORSIA) by end 2023. This will add to the network of MRAs established by SAC with regional and international organisations, which provides Singapore companies with easier market access when they export their products and services to over 100 economies, including China, India, Indonesia, and the United States.
 5. Locally, EnterpriseSG will work with SSC and SAC to introduce and revise more than 25 sustainability-related national standards and accreditation programmes over the next 2 years. These programmes cover a wide range of sustainability capabilities – from standards targeted to accelerate decarbonisation efforts in the energy and maritime sectors, to sector-agnostic standards to help enterprises improve their environmental performance in carbon emissions, energy, water efficiency and material management. Refer to **Annex A** for details on some of the new standards and accreditation programmes in the pipeline.
 6. **Ms Choy Sauw Kook, Director-General (Quality & Excellence), Enterprise Singapore**, said: “Given the global emphasis on sustainability, it is essential for companies to adopt standards and use accredited testing, inspection, and certification services to strengthen sustainability practices, which builds trust and confidence in Singapore’s products and services. EnterpriseSG, together with our national Standards and Accreditation Councils, will continue to elevate Singapore’s participation in sustainability standards and accreditation programme development and adoption at the international level. Locally, we will also roll out standards and accreditation programmes in key emerging areas including

⁴ MRAs are agreements between accreditation bodies (from different economies) to mutually recognise the reports and certificates issued by each other's accredited conformity assessment bodies (CABs) within their scope of accreditation. This ensures consistency and robustness of practices and reduces barriers to trade as it allows goods and services to move freely across borders without the need for further testing, inspection, or certification by the importing country.

renewable energy and decarbonisation over the next few years. These efforts are expected to benefit more than 1,000 companies.”

Standards and accreditation programmes developed to support Singapore’s Green Plan 2030

7. These upcoming developments on the global and local fronts, are part of our ongoing efforts to identify and address Singapore’s needs for sustainability standards and certification, under the key pillars of SG Green Plan 2030. Since the launch of the Plan in February 2021, we have stepped up efforts to develop 35 new sustainability-related standards and accreditation programmes – **over 45% increase from before**⁵. To date, more than 50 SAC-accredited Testing, Inspection and Certification (TIC) companies in Singapore have issued over 1,000 accredited certificates in this area. For a list of companies who have benefitted, please refer to **Annex B**.
8. To help defray some of the costs associated with transiting to more sustainable practices, EnterpriseSG also supports companies with the adoption of sustainability-related standards under the Enterprise Sustainability Programme (ESP). Since the programme was first launched in 2021, EnterpriseSG has supported **more than 70 companies** in adopting sustainability-related standards through the ESP.
9. EnterpriseSG, together with its two Councils, will continue to work with industry stakeholders to study global sustainability trends and develop standards and accreditation programmes to meet industries’ needs. We encourage the business community to tap on the wide range of sustainability-related standards and accreditation programmes to deepen their sustainability capabilities and capture emerging opportunities as Singapore transits to a greener future. Through Singapore’s robust quality & standards infrastructure, companies may benefit by reducing operational cost and risks, strengthening supply chain resilience, and improving productivity and profitability.
10. **Mr Tay Jih-Hsin, Chairman of the Singapore Standards Council, said:** “Standards continue to play an integral role in enabling enterprises to build new sustainability capabilities. The SSC will continue to work in developing standards that support enterprises on their sustainability journey. We will also expand our active participation in

⁵ There were 73 standards and accreditation programmes supporting sustainability prior to Feb 2021 and 108 to date.

international standards committees such as the ISO and IEC to raise the profile of Singapore's sustainability push and connect local companies to more overseas stakeholders."

11. Mr Tan Kai Hoe, Chairman of the Singapore Accreditation Council, said: "Noting the exponential growth in the sustainability landscape, it's essential for companies to continue differentiating themselves to stay competitive. As the national accreditation body, SAC plays an important role in building Singapore's quality and assurance infrastructure to enable robust and consistent adoption of sustainability practices and provide enterprises with the necessary platform to gain a competitive advantage. We continue to pursue initiatives and programmes in existing and emerging sustainability areas, and develop competent testing, inspection and certification players to support the growth of our local businesses."

Annex A: Selected new and upcoming local and international programmes supporting sustainability

Annex B: Selected existing programmes supporting sustainability and examples of companies that have benefitted

Annex C: Background information on standards and accreditation

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About Enterprise Singapore

Enterprise Singapore is the government agency championing enterprise development. We work with committed companies to build capabilities, innovate and internationalise. We also support the growth of Singapore as a hub for global trading and startups and build trust in Singapore's products and services through quality and standards.

Visit www.enterprisesg.gov.sg for more information.

About Singapore Standards Council

The Singapore Standards Council (SSC) facilitates the development, promotion and review of Standards, Technical References and Workshop Agreements in Singapore. This work is done through partnerships with the industry, academia and government organisations, under the national standardisation programme overseen by Enterprise Singapore.

About Singapore Accreditation Council

The Singapore Accreditation Council (SAC) is the national authority for the independent accreditation of conformity assessment bodies that provide services such as testing, calibration, inspection and certification. We also build trust in Singapore's products and services by strengthening Singapore's technical infrastructure for conformity assessments and forging mutual recognition arrangements (MRAs) with our economic partners. These efforts are done under the national accreditation programme overseen by Enterprise Singapore.

Annex A: Examples of upcoming local and international programmes supporting sustainability

Enterprise Singapore, as the national standards and accreditation body, administers the National Standardisation Programme and the National Accreditation Programme for Singapore. Together with our appointed industry-led Singapore Standards Council (SSC) and Singapore Accreditation Council (SAC), we collaborate with key stakeholders from industry and government agencies to support national priorities on sustainability for businesses.

Both locally and abroad, Singapore aims to develop and roll out standards and accreditation programmes to support our local companies in their sustainability journey. Some of these examples include:

- **International Electrotechnical Commission (IEC) standard on the design guidelines and recommendations for floating photovoltaic power plants.** Led by Singapore, the new IEC standard will reference Singapore's Technical Reference (TR) 100 to develop harmonised guidelines to help industry players around the world to standardise the development of floating photovoltaic power plants and capture more opportunities in harnessing solar energy. This new international standard is expected to be available by end of 2024.
- Several **local standards** and **accreditation programmes** are also being developed in the pipeline:
 - A new IEC standard on electrical energy storage (EES) systems will be adopted locally, which supports the integration of power intensive and renewable energy sources. The standard provides requirements on grid integration, performance indicators, monitoring and maintenance of EES systems, which can help businesses optimise the storage of power intensive energy sources and integrate renewable energy sources such as solar power into the grid. This standard is targeted for completion by mid-2024.
 - A series of IEC standards on smart grids will be adopted locally by 2024, which aims to support the integration of digital technologies related to sustainable energy management systems into smart grids, to improve their security, efficiency, and interoperable deployment. The new standards will also support the integration of renewable energies distributed within Singapore's smart grid network. These efforts will allow Singapore to manage and distribute energy using innovative technology safely and efficiently.

- New standards that will assist the decarbonisation and net zero emission targets of harbourcrafts operating in Singapore. Expected to be developed by 2025, these standards aim to standardise the deployment of charging stations in Singapore to ensure compatibility and interoperability. This will ensure that the charging infrastructure in Singapore can support different types of electric harbourcrafts.
- Methanol and ammonia bunkering standard that will cover refuelling, operational and safety requirements for the delivery of methanol and ammonia, guiding the local maritime industry in their transition to sustainable alternative fuels. The standard is planned for 2025.
- Standard on hydrogen refuelling to guide the transportation of hydrogen and operational and safety requirements of refuelling stations. This standard will support companies in their trial of hydrogen fuel cell vehicles and the associated refuelling operations and infrastructure development. The standard is planned for 2025.
- The Clean and Green Urban Farms accreditation programme for aquaculture farms to adopt a sustainable and quality assured system in food production. The programme, which is set to be ready by end of this year, will enable local farms to improve productivity and maximise resource utilisation, while ensuring food safety and quality through best industry practices.

Annex B: Existing programmes supporting sustainability and companies that have leveraged QS to capture emerging opportunities.

EnterpriseSG, SSC and SAC have developed multiple standards and accreditation programmes supporting Singapore's push towards a more sustainable ecosystem. Here are some **existing standards and accreditation programmes** that were rolled out since 2021:

- Revised Technical Reference (TR 25) on electric vehicles charging systems, which guides the safety requirements of EV charging systems and infrastructure across Singapore for companies such as **Schneider Electric**. The revised standard was incorporated into the existing accreditation programme and there are currently 2 SAC-accredited TIC companies (e.g. **Intertek**) who provide a full range of related testing and certification services locally. Please refer to **Annex C** for detailed infographic.
- SS ISO 14064-1, which provides organisations with the principles and requirements for the quantification and reporting of GHG emissions and removals. **Evercomm**, a local climate technology company, streamlines carbon management and reduces the time and effort for data preparation, reporting and optimisation. Their innovative platform NXMap®, which was designed based on the standard, features technology that expedites 3rd party assurance audits, making it more cost-effective and faster than traditional carbon audits. The platform empowers clients to pinpoint greenhouse gas emission hotspots, helping them set and achieve sustainability targets while mitigating climate risks. This not only enables precise and cost-effective carbon emission tracking but also quantifies the organisation's emission intensity metrics.
- Workshop Agreements (WA) 3 & 4 cover guidelines for waste management and carbon emissions in the meetings, incentives, conferences and exhibitions (MICE) industry. The standards support stakeholders in implementing various sustainability strategies including introducing digital customer touchpoints and recycling of staging material. WA 3 was recently referenced by **Informa Markets** during the Food and Hotel Asia – Food & Beverage 2023 event, which prevented approximately 10 tonnes of waste from being produced.
- WA 2 assists bunker fuel stakeholders, such as **Chevron** and **Ocean Network Express**, in specifying marine biofuel specifications acceptable for use and guides storage and handling by recipients. It also covers the quality of marine biofuels, corresponding test methods, and the specifications for testing parameters.
- TIC players **TUV SUD PSB** and **Tembusu Asia** have attained SAC accreditation for the validation and verification of reduction and removal of GHG emissions this year.

Being SAC-accredited allows these CABs to assure their customers that their verification of GHG emissions reporting is in accordance with the necessary standards.

- **EXIM & MFR Enterprise**, who provide specialised equipment and accessories to various industries, had adopted ISO standards on energy management systems and environmental management, to support its implementation of sustainable practices to minimise energy consumption and environmental impacts. These commitments enabled the company to secure new clients both locally and abroad.

Annex C: Background information on standards and accreditation

Singapore Standards, Technical References and Workshop Agreements

Singapore Standards (SSs), Technical References (TRs) and Workshop Agreements (WAs) are in the form of specifications for materials, products, services and systems, codes of practice, requirements for interoperability, methods of test, management systems, guidelines, nomenclatures, etc.

SSs are developed through a multi-stakeholder process. Depending on the complexity of the standard, the duration for SS development is 12-24 months and is reviewed every 5-8 years since they are (last) published. **TRs**, which are typically developed in 12 months, aim to address urgent industry demand and are issued for industry trials over a period of time. Comments received during this trial period are considered when a TR is reviewed. TRs can become SSs after the trial period, continue as TRs for further industry trials, or be withdrawn. **WAs** cater to the urgent market requirements and/or cover emerging areas where there may be a lack of consensus. As a fast-tracked deliverable, Workshop Agreement has a recommended development period of less than 6 months and is based on general agreement among workshop participants. With a shorter validity period (2 years), WAs have more flexibility to cater to evolving industries with changing requirements, specifically in relation to emerging technologies.

To ensure adequate viewpoints are considered in the development and review of SSs, TRs and WAs, committees and working groups set up by the Standards Council consist of representatives from various key stakeholders which include industry associations, professional bodies, academia, government agencies, and companies. SSs are also put up for public comment before publication.

Accreditation

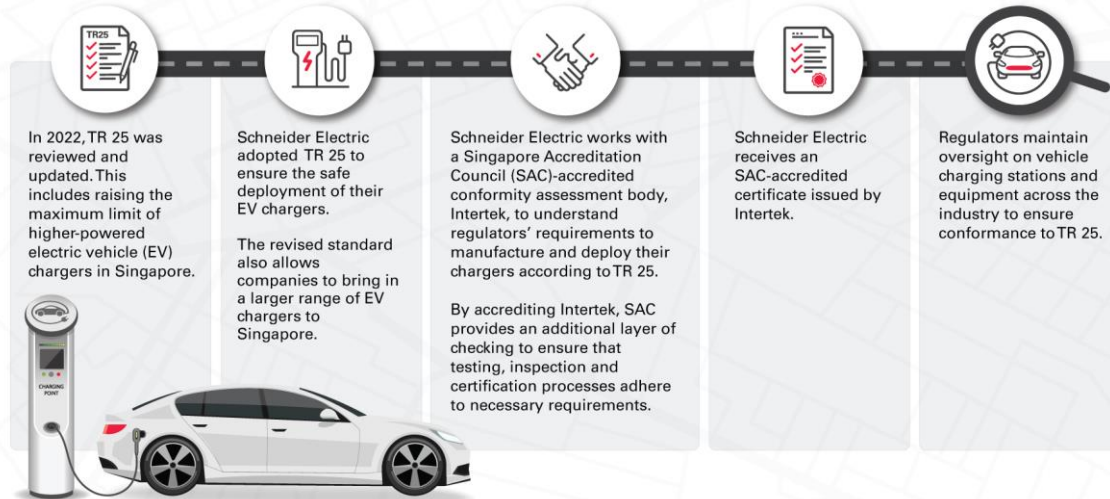
Accreditation, which is often referred to as “checking the checkers”, enhances the credibility of test and inspection reports as well as various types of certificates by providing a reliable third-party assurance that TIC services are conducted professionally to meet globally recognised standards and requirements. These TIC organisations are regularly assessed against relevant international standards to ensure consistency, competency and impartiality in their practices and offered services.

How standards and accreditation work hand in hand

TR 25 : 2022

THE NATIONAL CHARGING STANDARDS

How standards and accreditation work hand-in-hand



Over the years, EnterpriseSG, together with the SSC and the SAC, have established a robust QS infrastructure to help Singapore companies build trust in their products and services locally and internationally. For example, in the development of TR 25, efforts include:

- **Standards development:** The SSC worked with industry stakeholders and government organisations to ensure that TR 25 is reviewed and updated to meet electric vehicle (EV) charging needs for companies such as **Schneider Electric**. In 2010, the standard was developed to ensure the safe design, installation, and operations of EV chargers in Singapore. In 2022, the standard was revised to include the deployment of higher-powered chargers, and battery swapping and recharging services for electric motorcycles. It also allows companies to bring in a wider range of EV chargers to Singapore.
- **Accreditation development:** The SAC develops and implements accreditation programmes to assess that CABs, such as **Intertek**, reliably and consistently verify that the practices adopted by companies like **Schneider Electric**, comply to the recognised standards. Being accredited by SAC provides the additional third-party assurance which ensures that TIC services carried out by the CAB adhere to the necessary requirements. This process strengthens the assurance on the safety and reliability of EV chargers deployed.