

Standards & conformance supporting sustainability in SG

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Outline

- Overview of Enterprise Singapore
- Overview of Singapore Green Plan 2030
- Standards and conformance supporting Singapore Green Plan 2030
- Participation in ISO/IEC

We grow stronger Singapore enterprises



MISSION

Grow stronger Singapore enterprises by building capabilities and accessing global opportunities, thereby creating good jobs for Singaporeans.



VISION

A vibrant economy with globally competitive Singapore enterprises.



Drive enterprise transformation and growth



Strengthen Singapore as a global node for innovation and startups



Develop Singapore as a top global trading hub



Build trust in Singapore products and services

Enterprise Singapore supports Singapore's blueprint for a sustainable future

Achieve net zero emissions by 2050
Long-Term Low Emissions Development Strategy (LEDS)

**Reduce emissions to 60 MtCO₂e in 2030 after
peaking emissions earlier**
2030 Nationally Determined Contribution (NDC)



Energy
reset



Green
economy



Resilient
future



Sustainable
living



City in
nature

Highlight of standards developed supporting Singapore's Green Plan

Energy reset



Solar
Photovoltaic



Data Centre IT
Equipment Under
Tropical Climate



Marine Biofuel

Green economy



Sustainable
MICE- Waste
Management



Greenhouse Gas
Quantification and
Verification



Sustainable Packaging

Resilient future



Clean and Green Urban
Farms – Agriculture &
Aquaculture



Good animal husbandry
practice for layer farms



Solar Reflective Water-
based Coatings

Example of how standards have been used to support national sustainability initiatives

MICE Sustainability Roadmap

- WA 3: Guidelines for waste management
- WA 4: Guidelines for carbon emissions management

- Guides users to **reduce carbon emissions and waste at MICE events** across its entire supply chain.
- Contributes to the **refresh of the industry-led MICE Sustainability Certification**.
- Recently adopted at the **Food Hotel Asia – Food & Beverage 2023**.

Maritime Decarbonisation Blueprint

- TR129 Series: Methanol Bunkering
- TR136: Electric harbour craft (e-HC) charging and battery swap system

- Efforts to **decarbonise the maritime industry**.
- TR129 – Important step towards driving **Singapore's ambitions as a sustainable, multi-fuel bunkering hub**.
- TR136 – Drive **wider e-HC adoption** and new business opportunities in areas such as **charging systems** and **battery technologies**.

Moving forward – Development of national standards supporting national and industry sustainability needs



Hydrogen refuelling stations



Liquid cooling in tropical data centers



Environmental sustainability for organisations



Energy efficiency of IT equipment

Testing, Inspection, Certification (TIC) sector ensures safety, integrity and quality of goods and services across industries

Singapore's Strategic Advantage



SG is well positioned to support national and regional TIC needs, with established and recognized quality infrastructure

Global Demand for TIC



Global consumer consciousness of product quality and safety may drive demand for TIC services

Groom Local Champions



TIC companies with niche competencies and advanced technologies can capture regional opportunities

TIC services supporting the Singapore Green Plan

GROWING SINGAPORE'S GREEN ECONOMY

CARBON SERVICES	LOW-CARBON TECHNOLOGIES	SUSTAINABLE AVIATION & MARITIME	GREEN ENERGY	CIRCULAR ECONOMY & MANAGEMENT	ELECTRIC VEHICLES
<ul style="list-style-type: none">• GHG measurement, reporting, verification• Sustainability report assurance• Carbon credit verification	<ul style="list-style-type: none">• Green building product testing• Building energy audits, lifecycle assessment	<ul style="list-style-type: none">• GHG verification for airlines• Bunker fuel cargo inspection	<ul style="list-style-type: none">• Offshore wind testing & inspection• Biofuels certification• Solar PV testing• Green Data Centre certification	<ul style="list-style-type: none">• Chain of custody certification• Water efficiency labelling• Energy & Environmental management system certification• Environmental testing	<ul style="list-style-type: none">• Testing of electric consumption• Testing & certification of charging systems
	SUSTAINABLE TOURISM	<ul style="list-style-type: none">• MICE sustainability certification	FOOD RESILIENCE	<ul style="list-style-type: none">• Clean & Green Urban Farm certification• Good Agricultural Practice certification	

SAC accreditation schemes supporting the Green Plan

ISO/IEC 17021



Management Systems Certification Bodies

- ISO 50001 Energy Management System
- ISO 14001 Environmental Management System
- ISO 46001 Water Efficiency Management System

ISO/IEC 17065



Product Certification Bodies

- Green Products (Singapore Green Labelling Scheme)
- Programme for Endorsement of Forest Certification (PEFC)
- Water Efficiency Labelling Scheme (WELS)

ISO/IEC 17029



Greenhouse Gas Validation & Verification Bodies (VVBs)

- Greenhouse gas verification to support sustainability reporting (according to ISO 14064-3) and CORSIA*

*Carbon Offsetting and Reduction Scheme for International Aviation

ISO/IEC 17025



Laboratories

- Environmental Testing (including water, paints)
- Electrical Testing (solar PV, electric vehicles)

S&C working hand in hand for safe high-power charging of Electric Vehicles

1

Development of Electric Vehicle charging system standard

ensures the safe charging of electric vehicles

2

Adoption of Electric Vehicle charging system standard

raises awareness and capabilities on standards through education and training

3

Development of SAC accreditation programme for Electric Vehicle charging system standard

provides independent testing and certification to ensure consistent quality and sustainable practices



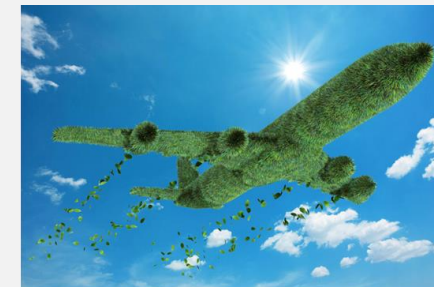
S&C supporting measurement, reporting and verification of greenhouse gas emissions

Development and identical adoption of ISO Greenhouse Gases (GHG) standards



- SG contributed to the development of the ISO 14064 series and ISO 14067.
- Standards have been identically adopted for organisations looking to quantify and reduce GHG emissions to meet customer, investor, or regulatory requirements
- Scheme has been developed to accredit verification bodies through annual audits.

**Case example:
Measurement, reporting,
verification (MRV)
support for the aviation sector's
decarbonization efforts**



1

Aircraft operators (e.g. Singapore Airlines, Scoot) are required to verify CO₂ emissions as part of the CORSIA scheme

2

Aircraft operators engage SAC-accredited verification bodies (VBs) to conduct verification according to SS ISO 14064-3, and other stipulated requirements

Singapore participates in various sustainability-related ISO and IEC Technical Committees (TCs)



Broad-based

- TC 207 Environmental Management (and its SCs)
- TC 301 Energy management and energy savings
- TC 323 Circular Economy

Sector specific

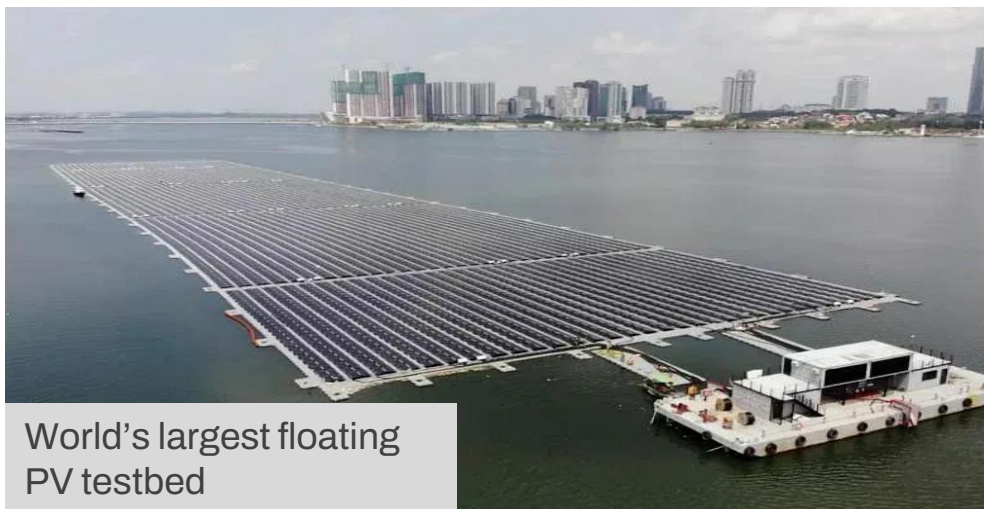
- TC 8/SC 25 Maritime GHG reduction
- TC 197 Hydrogen technologies
- JTC1/SC 39 Sustainability, IT and data centres



Sector specific

- TC 21 & SC 21A Secondary cells and batteries
- TC 82 Solar photovoltaic energy systems
- TC 88 Wind energy generation systems

Singapore is leading the development of IEC Standard on floating PV power plants at IEC TC82



World's largest floating PV testbed



Singapore



- As part of its efforts to reset its energy supply to be more energy sustainable, Singapore plans to quadruple the number of solar energy deployments: 1.5 GW-peak by 2025 and 2.0 GW-peak by 2030
- IEC TS 63496 (under development) is based on Singapore Technical Reference (TR) 100: 2022 on the Design guidelines and recommendations for floating PV power plants
- **Case Study showcased in IEC Climate Action Kit**

Singapore officially became IECQ Member Body in 2024



IEC
Quality Assessment System

- Singapore's membership will support industry with demonstrating product sustainability and increase capabilities of local certification bodies.
- SGS Singapore has been granted provisional acceptance to become Singapore's first IECQ certification body

Note: In addition to IECQ, Singapore also participates in IECEE and IECEX.

Thank you

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For where you're growing

**Enterprise
Singapore**