Solar Hot Water Heaters

太陽能熱水器

AS/NZS 2712

In order to encourage the use of alternative energy sources, the Australian Federal Government provides Renewable Energy Certificates (RECs) for installing solar hot water heaters. The Office of the Renewable Energy Regulator (ORER) manages this program. RECs are allocated based on the efficiency of the solar water heaters compared to traditional heating systems. A solar water heater is typically eligible for 10 to 64 RECs.

為了鼓勵使用替代能源，澳大利亞聯邦政府為安裝太陽能熱水器提供了可再生能源證（Renewable Energy Certificates），並由再生能源辦公室管理。可再生能源證是根據太陽能熱水器與傳統加熱系統比較後得出的效率來分配的，一個太陽能熱水器通常能分配 10 到 64 個可再生能源證。

In order to apply for RECs, the solar water heater must be independently certified to AS/NZS 2712 – Solar and heat pump water heaters – Design and construction. SAI Global is an approved certifier for solar water heaters and our StandardsMark certification will meet the ORER regulatory requirements for RECs.

為了能夠申請可再生能源證，太陽能熱水器必須根據 AS/NZS 2712 標準（太陽能及熱泵熱水器 - 設計與建造）進行認證，而 SAI Global（SAI 全球集團）是已經被認可的此類產品的認證機構，同時我們的 StandardsMark（標準標誌）認證也完全符合再生能源辦公室關於再生能源證的法律法規要求。

Initial Review

概 述

Manufacturers/importers need to review the scope of AS/NZS 2712 to establish if the product designs are covered by the scope, such as:

- Systems up to 700L capacity
- Systems with solar collectors of close coupled and remote tank with collector system(s)
- Flat plate and evacuated tube collectors using primarily metallic absorber plates
- Heat pump systems – air and solar sourced

生產商/進口上需要瞭解 AS/NZS 2712 標準所涵蓋的範圍，比如：

- 最大容量不超過 700 升的系統
- 緊湊型太陽能集熱系統和分體式水箱及集熱器系統
- 使用金屬吸熱片的平板及真空管集熱器
- 熱泵系統 – 空氣與太陽能驅動

Regulatory Requirements

法規要求

Electrically Boosted Water Heaters

電啟動熱水器

If the water heater is electrically boosted and the storage tank is un-vented, it is a “declared article” and must be independently certified to AS/NZS 60335.1 and AS/NZS 60335.2.21. SAI Global is an approved certifier for electrical products and our Electrical Safety Type Examination will meet the electrical regulatory requirements.

如果熱水器是電啟動的，而且為密封儲水罐，那麼該產品為“declared article”中列名的產品，因此必須根據 AS/NZS 60335.1 和 AS/NZS 60335.2.21 標準進行電安全認證。SAI 國際集團是已經被認可的電器產品認證機構，我們的電安全型式試驗完全符合電器安全法規要求。

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Gas Boosted Water Heaters

燃氣啟動熱水器

If the water heater is gas boosted it must be independently certified to AS 4552. SAI Global is an approved certifier for gas appliances and our Gas Safety Certification will meet the gas regulatory requirements.

如果熱水器為燃氣啟動的，那麼這類產品必須根據 AS 4552 標準進行認證。SAI 全球集團是已經被認可的燃氣器具認證機構，我們的燃氣安全認證完全符合燃氣法規 要求。

Plumbing Safety

供水管件安全

If the solar water heater is connected to the water supply, then plumbing regulatory (AS 5200.000) requirements apply for installation purposes. Solar hot water heaters must have independent WaterMark Level 1 certification to AS 3498 - Authorisation requirements for plumbing products – Water heaters and hot-water storage tanks. SAI Global is an approved certifier for plumbing products and our WaterMark certification will meet the plumbing regulatory requirements.

If electrical or gas certification requirements apply, these must be met prior to proceeding with the WaterMark certification.

如果太陽能熱水器是接駁在供水管路中，則需要符合供水管件法規（ATS 5200.000）的要求。太陽能熱水器必須根據 AS 3498 標準進行 Watermark Level 1 認證，認證必須包含熱水器部分和熱水存儲部分。SAI 全球集團是已經被認可供水管件產品安全認證機構，我們的 Watermark 認證完全符合供水管件法規的要求。

SAI Global is the only organisation able to provide StandardsMark, WaterMark, Gas Safety and Electrical approval for your solar hot water heaters.

SAI 全球集團是唯一集 Standardsmark（標準標志）、Watermark（水標誌）、Gas Safety（燃氣安全）和 Electrical Safety (電器安全)於一身的認證機構。

System Performance

系統性能

Thermal Performance

熱性能

A number of standards are referenced for the solar hot water system evaluation in terms of performance against contemporary systems as outlined in the Renewable Energy Certificate Calculation Methodology. The eligibility for RECs is based on performance evaluated against AS/NZS 4234 – Solar water heaters – Domestic and heat pump – Calculation of energy consumption. Further information is available on the Office of the Renewable Energy Regulator (ORER) website: **www.orer.gov.au**

根據現行的再生能源證計算方法中列出的產品及系統， 太陽能熱水系統性能的評估引用了多個相關標準。其 中，再生能源證資格是根據AS/NZS 4234 標準做產品性 能評估的。AS/NZS 4234 標準包含了太陽能熱水器、家 用熱泵和能源消耗的計算。如果需要瞭解更為詳細的信息，請訪問再生能源辦公室網站： **www.orer.gov.au**

No Load System

空載系統

Solar water heater systems are required to demonstrate

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stability and the potential for 'water dumping' during extended periods of no water draw off. A test method has been established for both vented and un-vented systems.

太陽能熱水器在無水的空載情況下必須有保持穩定工作 的能力，並且已經為此建立了相關測試方法（密封系統 和非密封系統）。

Additional Requirements

額外要求

In addition to the regulatory requirements, AS/NZS 2712 has specific materials and performance requirements.

除了法律法規的要求以外，AS/NZS 2712 標準還要求了材料和性能要求。

Collector

集熱器

A number of requirements are called up that deal with the design, materials of construction and performance of the collector. Performance tests evaluate the structural soundness of the collector under normal and abnormal conditions (stagnation). The thermal efficiency of the collector is evaluated (AS 2535.1) and the loss of this efficiency after stagnation.

對於集熱器的設計、材料和性能，該標準制定了相關的 要求。性能測試用來評估集熱器在正常和非正常條件下 的系統牢固性能。集熱器熱效率測試（AS 2535.1）用 來評估集熱器的熱效率以及性能測試以後的熱效率損 失。

Container

儲水罐

The container, where applicable, is generally required to satisfy AS/NZS 4692.1 for the design, materials of construction and performance. This includes a pulsation test to evaluate the ability of the storage container to withstand pressure cycling (250,000 cycles).

在適用的情況下，儲水罐通常需要滿足 AS/NZS 2692.1 標準中關於設計、材料和性能的要求，其中包括用來評估儲水罐承受壓力變化的壓力脈衝試驗（ 250,000 次）。

Heat Pump Modules

熱泵模組

The heat pump module must demonstrate electrical safety compliance with AS/NZS 3350.2.40. The component design must meet AS 1677 requirements.

熱泵模組必須滿足 AS/NZS 3350.2.40 中要求的電安全性能；模組設計必須滿足 AS 1677 的要求。

Application Process

申請流程

Step 1: Companies applying for certification are invited to complete the StandardsMark Application Form and submit it with the application fee to SAI Global. The StandardsMark application form is available via http://www.saiglobal.com/Assurance/ProductCertification/DownloadingDocuments/default.htm

第一步：填寫Standardsmark（標準標誌）申請表並將申請表和申請費一併提交SAI Global。申請表可以通過下面的連結下載：
http://www.saiglobal.com/Assurance/ProductCertification/DownloadingDocuments/default.htm

The application fee is dependent on the manufacturing location, as it includes the initial audit and costs associated with travel, accommodation, audit time and expenses. We will allocate a Client Manager to take you through the certification process.

申請費根據生產地點的不同而有所不同，因為申請費中 包含了初審費用已經與之相關的差旅、住宿等費用。我們將為您指定一個客戶經理來幫助您完成這個過程。

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Step 2: SAI Global provides a client confidential online access via http://standardsmark.saiglobal.com/certifiedproducts/ for the submission of the supporting documentation to the application, such as:

- A complete listing of solar water heater systems within this application (a template is available online for this information).
- A sample bill of materials, assembly drawings of each different solar water heater type and the completion of the data input sheet for each model for system evaluation to AS 4234.
- A Quality Plan Summary of the manufacturing process and indication of audit readiness of the manufacturing site.
- Any previous reports of testing conducted of the solar water heater systems or components.
- Information on any current regulatory approvals i.e. Certificates of Approval or Suitability.

第二步：客戶可以通過SAI國際集團提供的安全鏈結 http://standardsmark.saiglobal.com/certifiedproducts/ 提交申請所需的相關文檔，比如：

- 需要認證的太陽能熱水器系統列表（客戶可以在網站上找到此文檔的範本）。
- 用以生產太陽能熱水器的材料單，不同型號產品的總裝配圖和 AS 4232 要求的完整資料表。
- 生產過程的品質計畫概要（QPS）以及工廠是否已經可以接受的審核的說明。
- 之前所做的關於太陽能熱水器及其組件的測試報告。
- 已經得到的法規方面認可的資訊，比如許可證書或適用證書。

Step 3: The Client Manager will review the submitted documentation and provide feedback on the documentation, the proposed audit dates, testing plan including sample selection, recognised laboratories and the next steps in certification process.

第三步：客戶經理將對提交的文檔進行評估並提供反饋，並同時提供預計的審核日期、測試計畫（包括樣品選擇）、認可實驗室和認證過程的剩餘步驟。

Client will submit a product marking proposal that incorporates the requirements of AS/NZS 2712, the licence number and the StandardsMark logo. The StandardsMark logo and rules on how to display the Mark are available via http://www.saiglobal.com/Assurance/quicklinks/downloadlogos/

客戶需要提交貼標方案，貼標方案需要符合AS/NZS 2712 的要求並包含證書號和StandardsMark（標準標志）的圖示。StandardsMark（標準標誌）圖示的要求和規則可以通過下面的鏈結查詢：http://www.saiglobal.com/Assurance/quicklinks/downloadlogos/

Finalisation: Upon successful completion of the type testing and the factory assessment, a licence is granted to affix the StandardsMark on listed certified compliant products. The certification details will become available on the SAI Global Certified Products Database. The StandardsMark program requires ongoing audits.

完成：當成功完成型式試驗和工廠檢查後，所列出的產品將被允許加貼 StandardsMark（標準標誌）的標誌。認證內容將被加入到 SAI全球集團的已獲得認可產品數據庫中。StandardsMark（標準標誌認證）需要持續的 審核。

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Submission to ORER: On completion of successful certification, the client submits a RECs application.

提交再生能源辦公室：當成功完成認證後，客戶就可以想再生能源辦公室提交再生能源證的申請了。

For more information, please contact SAI at **product@saiglobal.com**

product@saiglobal.com 如需更詳細的資訊，通過 **product@saiglobal.com** 聯

http://www.saiglobal.com/