SA/SNZ TS 61724.2:2020

Technical Specification

Photovoltaic system performance

Part 2: Capacity evaluation method (IEC TS 61724-2:2016, MOD)

SA/SNZ TS 61724.2:2020

This Joint Australian/New Zealand Technical Specification was prepared by Joint Technical Committee EL-042, Renewable Energy Power Supply Systems and Equipment. It was approved on behalf of the Council of Standards Australia on 23 March 2020 and by the New Zealand Standards Executive on 6 March 2020.

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Preface

This Technical Specification was prepared by the Joint Standards Australia/Standards New Zealand Committee EL-042, Renewable Energy Power Supply Systems and Equipment.

The objective of this Technical Specification is to define a procedure for measuring and analysing the power production of a specific photovoltaic system with the goal of evaluating the quality of the PV system performance. The test is intended to be applied during a relatively short time period (a few relatively sunny days). The intent of this document is to specify a framework procedure for comparing the measured power produced against the expected power from a PV system on relatively sunny days.

In this procedure, actual photovoltaic system power produced is measured and compared to the power expected for the observed weather based on the design parameters of the system. The expected power under reference and measured conditions are typically derived from the design parameters that were used to derive the performance target for the plant as agreed to prior to the commencement of the test. For cases when a power model was not developed during the plant design, a simple model that increases transparency is presented in the annexes as a possible approach.

The intent of this document is to specify a framework procedure for comparing the measured power produced against the expected power from a PV system on relatively sunny days. This test procedure is intended for application to grid-connected photovoltaic systems that include at least one inverter and the associated hardware.

The performance of the system is quantified both during times when the inverters are maximum-power-point tracking and during times when the system power is limited by the output capability of the inverter or interconnection limit, reducing the system output relative to what it would have been with an inverter with generation freely following irradiance, where this condition is relevant.

This procedure can be applied to any PV system, including concentrator photovoltaic systems, using the irradiance (direct or global) that is relevant to the performance of the system.

This test procedure was designed and drafted with a primary goal of facilitating the documentation of a performance target, but it can also be used to verify a model, track performance (e.g. degradation) of a system over the course of multiple years, or to document system quality for any other purpose. The terminology has not been generalized to apply to all of these situations, but the intent is to create a methodology that can be used whenever the goal is to verify system performance at a specific reference condition chosen to be a frequently observed condition.

This Technical Specification is an adoption with national modifications, and has been reproduced from, IEC TS 61724-2:2016, *Photovoltaic system performance — Part 2: Capacity evaluation method*. The modifications are additional requirements and are set out in Appendix ZZ, which has been added at the end of the source text.

Appendix ZZ lists the variations to IEC TS 61724-2:2016 for the application of this Technical Specification in Australia and New Zealand.

As this document has been reproduced from an International Technical Specification, the following applies:

(a) In the source text “this part of IEC 61724” should read “this Australian/New Zealand Technical Specification”.

(b) A full point substitutes for a comma when referring to a decimal marker.

Australian or Australian/New Zealand Standards that are identical adoptions of international normative references may be used interchangeably. Refer to the online catalogue for information on specific Standards.

The terms “normative” and “informative” are used in Standards to define the application of the appendices or annexes to which they apply. A “normative” appendix or annex is an integral part of a Standard, whereas an “informative” appendix or annex is only for information and guidance.