Standards Alert

Technical Specification – Solar PV System – Version 3 is now available

This specification establishes the requirements for the assessment, design, installation, commissioning and integration of grid-connected solar PV systems across Sydney Water assets. The updated specification expands the specification to support larger-scale solar installations and introduces a stronger focus on early project assessment, asset integration, operational performance and long-term value for Sydney Water.

Why has the standard been created / updated?

The previous specification was developed primarily for smaller, low-voltage Solar PV systems and did not fully address the requirements associated with larger utility-scale systems now being implemented across Sydney Water. Through the implementation of recent project and stakeholders feedback, opportunities were identified to improve project planning, investment decision-making, integration with existing assets and alignment with current industry practices and regulatory requirements. The updated specification incorporates these learnings and supports Sydney Water's long-term renewable energy objectives.

What are the key requirements / key changes?

Scope and Application

- Expanded the specification scope beyond the previous 100 kW limit to support larger-scale Solar PV systems.
- Introduced requirements suitable for utility-scale Solar PV deployments and future growth of Sydney Water's renewable energy portfolio.

Pre-Design and Feasibility Assessment

- Introduced a new pre-design and feasibility assessment process.
- Established requirements for site assessment, energy yield assessment, grid connection feasibility and project viability assessment.
- Improved the information available to support investment and funding decisions before detailed design commences.

Existing Asset Integration

- Strengthened requirements for integrating Solar PV systems with existing electrical infrastructure and operational requirements.
- Improved consideration of asset interfaces and operational constraints during project development.

Electrical Design and Installation Requirements

- Introduced clearer requirements for AC and DC power cable containment, segregation and installation arrangements.
- Improved equipment selection to align with best-value products currently available in the market and enhanced consistency with Sydney Water electrical infrastructure requirements and current industry practices.

Performance Validation and Documentation

- Enhanced requirements for commissioning, performance validation and project documentation.
- Improved verification of system performance and asset information at project handover aligning with SW Commissioning spec requirements.

What are the key benefits and impacts?

Cost and Time

The updated specification introduces additional effort during the early planning stages of projects through the new feasibility and assessment requirements. However, this is expected to reduce overall project risk, improve project definition and minimise costly design changes later in project delivery.

Examples from recent projects demonstrate:

- Early feasibility assessments help identify site constraints before detailed design commences.
- Standardised assessment requirements improve consistency of project business cases and investment decisions.
- Improved integration requirements reduce redesign and construction rework.

Usability

The updated specification provides a clearer project development pathway from project initiation through commissioning and handover.

For example:

- Structured assessment processes improve consistency across projects.
- Clearer design and installation requirements reduce interpretation differences between designers, reviewers and delivery partners.
- Improved alignment with other Sydney Water specifications supports easier application.

Sustainability

The updated specification supports Sydney Water's renewable energy objectives by improving the assessment, design planning and delivery of Solar PV projects.

For example:

- Energy yield and feasibility assessments help maximise the value of solar investments.
- Expanded scope supports larger Solar PV system installations and future renewable energy initiatives.
- Better project selection improves whole-of-life sustainability outcomes.

Asset Performance and Reliability

The updated specification improves confidence that installed systems will perform as intended throughout their operational life.

For example:

- Improved asset integration requirements support more reliable operation of existing facilities.
- Stronger performance validation requirements provide greater assurance that design outcomes are achieved.
- Enhanced documentation requirements improve long-term asset management and maintenance.

When do I apply the new standard?

When new or updated engineering standards are published, they apply to projects commenced after the publication date. There is no requirement to apply them retrospectively.

Where changes are driven by regulation or other critical risk, they may need to be applied to in-flight projects – that would be a special case with dedicated communication.

Adopting new standards early can be beneficial where they offer streamlined requirements that reduce costs or other benefits. Project managers have the discretion to apply new requirements to in-flight projects where they see benefit. In these circumstances, the Sydney Water Project Manager will issue an instruction.

Where can I find the new standard?

The standard is available on:

- iConnect (for our staff)
- SWDelivery Portal (for our delivery partners)
- Sydney Water website (for public users)

How can I provide feedback?

If you have any feedback on this [standard type], please contact us at standards@sydneywater.com.au.

Please pass this alert onto others that may benefit.