

01 Introduction

Established in 1998, Global Sustainable Energy Solutions (GSES) is a multi-disciplinary renewable energy engineering, training and consultancy company specialising in photovoltaic (PV) systems. GSES has decades of local and global experience undertaking projects in Australia, New Zealand, Asia, Africa and the Pacific Islands..

GSES delivers specialist owner's engineer consultancy services across the Renewable Energy sector in Australia and internationally and offers its proven experience in:

- Feasibility Studies
- Procurement Services
- Quality and Compliance Assessment
- Asset Management Intelligence
- Expert consultancy

GSES works with project developers, equity investors, and debt financiers at each stage of the renewable energy project process. As GSES does not provide system equipment or hardware of any description nor participates in the system construction phases, GSES is therefore able to offer unbiased, independent engineering services at all project stages. Our service pledge is to protect the interests of our clients and to ensure that greatest value is derived from each project.

GSES can act as the Owner's Engineer for each phase of the project development process as well as offer each project phase as separate services to meet the specific needs of the client. Please note that design services are covered in a separate capability statement.

Some of GSES's clients include:

- Local Government Areas
- State government departments
- Federal government departments
- Universities
- Project developers
- Engineering, procurement and construction (EPC) contractors
- Commercial facility management

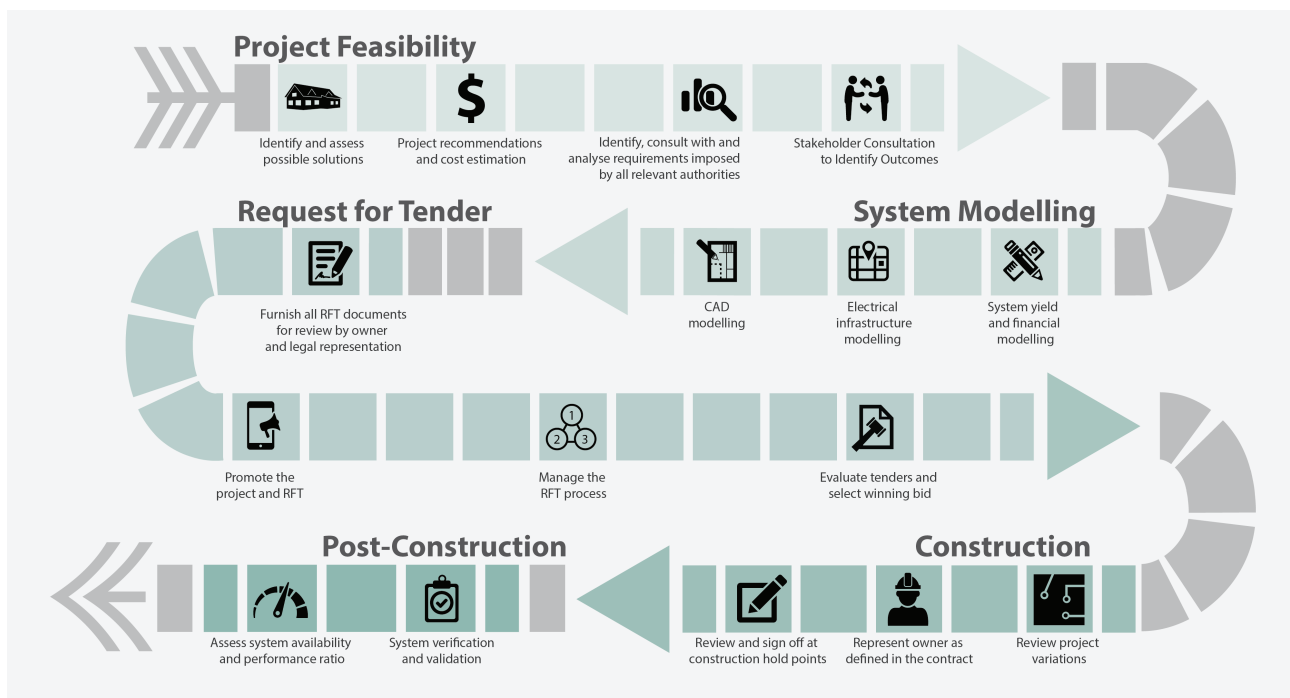


Figure 1: The range of service which GSES can provide throughout the project development process.

02 Feasibility Studies

GSES will identify, consult with and analyse requirements required by all relevant authorities. GSES will liaise with all project stakeholders to identify required project outcomes. Through this process, GSES is able to make the best project recommendations for its clients.

A typical feasibility study will include a desktop assessment as well as a site inspection. The initial desktop survey will consider at minimum site orientation, site access, installation access (such as access to roofs or the array field and switchboards), and solar access considerations (e.g. shading or other obstructions) and relevant tariff structure as the first stage of the decision-making process.

During the site inspection, an interview with the occupant or owner is carried out to check project assumptions and confirm objectives. The site is examined for any constraints not identified in the desktop study.

The feasibility study report will include, at minimum:

- Technical assessment of the suitability of site for the installation of renewable energy systems, identifying any risks and limitations to the installation
- Site specific capacity optimisation and generation modelling
- Walk-through energy efficiency studies (if scoped)
- Financial analysis of return on investment

03 Procurement Services

Due to GSES' involvement in training, design and compliance, GSES has a good understanding of the industry and is well positioned to provide Request for Tender (RFT) document development and Tender Evaluation services for PV projects. GSES ensures that the RFT process is comprehensive, competitive and yields the best results for our clients.

Tender design and technical specification development

GSES can develop a tender design and the technical specification addendum to the RFT which identifies site specific project risks as well as client expectations.

The tender design typically contains details such as the preferred array location, exclusion areas, the preferred point of connection and all risks and opportunities present onsite, however the level of detail can vary with client input.

The technical specifications document ensures that quality products are specified and a high level of workmanship is stipulated.

The final documents ensure the responses are relevant and comparable, streamlining the selection process.

Tender response evaluation services

GSES endeavours to ensure a fair and competitive contractor selection process. Client-specific evaluation criteria and matrices are developed and used to assess the offers from each tenderer in an objective, quantitative, and transparent way. GSES uses evaluation weightings determined in coordination with the client's project requirements as well as sub-criteria where applicable such that scores are determined in a quantitative and granular way.

04 Quality and Compliance Assessment

GSES is highly experienced in design and workmanship assessment of renewable energy power systems, particularly in the field of stand-alone power systems, grid-connected PV systems and battery energy storage systems (BESS). GSES has a national network of certified inspectors which can be used to confirm compliance to international standards, Australian standards, industry guidelines and any site-specific guidelines.

For compliance and acceptance testing for stand-alone and grid-connected power systems, the assessment scope is determined in consultation with the system owner, with the minimum scope ensuring comprehensive compliance validation with applicable standards, industry guidelines and network regulations. The scope can also include any of the following options:

- System Verification against the project contract to ensure the product delivered meets the specification set out therein
- Audit of design documentation to ensure all documents meet the contract specification and the as-built system
- Infrared imaging of a statistically significant sample set of modules and module connectors and of all isolation points
- Performance assessment options as outlined in the next section.

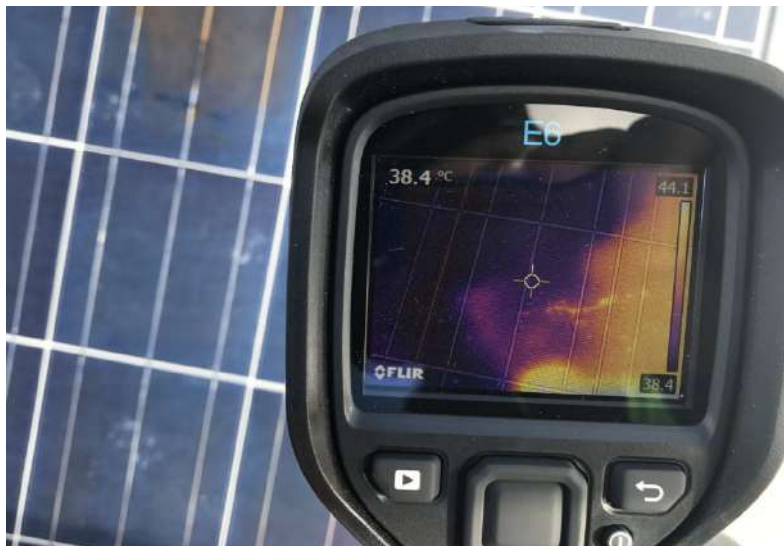


Figure 2: IR camera used to detect hotspots, which may be caused by product defects or poor workmanship

GSES' inspectors can also verify warranty claims on PV modules and inverters. GSES has developed the process for warranty testing and reporting which can be tailored to meet any specific client requirements.

Performance Assessment

GSES has in-house expertise to provide independent assessments of the performance of an installed PV system and/or battery energy storage system. The performance assessment may be used to validate system operation or to diagnose and raise issues for rectification.

The scope is determined by the system owner for their unique circumstances, which may include either a remote desktop assessment and site visit, or just the desktop assessment. A remote desktop performance may include reviewing historic generation data recorded by system monitoring against a power production estimate based on the arrangement of the array and past weather data, or evaluating a BESS's charge and discharge behaviour given the client's operation requirements.

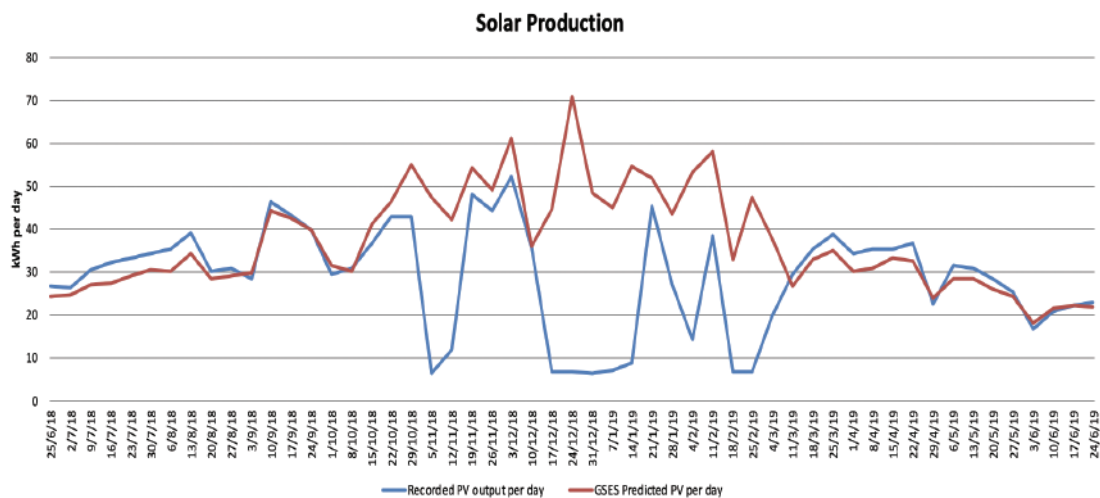


Figure 3: Evaluation of energy yield to identify performance issues

Performance assessment services which require a site visit including:

- I-V curve tracing for all strings in the system
- Infrared imaging of a statistically significant sample set of modules and module connectors and of all isolation points



Figure 4: IV Curve sweep in progress

05 Asset Management Intelligence

GSES provides solar PV asset management services for portfolio owners looking to gain peace of mind that their PV fleet is performing as designed. The core service offered by GSES is to provide intelligence on PV assets from real-time PV data by performing automatic and ongoing PV performance health checks. If there is a loss of performance, the owner is rapidly informed about what the problem is and, most importantly, what the return on investment is to rectify the problem. This is a critical differentiator from the rest of the market, where GSES represent only the interests of the asset owner.

GSES also provide visibility on the fleet's individual PV system health via uncomplicated monthly performance reports as well as access to various performance metrics in a unique, centralised online platform covering their entire portfolio.

GSES Asset Management Intelligence service requires real-time access to inverter data via direct access to data endpoint (e.g. API or FTP access), if the owner can provide this GSES can commence monitoring the owner's fleet for no upfront cost. If this access isn't possible, GSES can offer to install an inverter-agnostic monitoring hardware for an installation fee. The ongoing monitoring service then comes with a low subscription fee which varies with system size.

GSES is currently rolling out the Asset Management Intelligence service for no subscription fee for a limited time only.

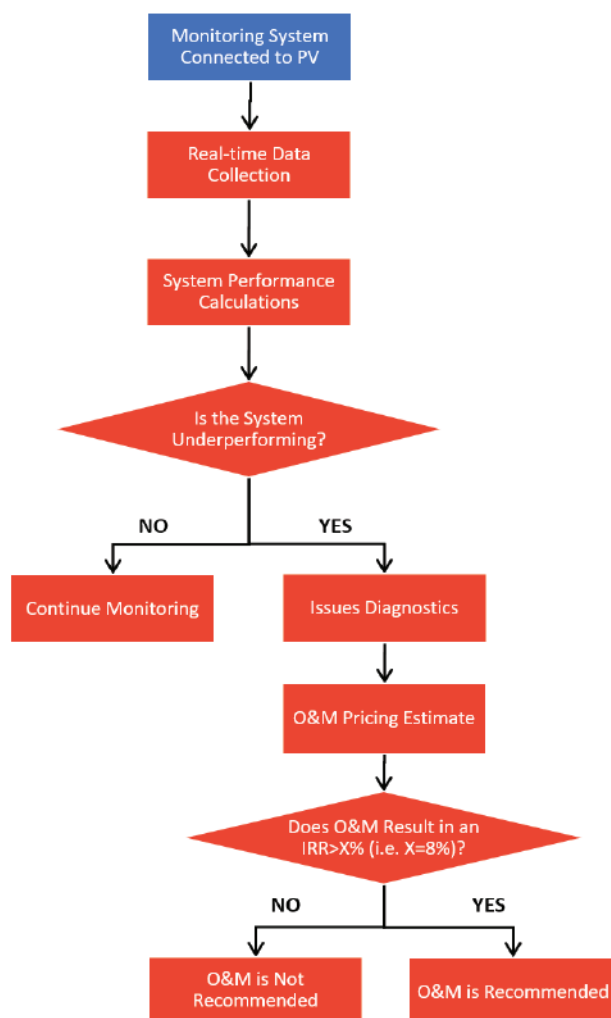


Figure 5: Asset Management Intelligence Flowchart

06 Expert Consultancy

GSES has experience as an expert consultant in the renewable field, particularly in distributed energy generation systems and distributed energy storage systems. As the expert consultant, GSES can:

- Represent client interest as Owner's Engineer during project design, construction and commissioning phases in order to provide quality assurance, variation approvals and program oversight.
- Develop or review client-specific technical guidelines, compliance regimes, and operation and maintenance regimes based on Australian and International Standards and industry best practice.
- Provide impartial expert opinion as expert witness in case of dispute.

GSES continues to be actively involved in the development of the renewable industry both within Australia and abroad. Some of our involvements include:

- Development and review of Australian and International Standards, including the installation guidelines for batteries in grid-connected PV systems.
- Participating in international working groups, with experience working with international Energy Agency (IEA) Photovoltaic Power System Program (PVPS) Task 9 and Task 18.



Figure 6: IEA PVPS Task 18 members in Chile during the IEA Executive Committee (ExCo) meeting held in Santiago de Chile in November 2019.