

Utility scale solar PV projects

These precedent Project and Finance Documents aim to provide a strong base for delivering a solar PV facility from initiation to operation, for developers of all experience levels. They are formulated with the key risks facing solar projects in front of mind, and are sensitive to the needs and risk profiles of developers.

While the detail of the contractual structure will vary from project to project, depending on size, location and parties, these documents encompass the majority of key relationships in the financing and development of a solar facility. In particular, the contractual structure allows for developers to employ a turnkey style solution, outsourcing the majority of construction and operational risk to third party contractors, while at the same time ensuring a secure long-term cash flow through a Power Purchase Agreement.



Overview

Over the past 15 years, Australia's renewable energy market has continued to attract massive interest from developers, contractors, manufacturers, and local and international investors.

Australia has some of the highest average solar radiation per square metre of any continent in the world, some of the highest per capita uptake of residential rooftop solar, and world-leading solar PV technology. Mid-scale and large-scale solar development has, over the last few years, enjoyed a boom and is still attracting large amounts of foreign investment.

Given the continuing cost reductions in solar technology, as well as international and national commitments to renewable energy targets, key drivers now include the increasingly large number of corporates and local government authorities actively seeking to increase their use of renewable energy, creating a substantial demand for a wide range of renewable energy solutions. Furthermore, an increasing number of solar PV facilities are being developed on-site, such as on mine sites, university campuses and retail shopping centres.

Formulated with the key risks facing solar projects in front of mind, and sensitive to the needs and risk profiles of developers, PwC has applied its expertise and experience in renewable energy project finance and project contracting to develop a suite of precedent Project and Finance Documents which facilitate the contracting process for small to mid-scale solar PV facilities.

While the detail of the contractual structure will vary from project to project, depending on the factors including size, location and parties, these documents encompass the majority of key relationships in the financing and development of a solar facility. In particular, the contractual structure allows for the developers to employ a turnkey style solution, outsourcing the majority of construction and operational risk to third party contractors, while at the same time ensuring a secure long-term cash flow through a Power Purchase Agreement. Although the EPC Contract would normally encompass procurement and supply of all equipment including panels and inverters, for completeness (and as is sometimes required by financiers) we have also provided arm's length supply contracts for inverters and panels.



Solar industry snapshot

- Solar energy now costs less than \$30/MWh in many major economies, causing an irreversible energy switch away from fossil fuel plants to cheaper renewable energy.
- Australia's renewable energy target (**RET**) is to ensure that a minimum of 33,000 GWh of Australia's energy is generated by renewable energy by 2020. However, despite a recommendation by the recent Finkel Review to introduce a clean energy target beyond this date, the Federal Government has instead proposed a [National Energy Guarantee](#) (NEG) which has been met with mixed reviews in the market. The Energy Security Board presented its proposal for the initial design of the NEG to the COAG Energy Council on 20 April 2018. It is proposed that the policy will be finalised in August 2018, with the reliability guarantee to become effective by the end of 2019 and the emissions guarantee by the end of 2020.
- In recent years, the implementation of renewable energy targets in a number of Australian states and territories has driven investment and development in medium and large scale solar PV (and wind) projects. These include:
 - ACT – 100% renewable energy by 2020;
 - South Australia – 75% renewable energy by 2025;
 - Victoria – 25% renewable energy by 2020 and 40% by 2025;
 - Queensland – 50% renewable energy by 2030.
- Key measures introduced by the Federal Government from 2012, such as the creation of the clean Energy Finance Corporation (**CEFC**) and the Australian Renewable Energy Agency (**ARENA**) have encouraged institutional investment, and catalysed the development of many large-scale solar PV projects. Although these bodies have been subject to political debate and their roles and focus has shifted somewhat, both have been retained.
- For example, in September 2016, ARENA announced 12 large-scale solar projects with 480MW of capacity which were awarded \$92 million in grants. These include three projects won by French group Neoen located in New South Wales, two from Canadian Solar and further projects located in Queensland, New South Wales and Western Australia. However, it is now widely recognised that large scale solar PV has been commercialised and is viable without Government funding, eg. the 300MW Bungala Solar Project which was co-developed by Reach Solar energy and PwC with no Government funding (except the RET). Therefore it is not expected that ARENA will fund utility-scale solar projects going forward. Section 46 of the CEFC Act has provided credits of \$2 billion each year from 1 July 2013 to 1 July 2017 to the CEFC, totalling \$10 billion.
- The 2011 ACT reverse-auction scheme pioneered by Simon Corbell, former ACT Environment and Climate Change Minister, was instrumental in securing new solar capacity and falling feed-in tariffs in times of ongoing RET uncertainty. The Victoria and Queensland Governments have since followed suit, implementing their own schemes.
- The first auction of the [Victorian Reverse Energy Auction Scheme](#) (VREAS), supporting up to 650MW of new renewable generation, opened in November 2017 with winners expected to be announced in July 2018.

How to use this guide

These notes provide practical guidance in relation to the completion and signing of the Project and Finance Documents. If you have any questions in relation to the terms, refer them to your Legal Department or contact PwC Legal – damian.mcnaair@pwc.com or charlie.grover@pwc.com

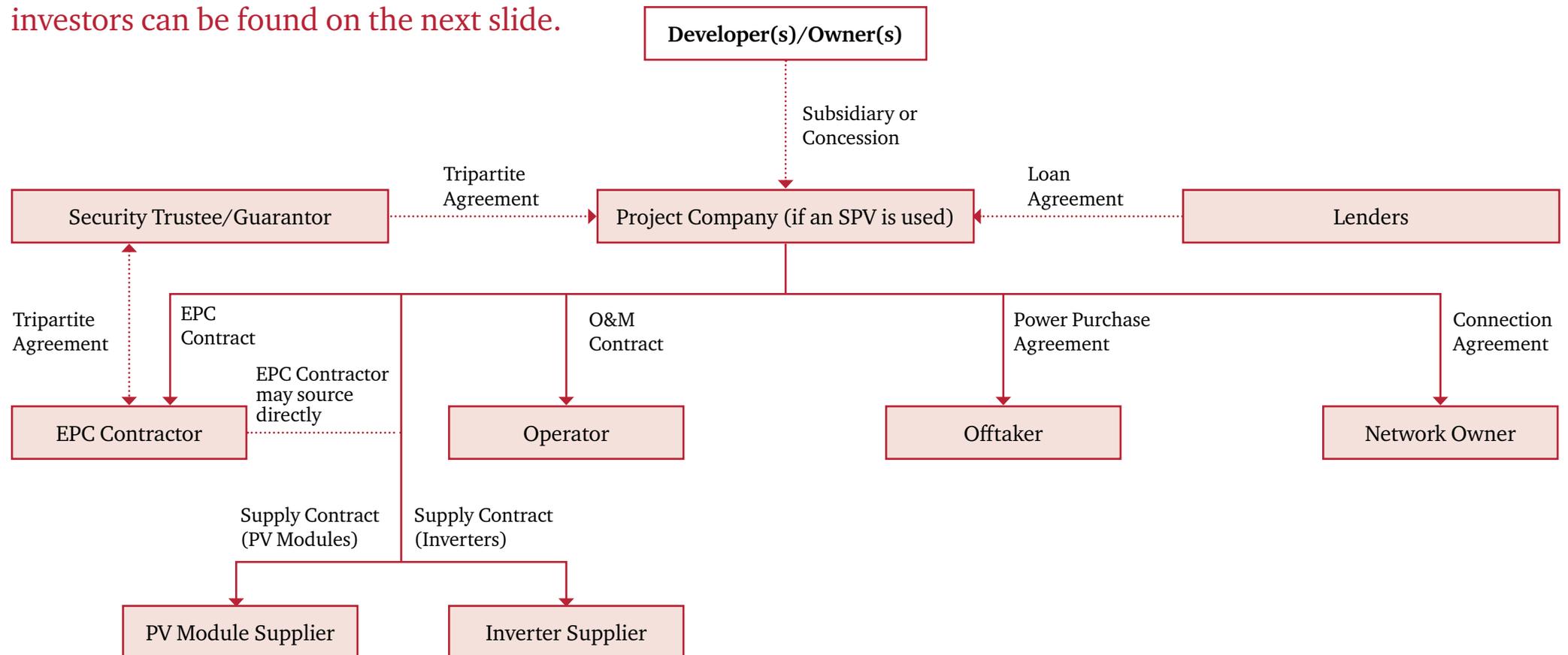
Refer also to the Process Flow Diagram for each contract, on the Contract Documents page.

- **Correct Contract Documents:** Make sure you are referring to and using the correct and up to date version of the Contract Documents.
- **Drafting notes and examples:** Throughout the Project and Finance Documents there are bold, italicised notes in brackets, indicating “drafting notes” or “examples” which are to be deleted prior to distribution to any potential contracting party.
- **Completing the Project and Finance Documents:** These documents require project-specific details to be inserted in the Cover Page and Attachments. Before forwarding the Project or Finance Document to the relevant party, you must complete as many details as possible. The notes in bold, italics and highlighted in yellow in the Project and Finance Documents, including the Attachments, will assist you.
- **Negotiation and Amendment:** If you are negotiating the terms of a Project or Finance Document, you should not amend the General Conditions. If you wish to amend the General Conditions, you must refer any proposed amendments to your Legal Department.
- **Preparing the Project and Finance Documents for signing:** You must ensure that complete copies of the Project or Finance Document are prepared for each party to the relevant document so that each party can retain one original after it is signed by you.
- **Authorisation:** You must ensure that the person who is to sign the Project or Finance Document on your behalf is appropriately authorised to do so (eg. by a board or shareholder resolution authorising that person to sign the document). If you have any doubt as to whether that person has the appropriate authorisation you should refer the matter to your Legal Department.
- **Signing:** The person signing on your behalf need only sign the Project or Finance Document on the signing page. If either party is not an Australian company please consult us on any formalities that may be required for that party.
- **Date of Signing:** Include the date of signing the Project or Finance Document on the cover page of the Project or Finance Document. Parties need not sign at the same time or on the same copy of the document. If the Project or Finance Document is signed on different dates, the date that should be inserted is the date that the last party signed the Project or Finance Document.
- **Storage of Original:** You must retain an original signed by your authorised representative. You should retain a photocopy of the fully executed agreement for your own records.

Project structure

A typical project structure is depicted below and is reflected in the linked precedents. This framework shows parties and the contractual relationships between them.

An alternative project structure flexible enough to facilitate foreign or domestic investors can be found on the next slide.

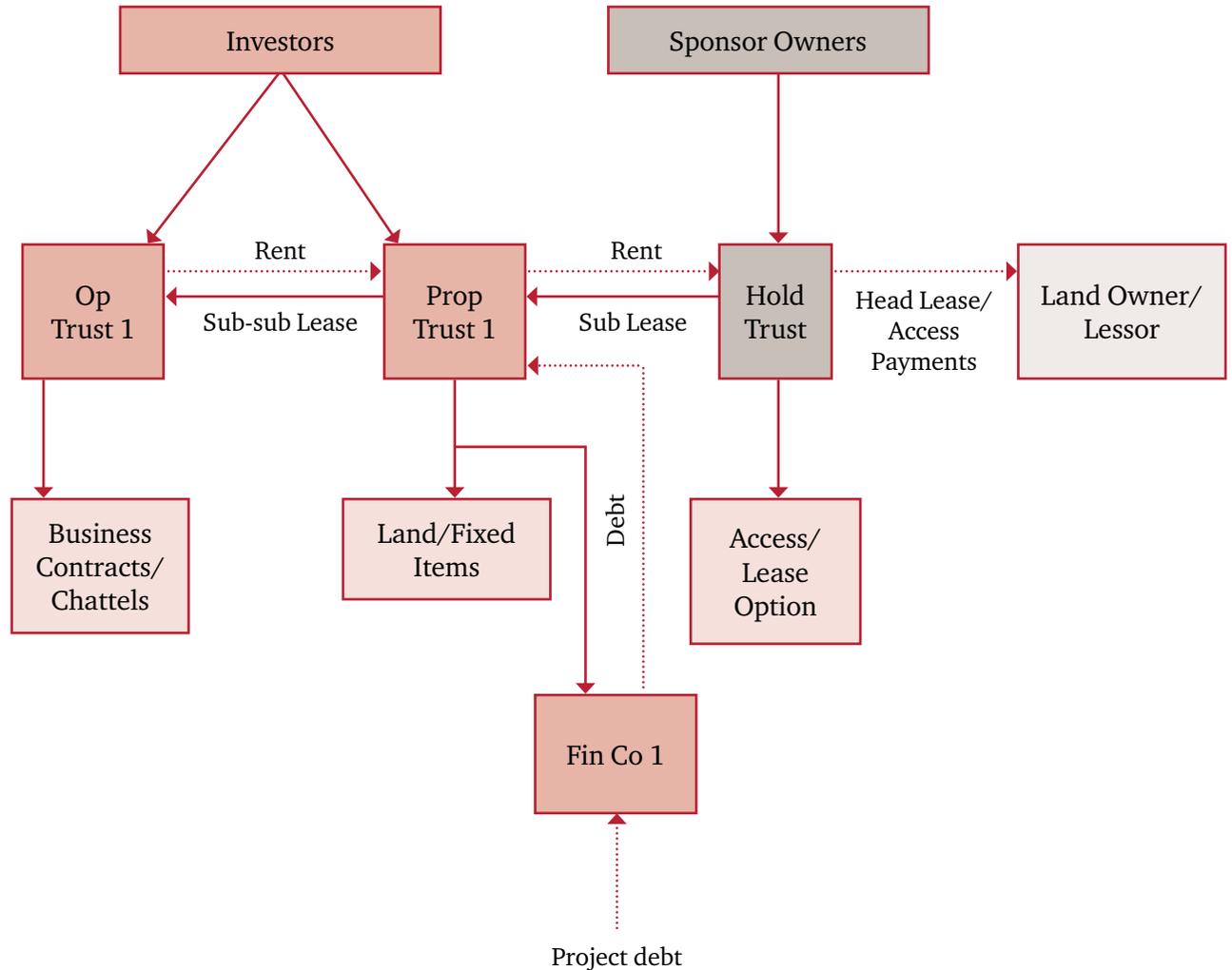


Alternative project structure

- The preferred project structure will depend on the ultimate investor profile. The project structure opposite is flexible enough to facilitate foreign or domestic investors.
- Provides the ability for income to flow through to investors (giving investors immediate access to funds) and be taxed at the investor level (subject to investor profile)
- Able to distribute tax deferred amounts (which could be attributable to non-cash tax deductions such as depreciation). Tax deferred distributions will result in a reduction in the tax cost base of the investors' units.
- Foreign investors may get access to reduced withholding tax (15% compared with 30%), particularly on Prop Trust 1 side.
- Fin Co 1 should be tax neutral due to back to back debt arrangements.
- Banks are familiar with this structure and can access

pre-tax cash flows from the trusts (provided trusts are not “public trading trusts”).

- Nature of investors, assets, operations, and cross staple pricing of the entities need to be carefully managed.
- The ATO has issued a taxpayer alert in relation to stapled structures. Further, Treasury is separately undertaking a consultation process in relation to the current use of stapled structures and potential options for policy change. Accordingly, investors need to be conscious of potential ATO scrutiny or law change that may impact the structure (although at this stage there is no certainty regarding the timing or nature of such changes and how they could impact the structure). The level of risk is likely to vary depending on the investor. For example, foreign investors that benefit from reduced withholding tax rates through this structure may be subject to closer scrutiny by the ATO.





Contract documents

These documents encompass the majority of key relationships in the development of a solar facility.

Power purchase agreement (PPA)

The PPA is designed for use between the developer and the retailer/government authority/buyer, where the buyer undertakes to pay the amount set out in Schedule 2 (Price and Rates).

PPAs are usually issued in standard form by the retailer/government authority/buyer where there are multiple suppliers of renewable energy under an auction or outsourcing scheme. However, the precedent PPA provided is a useful benchmark for the obligations of parties under such an agreement, and is part-suited to quote behind-the-meter projects.

The developer must consider the most appropriate payment structure for the facility, having regard to the commercial aspects of the project. There are two types of payment structures for the PPA:

- Direct payment for electricity produced, on the basis of price per MWh (with potential for an additional tariff to cover fixed generation costs). This is the current structure of payments in the precedent PPA; and

- ‘Take or pay’ arrangements, whereby the local government authority/buyer agrees to pay a fixed amount regardless of what it actually takes. Certain legal requirements must be considered when structuring the type of arrangement, in particular the inclusion of a fixed offtake entitlement (as noted in the Drafting Note to General Condition 7.1 of the Precedent PPA). If this type of arrangement is sought, the contract should be referred to your Legal Department.

The developer should also consider what impact a Feed in Tariff (FIT) and other legislative incentives, such as Renewable Energy Certificates or Large-Scale Generation Certificates (LGCs), would have on the payment structure. Offtakers can offer energy only (black), certificates only (green) or both (bundled).

Simplified sequence of events

Owner identifies need to find a buyer for electricity generated by the solar PV Facility once in operation.

For Utility or Commercial development, relatively less ability for Seller to negotiate, and increasing creditworthiness.

Negotiation of term of PPA

- Usually 10 years minimum (or until the end of the RET)
- May be renewals
- Buyer option to purchase

Negotiation of pricing where appropriate

- PPA contract is a “take and pay” output purchase arrangement
- Consider need for a “carry over provision” in cl 6.1

PPA Execution

- Timing: PPA generally executed first, with other key contracts following as conditions subsequent to effectiveness of PPA (subject to a longstop date)

Interaction with EPC Contract

- Back to back EPC provisions with PPA
- Fixed price – affects PPA pricing
- Guaranteed “Final Completion” date and LDs
- Guaranteed output/capacity and LDs
- Guarantees of performance

Sign contract

Reject quote from Supplier
Recommence process

PPA binding from Effective Date (subject to conditions precedent)

Contract will commence on Commercial Operation Date

Connection Agreement

The Connection Agreement is designed for use when contracting for the connection of the Facility generation equipment into the relevant electricity transmission or distribution network (Network) with either a transmission network service provider company (TNSP), a distribution network service provider company (DNSP), an electrical utility or a small grid owner/operator. The contract will generally govern both the construction and installation of the connection assets, and the long-term provision of services.

As both transmission and distribution networks are run by large-scale utilities with monopolistic control over their respective networks, there is limited scope for negotiation of the individual connection agreements. Each Network Services Provider typically contracts for connection using an internal Standard Form Agreement, (or several agreements) rather than on an individual project basis.

There is no uniform version of a Connection Agreement. Consequently, the precedent Connection Agreement provided as an

example should be taken as a reference point for the types of obligations that form part of a typical Transmission Network Connection Agreement. It has been written as a customer-oriented agreement, and the developer's actual obligations may be more onerous.

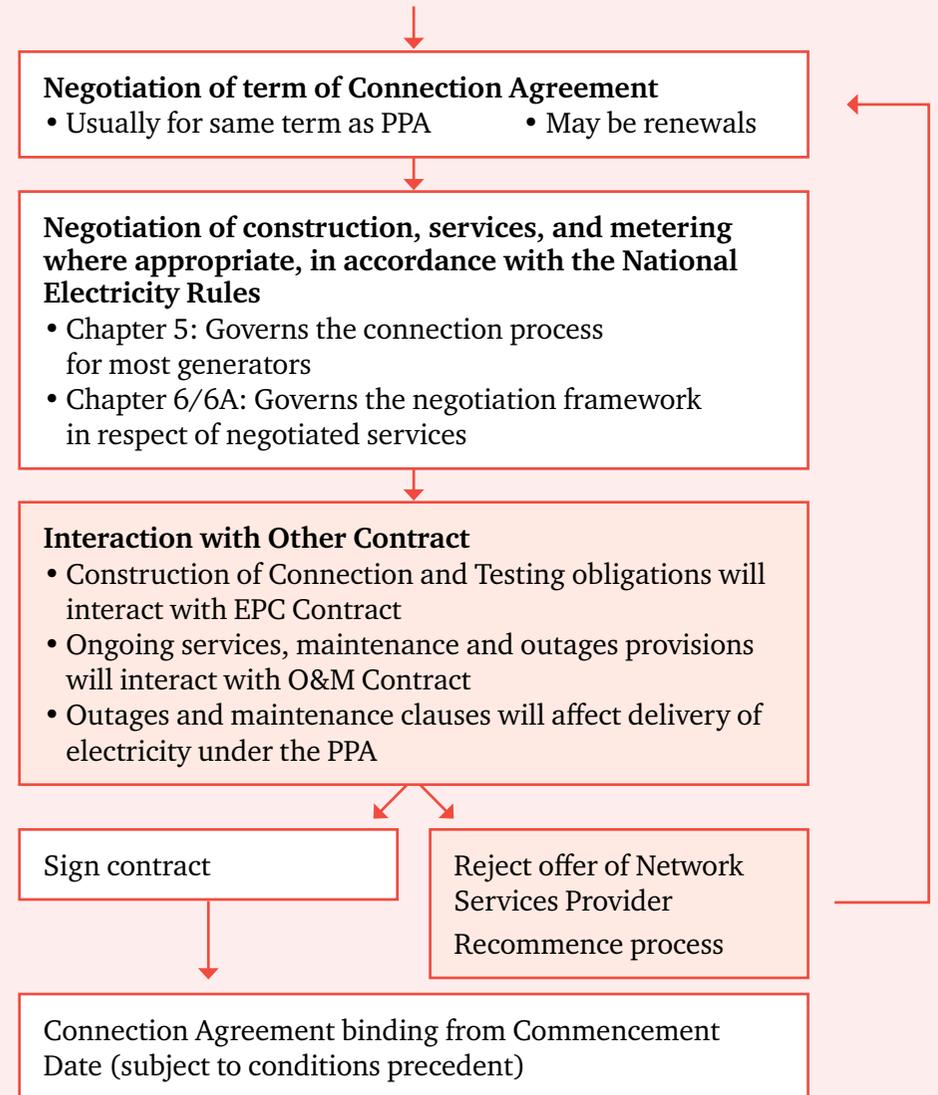
If the connection is to be a captive facility for a single off-taker, such as a small grid owner/operator, the obligations can be incorporated into other agreements. In particular, the construction of the connection assets can be included in the EPC contracts, and maintenance obligations in the O&M contract.

Additionally, the primary obligations for Metering will likely be governed by this agreement (or an ancillary agreement between the Customer and the Network Services Provider). Care should be taken to ensure consistency between the Metering obligations under the Connection Agreement, the EPC Contract, the O&M Contract, and the PPA.

Simplified sequence of events

Owner identifies need to delivery electricity through the Electricity Network once the Solar PV Facility is in operation.

Owner identifies requirements of connection to Transmission Network, Distribution Network, or Single Off-taker (where "Captive").



EPC Contract

The EPC Contract is designed for use when contracting for the design and engineering, procurement of equipment, and execution of work, services and activities for the construction of a solar PV facility.

The EPC Contract includes General Conditions relating to aspects of performance of works, performance guarantees, damages and disputes. Additionally, the developer is protected from occupational health & safety liability through the contracting arrangement.

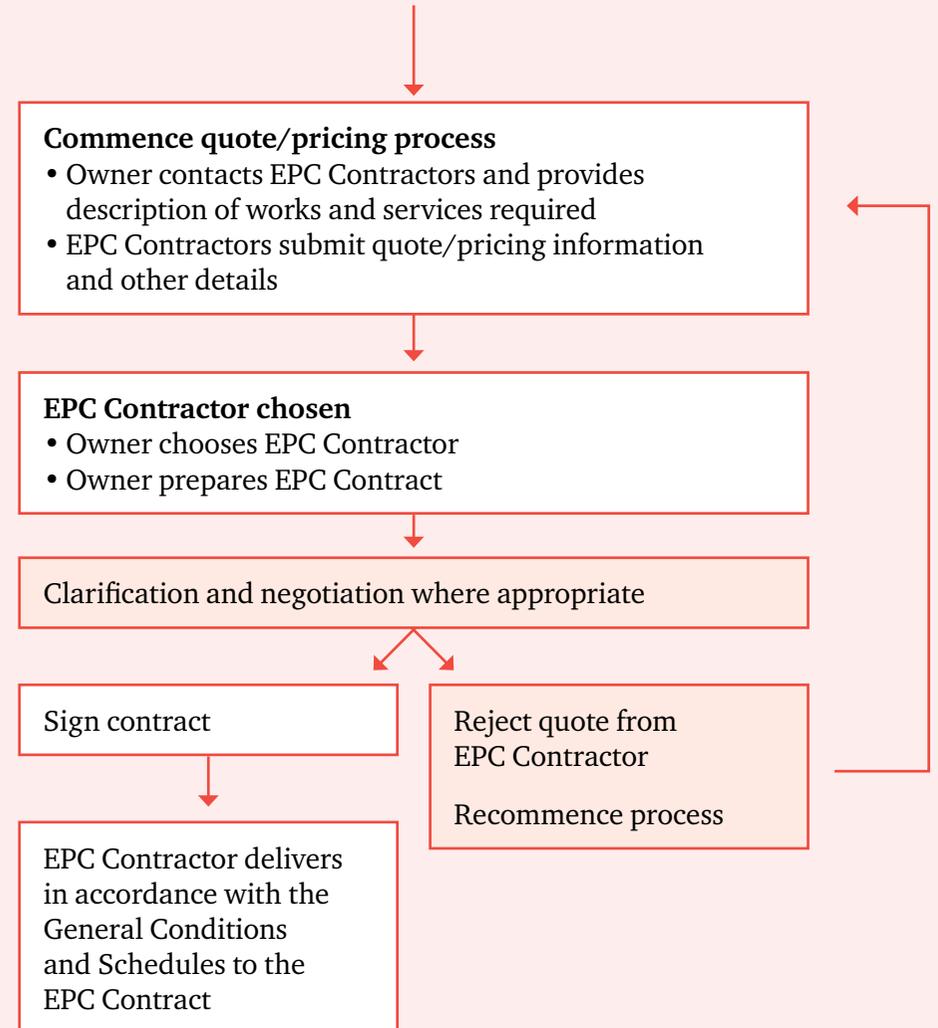
Specifications required by the developer are set out in Schedule 1 to the EPC Contract. Care should be taken to ensure that these are consistent with any testing requirements under the PPA, and with the construction of Connection Assets under the Connection Agreement.

Under the suite of documents provided, contracting for supply of photovoltaic modules and inverters is undertaken directly by the developer. However, supply of this equipment is usually governed by the EPC in a turnkey style arrangement, providing you with a single point of responsibility. This can be incorporated into the specification requirements under Schedule 1.

Substantial protection is provided to the developer under the Precedent EPC Contract, with an option to include a bank guarantee, provision of Performance Guarantees and Performance Liquidated Damages in Schedule 3 (subject to agreement between the parties), and comprehensive insurance requirements.

Simplified sequence of events

Owner identifies need to engage EPC Contractor to design, engineer, procure equipment for and execute work, services and activities for the construction of a solar PV facility.



Supply Contract (Modules)

The Supply Contract (Modules) is designed for use when contracting for the manufacture, supply and delivery of photovoltaic modules, and for the provision of supervisory services at the site during installation. This is generally known as 'free issue' or 'owner supplied' equipment. Note that although free issue of equipment can reduce the overall project costs, care should be taken to ensure the project retains warranties, performance guarantees and bankability before confirming such a structure.

The Supply Contract (Modules) includes General Conditions relating to performance of the Supplier's Activities, damages

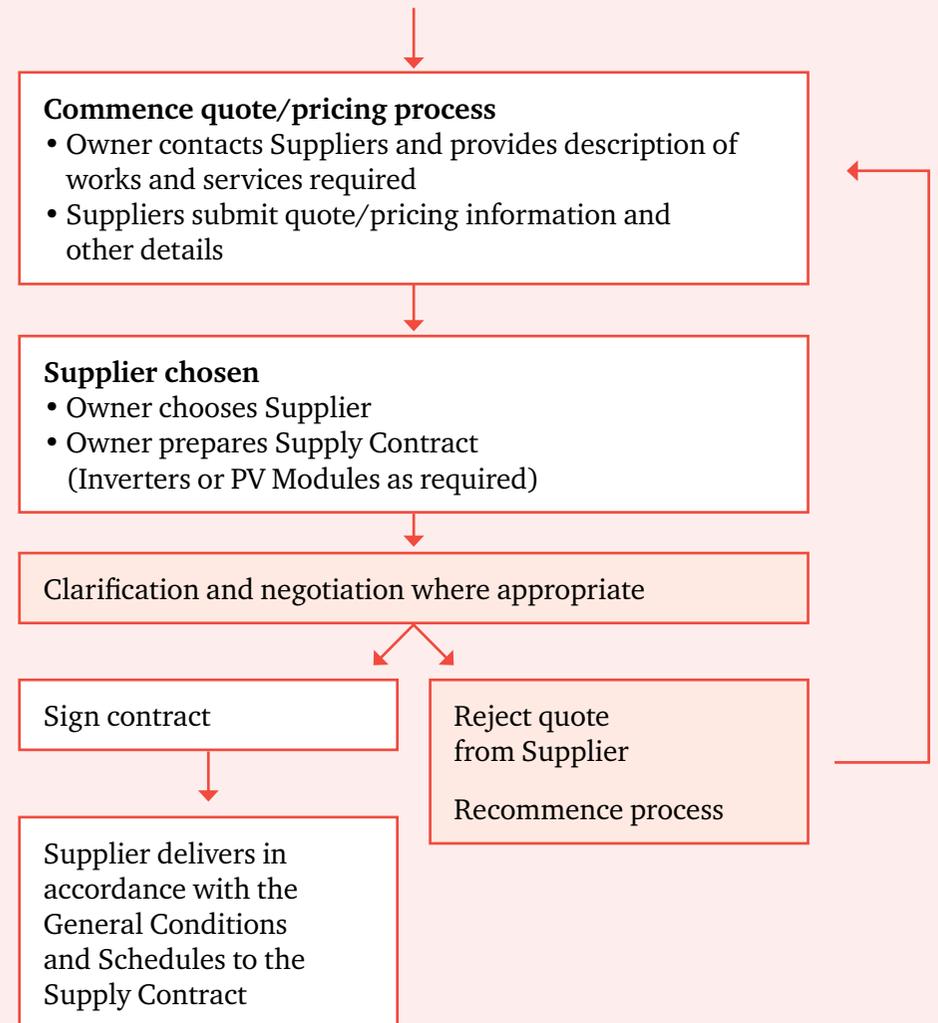
and disputes. Schedule 1 sets out the Supplier's Activities and Schedule 3 sets out the breakdown of price.

The precedent Contract also contains extensive provisions around performance testing obligations, liability for defects, and supplier warranties, designed to provide the developer maximum protection over the life of the agreement.

The developer may wish to outsource its sourcing obligations to the EPC Contractor through Schedule 1 of the EPC Contract, or may wish to free-issue (developer supplied) equipment.

Simplified sequence of events

Owner identifies need to engage supplier of Inverters and Modules for use in a solar PV facility



Supply Contract (Inverters)

The Supply Contract (Inverter) is designed for use when contracting for the manufacture, supply and delivery of inverters, and for the provision of supervisory services at the site during installation. This is generally known as 'free issue' or 'owner supplied' equipment. Note that although free issue of equipment can reduce the overall project costs, care should be taken to ensure the project retains warranties, performance guarantees and bankability before confirming such a structure.

The Supply Contract (Inverters) includes General Conditions relating to performance of Activities, damages and disputes.

Schedule 1 sets out the Supplier's Activities and Schedule 3 sets out the breakdown of price.

The precedent Contract also contains extensive provisions around performance testing obligations, liability for defects, and supplier warranties, designed to provide the developer maximum protection over the life of the agreement.

The developer may wish to outsource its sourcing obligations to the EPC Contractor through Schedule 1 of the EPC Contract.

O&M Contract

The O&M Contract is designed for use when contracting for services relating to the operation and maintenance of a solar PV facility. These will typically be a long-term arrangement subject to renewal.

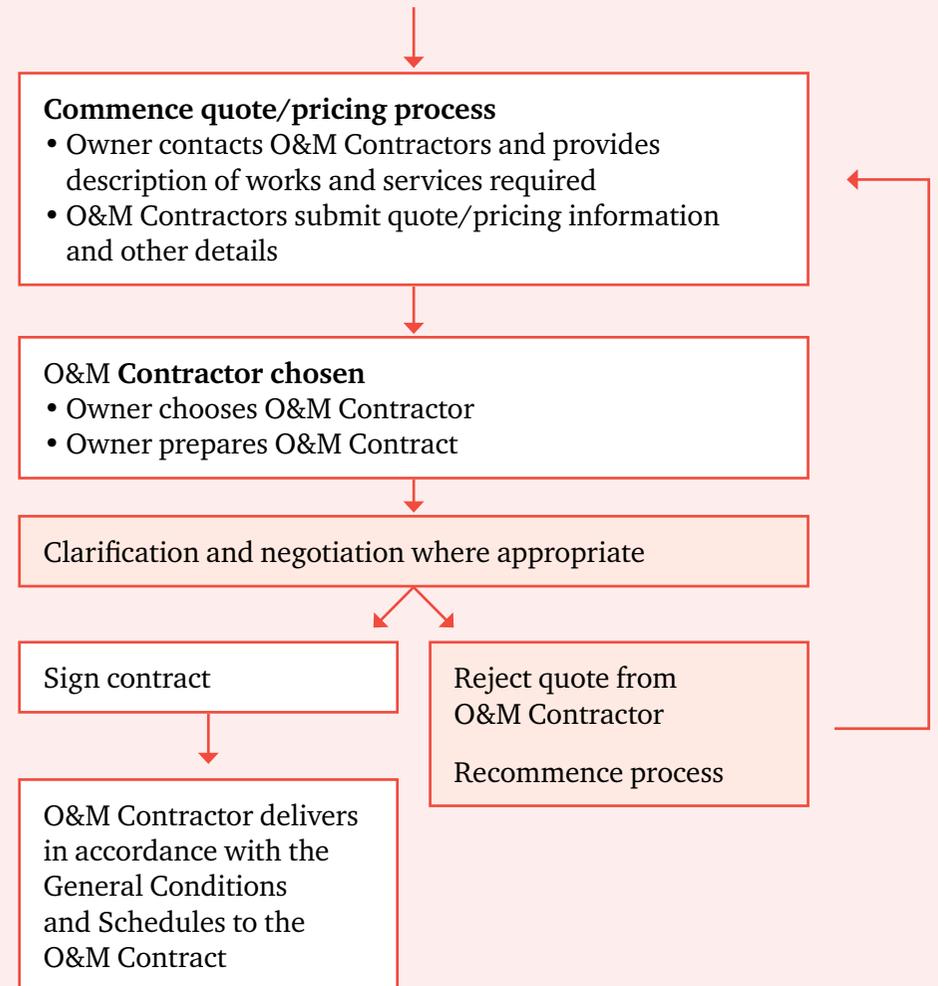
The O&M Contract includes General Conditions relating to aspects of performance of works, damages and disputes. Additionally, the developer is protected from occupational health & safety liability through the contracting arrangement.

Schedule 1 to the O&M Contract sets out in detail the Services you require. This Schedule must provide a comprehensive outline of the responsibilities of the O&M Contractor, and should be sensitive to the obligations of the Owner to both the Off-taker (under the Power Purchase Agreement) and the Network Services Provider (under the Connection Agreement). Schedule 2 sets out the payment terms of the Total Yearly Fee.

The precedent O&M Contract provides substantial protection to the developer, with an option to include a bank guarantee, provision of Performance Guarantees and Performance Liquidated Damages in Schedule 3 (subject to agreement between the parties), and comprehensive insurance requirements.

Simplified sequence of events

Owner identifies need to engage O&M Contractor to operate and maintain the Solar PV Facility.



Tripartite Agreement

The Tripartite Agreement is designed to regulate the relationship of the developer, the Contractor, the Financier and the Guarantor under the EPC Contract.

The Tripartite Agreement includes consents by the parties, and detailed warranties from both the Contractor and Guarantor to the Financier.

Rights of cure, step-in and novation are set out in clause 4. These provide substantial protection for the Financier in respect of any right to suspend or terminate works arising out of the EPC Contract.

Simplified sequence of events

Owner enters EPC Contract with EPC Contractor



Loan agreement

The Loan Agreement is designed for use when the developer wants to obtain external funding for a solar PV facility from a lender.

A Loan Agreement will contain provisions of a corporate loan agreement as well as project-specific clauses determining the basis on which the loan can be drawn and repaid. Revenue from the Power Purchase Agreement pays back the loan debt and generates a return for equity.

We have not included a precedent Loan Agreement as it will always be provided by the lender.

CEFC investment

The development may also be eligible for funding from the Clean Energy Finance Corporation (CEFC).

CEFC takes investment proposals on an ongoing basis which progress through three stages of assessment:

- Preliminary screening: A high-level review of the proposal and its suitability;
- Detailed screening: Identifying the unique and generic risk factors of the project. Detailed investment terms and conditions are in a term sheet; and
- Final capital approval: A review of all due diligence and investment structuring arrangements. Projects are unlikely to proceed through to financial close where key risks have not been properly managed.

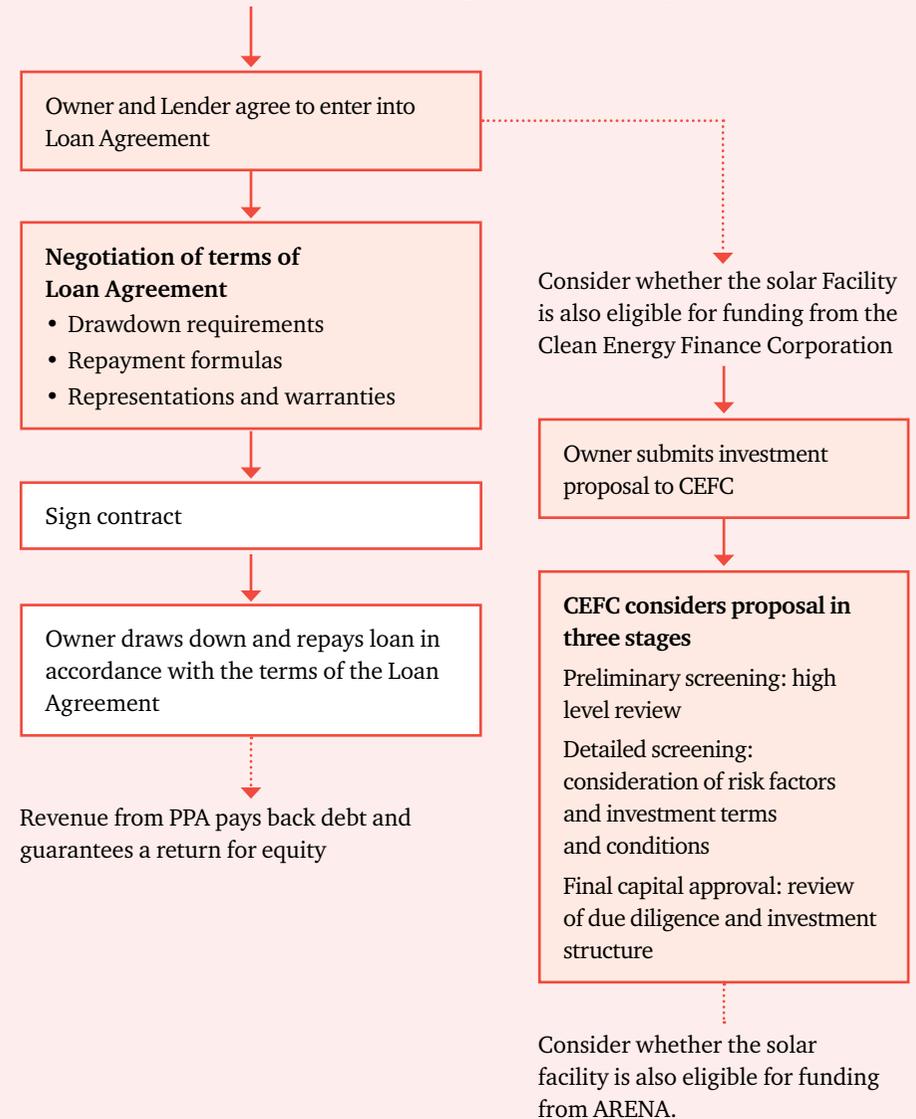
Projects will be screened against a comprehensive range of risk parameters which include investment risks, financial structuring issues and other considerations (emissions intensity, technology, scalability, replicability, enabling other transactions, etc.).

Financial terms

CEFC has a benchmark return of the five-year Australian Government bond rate +3 to +4 per cent per annum. However, this does not mean that funding will be made at the portfolio benchmark return. The actual return sought for an investment will be market-based and risk-adjusted to reflect the project, CEFC expenses and the portfolio benchmark. Finance will be offered on the least generous terms possible for a given project to go ahead.

Simplified sequence of events

Owner identifies a need for external funding for solar PV facility.



Research and development (R&D) tax incentive and government grants

The R&D Tax Incentive is the Australian Government's principal measure to encourage industry investment in Research and Development (R&D) in Australia. It is a broad-based program available to companies from all industry sectors. In addition, there are other government assistance opportunities specifically for the support of private infrastructure investment and other growth and development projects, through various State and Federal grants programs.

Buyers and Project Developers should be aware of these opportunities early to ensure that the agreements and project structure allow for an appropriate company to take advantage of the R&D Tax Incentive for the developmental work being undertaken or to seek assistance through a government grant.

The R&D Tax Incentive provides a Tax Offset to companies that are involved in experimental activities that are carried out to develop or improve products, processes, devices or services. Currently, the benefit for companies with grouped turnover in excess of \$20m is a 38.5% non-refundable tax offset providing a net benefit of 8.5%. For companies with grouped turnover below \$20m, the benefit is a 43.5% refundable tax offset providing a net benefit of 13.5% (if tax payable) or 43.5% (if in a tax loss position).

Key indicators of R&D for tax purposes include the following:

- The project is trying to achieve something that is an advance or different from a technology stand point;
- The project involves experimental stages including design, modelling and testing (inc prototyping and commissioning).

To take advantage of the R&D Tax Incentive, companies must identify the R&D activities as they are commencing and document those activities contemporaneously. At the end of the financial year the company is required to register the activities with AusIndustry so that the benefit can be realised through the company's Income Tax Return.

State and Federal Government Grants may also be available for the project in question or for other growth and development activities that a company is undertaking. These grants are typically provided on a matched funding arrangement and applications should be made early prior to the project being approved and funds being outlaid.

ARENA investment

The development may also be eligible for funding by the Australian Renewable Energy Agency (**ARENA**). Developers should consider whether there is merit in applying for ARENA funding. Funding is guided by factors such as

- whether the project advances renewable energy technologies towards commercial readiness,
- whether the project maximises value for money; and
- ARENA's current investment portfolio.



Due diligence

The Australian solar industry is entering into an acquisitive phase, with large international developers taking an increased interest in purchasing smaller scale solar PV projects. This is largely due to the large amount of projects under development and intense competition making it more difficult to secure a Development Approval, Connection Agreement and (especially) a long-term Power Purchase Agreement from a creditworthy offtaker.

Buyers will want to ensure they know the risks and obligations they are assuming, and project developers should be aware of the legal due diligence requirements surrounding such acquisitions.

The below checklist focuses on the key areas which should form part of any due diligence study. Designed specifically for utility-scale solar PV projects, it covers project documentation, financing and regulatory issues, to enable buyers and sellers to accurately identify risks, obligations and potential issues.



Key issues

Some of the key issues which developers should consider for utility-scale solar PV projects can be found at the link below.

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