



WHITSUNDAY SOLAR FARM – KNOWLEDGE SHARING REPORT – SECURING PROJECT FINANCING

October 2017



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1 INTRODUCTION

1.1 KNOWLEDGE SHARING REPORT: SECURING PROJECT FINANCING

This Knowledge Sharing Report, entitled “Securing Project Financing” has been prepared by Edify Energy Pty Ltd (**Edify**) for and on behalf for Whitsunday Solar Farm Pty Ltd (**WSF**) pursuant to WSF’s obligations under a Funding Agreement with ARENA dated 2 March 2017 (**Funding Agreement**).

1.2 BACKGROUND TO THE WHITSUNDAY SOLAR FARM TRANSACTION

WSF was financed as part of a 198 MWp portfolio financing of three solar farms:

- WSF (69 MWp) (which received ARENA grant funding)
- Hamilton Solar Farm (**HSF**) (69 MWp)
- Gannawarra Solar Farm (**WSF**) (60 MWp)

(together the **Portfolio**).

This was a unique transaction in the ARENA Large Scale Solar funding round. WSF was the only solar farm financed as part of a portfolio financing.

1.3 CAPITAL PROVIDERS

The capital providers to the project were:

1.3.1 Equity

1.3.1.1 Wirsol

The majority equity provider to the Portfolio (with a 94.9% shareholding in Welee Australia Pty Ltd (**Welee Australia**), the holding company for the Portfolio) was the specialist European developer, specialising in photovoltaic systems and wind power plants, Wirsol (wirsol.com.au). The investment in the Portfolio was Wirsol’s first Australian investment.¹

To date Wirsol have reached more than 8,500 customers through consistent investment and competency in photovoltaic and wind power systems. Know-how in engineering, gathered from more than 800MWp of installed power implementing high quality state-of-the-art technology, are the key factors for success.

Installed PV Solar Sites (Historic)

- Germany >380MWp
- United Kingdom >190MWp
- Spain >80MWp
- Italy >50MWp
- Denmark >60MWp
- Netherlands >30MWp
- US / Canada >10MWp

¹ Wirsol’s press release can be found at <https://wirsol.com.au/wirsol-energy-and-edify-energy-complete-landmark-380m-solar-financing-in-australia-wirsol-energy-opens-office-and-registered-entity-in-sydney-australia>

- Other >30MWp

Constructed or Pipeline PV Solar Sites (2018-2020)

- UK ~300MWp
- Australia ~670MWp (inc. of 198MWp Whitsunday / Hamilton / Gannawarra)
- Germany ~50MWp
- France ~30MWp
- Netherlands ~30MWp
- Italy ~30MWp
- Portugal ~200MWp

For more information see wirsol.com / wirsol.co.uk / wirsol.com.au.

1.3.1.2 Edify

Edify retained a minority interest (a 5.1% shareholding in Welee Australia) and provides long-term, fully wrapped asset management services to the Portfolio.²

Edify Energy is taking a leading position in the Australian renewable energy and storage market. Edify has originated and closed the financing of 5 (440 MWp DC) utility scale solar PV projects in Australia. Edify provides development capital to projects, and works with its partners to ensure high quality renewable and storage projects are structured, financed and brought into operation. Edify maintains a minority equity interest in all of its projects and provides long-term asset management services.

Edify Energy's management team has:

- in excess of 120 years collective experience in the power and renewables sectors internationally, across all facets of project development and execution, as well as engineering, legal, tax and accounting
- from a principal perspective, raised and deployed in the order of \$3B of capital bringing over 40 solar and wind projects (800+ MW total) into commercial operation
- advised on over 10 GW (c \$25B) of projects during development, construction and operation
- managed an operational portfolio of more than 1.7 GW of renewable assets internationally, including Australia's largest wind and solar farms.

For more information see edifyenergy.com.

Wirsol and Edify had complementary skills that were brought to bear to execute on this ground-breaking financing.

1.3.2 Debt

The debt providers (in a three-bank club) to the Portfolio were:

- Commonwealth Bank of Australia (CBA)³
- Norddeutsche Landesbank (NordLB)

² Edify's press release can be found at <http://edifyenergy.com/edify-wirsol-solar-financing/>

³ CBA's press release can be found at <https://www.commbank.com.au/guidance/newsroom/CBA-supports-large-scale-solar-farms-in-australia-201703.html?ei=list-view>

- Clean Energy Finance Corporation (CEFC)⁴

(together the **Lenders**).

1.3.3 Grant funding

ARENA provided WSF with up to \$9.5m of grant funding.⁵ WSF also undertook to provide Knowledge Sharing to ARENA in respect of the Portfolio.

1.4 STRUCTURE DIAGRAM

A structure diagram is below in Figure 1.

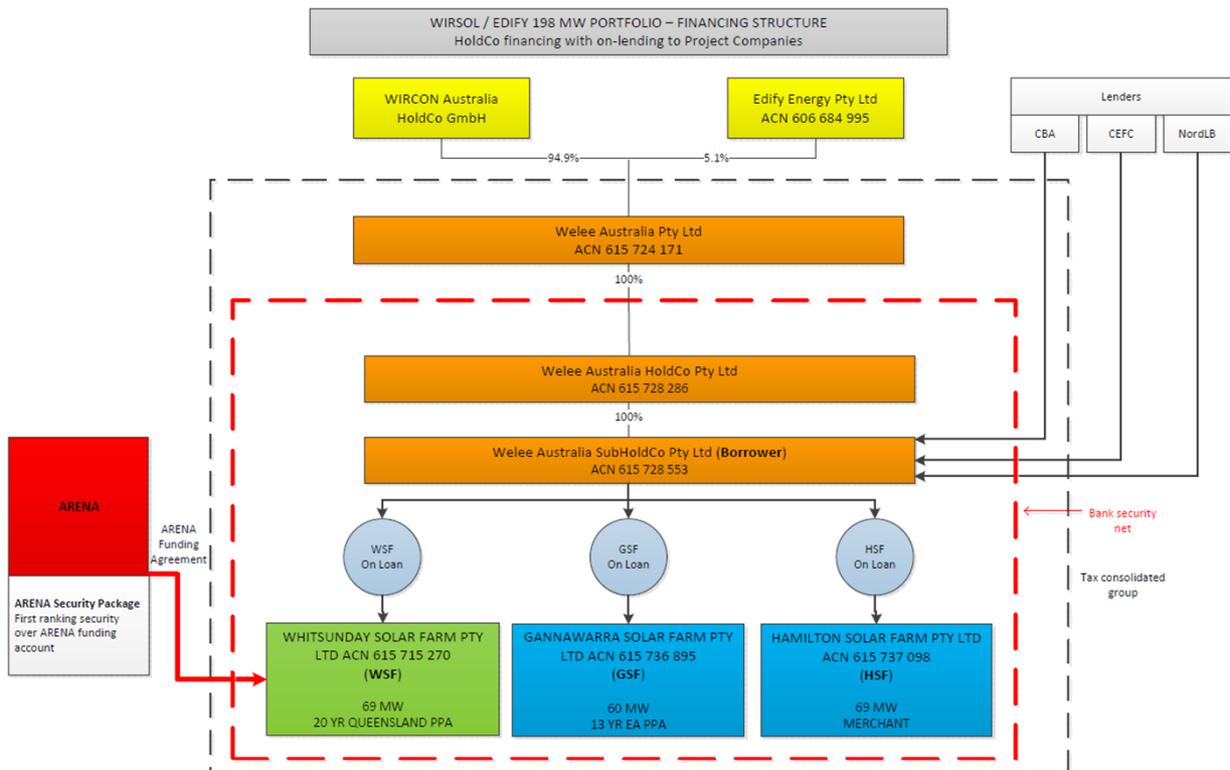


Figure 1 Portfolio Structure Diagram

1.5 CONTRIBUTORS TO THIS REPORT

Edify and Wirsol acknowledge the contributions to this report made by:

Contributor	Role	Lead individual(s)
Elgar Middleton ⁶	Financial adviser to Wirsol and debt adviser to the project.	Yuriy Davidov

⁴ CEFC’s press release can be found at [https://www.cefc.com.au/media/files/cefc-announces-next-wave-of-large-scale-solar-finance,-with-\\$77m-for-projects-in-queensland-and-victoria.aspx](https://www.cefc.com.au/media/files/cefc-announces-next-wave-of-large-scale-solar-finance,-with-$77m-for-projects-in-queensland-and-victoria.aspx)

⁵ See <http://arena.gov.au/funding/programs/advancing-renewables-program/large-scale-solar-photovoltaics-competitive-round/>

⁶ See <https://www.elgarmiddleton.com/>

Norton Rose Fullbright (NRF) ⁷	Legal adviser to Wirsol and the Borrower's legal adviser.	Raymond Lou (equity) and Simon Currie (loan and security documentation)
Ashurst ⁸	Legal adviser to Edify and the Project's Counsel	Ben Warne (equity) Paul Newman (transaction documents, Funding Agreement and due diligence)

1.6 SCOPE OF THIS REPORT

The Funding Agreement requires this report to set out and/or address:

- a summary of the project financing data
- lessons learnt in securing project financing
- criteria, benchmarks, standards, and key project metrics demanded by commercial debt providers
- recommendations to increase the competitiveness and reduce the cost of project financing

Those matters are addressed in sections 2 to 5 respectively below.

2 SUMMARY OF THE PROJECT FINANCING DATA

2.1 FUNDING AGREEMENT REQUIREMENT

The summary project financing data to be provided pursuant to the Funding Agreement is:

- Debt to Equity Ratio: the debt to equity ratio is approximately 2:1, i.e. of the total project costs the Lenders contributed approximately 2/3rd of the capital (excluding GST facilities and bank guarantees required by the Network Service Providers)
- Cost of Finance: the total 'all in' cost of debt was approximately 6 - 6.5%.

2.2 OTHER NOTEWORTHY ASPECTS

We think that the following points in relation to the financing of the Portfolio are noteworthy.

2.2.1 Location and Capacity

As noted above, the Portfolio consisted of three projects – WSF and HSF (totalling 138 MWp in Queensland) and GSF (60 MWp in Victoria).

2.2.2 Limited ARENA funding, with broader knowledge sharing benefits

ARENA provided funding only to WSF, but the Knowledge Sharing requirements encompassed all 3 three projects in the Portfolio.

2.2.3 Different PPA maturities

Each project had a different PPA/offtake agreement:

⁷ See <http://www.nortonrosefulbright.com/au/>

⁸ See <https://www.ashurst.com/>

- WSF entered into a 20-year PPA with the Queensland Government that Edify was successful in securing under the QLD State Solar 150 tender.⁹
- GSF entered into a 13-year PPA with Energy Australia.¹⁰
- HSF entered into a shorter term PPA with ERM Power Retail Pty Ltd.¹¹

The profile of the contracted and merchant revenues over time are shown below in Figure 2.

Evolution of contracted and merchant capacity across Portfolio



Figure 2 Contracted and Merchant revenues in the Portfolio

The Portfolio was the first of a kind in having solar PV assets financed with a blend of contracted and merchant revenues.

2.2.4 Lender club and loan tenor

The club of Lenders and the tenor of the loan was unique in that:

- The club contained one of the leading Australian Lenders (CBA), a leading international Lender (NordLB) and the Australian Government owned Clean Energy Finance Corporation
- The loan maturity was approximately 19 years from Financial Close.
- It was the first time the CBA had lent on such a long-term basis to an Australian renewable energy project, which until today is considered exceptional structuring achievement.
- The project sponsors and the lenders successfully integrated the different requirements of an international lender, domestic commercial lender and CEFC into the same structure.

2.2.5 Structural elements

The structural elements and enhancements in the loan documentation and Funding Agreement included:

- Portfolio testing of debt service and default ratios to leverage contracted capacity

⁹ <http://statements.qld.gov.au/Statement/2016/10/24/solar-farm-brings-renewable-energy-and-200-jobs-to-the-whitsundays>

¹⁰ <https://www.energyaustralia.com.au/about-us/media/news/energyaustralia-underpin-victorias-first-commercial-solar-farm>

¹¹ <https://www.ermpower.com.au/erm-power-underpins-construction-queensland-solar-farm/>

- Debt Service Cover Ratio (**DSRC**) lock-up levels linked to percentage of contracted capacity
- Transaction tailored build up profile of Debt Service Reserve Account (**DSRA**) balances and a corresponding release mechanism linked to the percentage of contracted capacity
- Adopting international “best practice” e.g. equity cure mechanics. Specifically, equity cure revenues considered for covenant testing can significantly reduce the required equity insertion and has a less penalising effect on equity. In addition, general synchronisation with international market standard reduces received “local market premium” (reducing target IRR) for Sponsors when they are performing a home market to Australian market documentation review.
- Debt sizing and sensitivities including both power price forecasts and Lender’s minimum break-even price levels
- Risk based Facility pricing
- Majority Lender decision in specific cases
- Application of ARENA funds to contingency payments and cost overruns

3 LESSONS LEARNT IN SECURING PROJECT FINANCING

We have set out our lessons in securing project financing into the following three categories:

- Preparation and process related matters
- Commercial matters
- Financing uncontracted revenues

Our key lessons learnt are below.

3.1 PREPARATION AND PROCESS

If you fail to prepare, prepare to fail. Preparation and having an overall strategy is a key to securing project financing.

3.1.1 Structure to be Sponsor lead

Financing structures proposed by Lenders should follow Sponsor’s strategic preferences (including the Sponsor’s hold/exit timeframes and strategy) and risk appetite, not the other way around. It is important for Sponsors to have identified early the ‘go/no go’ parameters. These then shape the Sponsor prepared term sheet for the lenders which sets out the overall transaction structure and risk allocation.

It is essential that there is a “meeting of minds” with lenders on all major structural parameters (documented in a term sheet) before long form loan agreements are prepared.

3.1.2 There is value in a financial adviser

Non-recourse project financing of fixed life renewable energy (depreciating) assets is one of the purest forms for debt finance – it is cash flow lending. Appoint a seasoned and experienced commercial manager/financial adviser to manage and structure the financing process. As well as providing a dedicated resource, it also reduces the information asymmetry between lender and borrower, which leads to improved lending terms.

3.1.3 Adopt the keep it simple (KIS) principle

Seeking to implement non-standardised solutions in the project finance market is a time intensive process and if underestimated could lead to significant delays, increased costs and value destruction.

3.1.4 ARENA integration with lenders

Where there is ARENA funding and debt funding, a plan for the integration of the ARENA funding requirements to the Projects vis a vis the lenders funding requirements needs to be well co-ordinated to achieve Financial Close. This is more critical where the financing is a portfolio basis but the ARENA funding is limited to one of the projects in the portfolio. Essentially the requirements are not aligned and it means that a more complex regime to differentiate between obligations that only apply at a project level. It also means in terms of "sign off" of project documents and satisfaction of conditions precedent that the different expectations of ARENA and the Project Financiers need to be carefully managed so to avoid duplication or inconsistent/contradictory requirements.

3.2 COMMERCIAL MATTERS

3.2.1 Early engagement and presentation

Consistent with our comments in paragraph 3.1.1 above, it is imperative to have an early presentation of the loan structure to the lenders to identify the commercial (predominately risk based) sensitivities. Be prepared for multiple iterations/discussions of risk allocation to optimise the risk position of both borrower and lender.

Portfolio financings with a pool of lenders is by necessity a two-way process.

3.2.2 Early engagement of lender's credit teams

We strongly prefer the lenders to engage with their credit teams from very early on in the process and throughout the preparation of long form documents. A credit confirmed term sheet is essential for us before commencing the preparation of long form documents.

3.2.3 N-1 structure

From a borrower perspective, it is preferable to run the debt financing process on a N-1 basis, with each lender having credit approval to fund the transaction without one lender in the club. While there are pros and cons to this approach, in our opinion on balance the pros outweigh the cons and add significantly reduced deliverability risk.

3.2.4 Understand international precedents

Although the majority of standards and practices in the Australian debt financing market do align with international standards and practices there is still a number of structural misalignment. We have touched on some of them in section 4.4 below. It is very beneficial for Borrowers to understand both international and domestic norms in project financing of renewable energy assets.

3.2.5 Innovative structures

Innovative structures can act as a catalyst for future transactions and drive investment in Australia, by establishing a more balanced risk sharing position between stakeholders

The Portfolio financing including WSF created a precedent in the market. We have seen a number of those precedents used in the recent 240 MWp financing of the Hayman and Daydream solar farms adjacent to the Whitsunday and Hamilton solar farm as well as transactions currently seeking senior debt funding.

The market will need to continue to evolve to keep up with the pace at which the renewable energy market is changing, including for example in the combination of battery/storage devices with renewable energy generation.

3.3 FINANCING UNCONTRACTED REVENUES

Approximately 1/3rd of its revenues of the Portfolio were uncontracted, meaning we needed to deal with a number of matters relating to 'merchant revenues'. Any tightening of the long-tenor PPA market will make these issues more acute until a point of "non-bankability" is reached.

3.3.1 Innovative structures

Different amounts of merchant exposure require different mitigants. There is no one size fits all model for merchant exposure solutions. Rather a dynamic risk assessment and innovative structuring/risk allocation should be expected from the leading lenders to address the challenges such merchant exposure present.

The market requires innovative structures (e.g. different loan sculpting, repayment mechanics, structural enhancement) and must learn lessons from more mature markets where projects are financed with long term debt and short term PPAs.

Given that each Sponsor will have different investment strategies and the low availability of repeatable offtake strategies, this market does not allow for a high level of funding solution standardisation.

4 COMMERCIAL DEBT PROVIDERS REQUIREMENTS

Below are some of the criteria, benchmarks, standards, and key project metrics demanded by commercial debt providers:

4.1 CONTRACTED REVENUES

Typically Lenders prefer (or require) a high percentage of contracted capacity/cash flows, particularly when tenor of the loan is long term.

4.2 PPA OFF-TAKER

Lenders require the following of a PPA/Oftake counterparty:

- Investment grade credit rating of PPA Counterparty
- Parent Company Guarantee
- Credit support in the event of a below investment grade credit rating
- Events of default where the Sponsor cannot cure the position
- Review Event in case of downgrade of Counterparty

4.3 DEBT SIZING REQUIREMENTS

The debt sizing requirements of lender include:

- Break even prices below AUD 25-35 (real 2017)
- DSCR)/Loan Life Cover Ratio (**LLCR**)
 - Lock-ups 1.5-1.15 depending on contracted capacity
 - Contracted and uncontracted revenue (e.g. P50 DSCR 1.3/1.9x)

4.4 CONTINUED REFERENCE TO HISTORICAL/BENCHMARK TRANSACTION

Lenders regularly refer to Australian market practice (even where those same lenders have international experience financing renewable energy projects).

The following table contrasts the requirements of lenders in the Australian market to the position in international markets.

Requirement	Australian market position	International market position
Lender ability to transfer loans to distressed debt/vulture funds	Lender has unrestricted full ability to transfer in an Event of Default (EoD)	Complete carve out of distressed debt/vulture funds
Change of control of Sponsor	Change of Control is a Review Event [and requires lender consent]	An "Acceptable Owner" definition is pre-agreed, so that the Borrower knows is a pre-agreed transferee/purchaser.
Lock-up and default ratios	Higher	Lower
OM cost assumptions	Flat long-term O&M profile	Accepted view that O&M cost step down overtime as the market matures and the benefits of economies of scale materialise
Debt Service Reserve Facility	Limited availability	Widely Available
Syndication	Required post Financial Close	Required post construction
Equity cure	Cure amount is a prepayment	Cure amount is considered revenue
Pricing	Confidential	Confidential
Cash sweep	Cash sweep after 2 consecutive lock –up periods	Cash sweep after 4 consecutive lock –up periods
DSRA	6 months Debt Service	6 months Debt Service
Amortisation	Sculpted (back ended)	Sculpted (back ended)
DSCR contracted/uncontracted	1.3x/1.95x	1.2x/1.8x
Upfront Arrangement fee	1.5% - 2%	1.0% - 1.75%
Merchant risk	High reliability on power price forecast	Lenders have internal view on power prices

5 RECOMMENDATIONS TO INCREASE THE COMPETITIVENESS AND REDUCE THE COST OF PROJECT FINANCING

For the reasons outlined above, non-recourse project financing will never be simple given its inherent characteristics. That said there are several ways to increase competitiveness and reduce cost:

5.1 COMPETITION

Currently international Lenders are overrepresented in transactions with significant merchant exposure.

There appears to be a low appetite for long maturity lending of Australian lenders and it should be explored whether this results from domestic lenders having:

- limited ability to take risk; or
- a lack of willingness to take risk, and

- efforts should be made to rectify the above limitations through increasing competition in the market.

CEFC/ARENA play a strategic role in bridging the pricing/risk gap and facilitating a clean energy transition. The role cannot be stressed enough.

CEFC should:

- continue to leverage their experience from the wind sector and playing a leading role in financing partly merchant solar portfolios
- CEFC role should include supporting and encouraging competition in the market to drive down costs.

We will recommend to the Clean Energy Council that an award is created to recognise innovative transactions, with the subsequent media exposure supporting innovative Lenders.

Using the initial knowledge sharing deliverable (“Closed forum for Financiers”) as a foundation, ARENA should chair a semi-annual round table with lenders to tackle current financing bottle necks and risk. A more transparent project finance market would benefit all stakeholders.

5.2 EFFICIENCY

There are numerous inefficiencies in securing project finance that increases cost. We have been fortunate to date that the projects are of a significant scale to absorb those costs. Some areas for improvement that we hope we will see as the market matures include:

5.2.1 Policy clarity post 2020

Sponsors and lenders alike require more certainty around the wholesale market/LRET/CET post year 2020.

Long term contracts from federal or state renewable schemes will facilitate long term financing. We believe that the long-term offtake agreement that is a ‘one-way CfD’ will beget the lower cost of capital in the market than a two-way CfD.

5.2.2 Standardised documentation

There is a need for standardised documentation, particularly in the area of Direct Agreements. These agreements are intended to provide lenders with cure rights and step in rights in the event of default by a Project Company/vehicle with a material project party (landowner, EPC contractor, Network Service Provider, Offtaker etc) and all too often the Direct Agreement seeks to re-allocate the risk position agreed between the parties.

The amount of time, energy and money spent on Direct Agreements is disproportionate to the significance of those agreements in the transaction.

5.2.3 Due Diligence

There are no established market norms for materiality thresholds and liability caps in due diligence reports. That is needed in order to increase efficiency (reduce cost) of due diligence process.

Further, advisers in a transaction should be writing their due diligence reports with the end in mind (i.e. preparing the final version from the outset with [square brackets] used to address positions that were not yet finalised, but were expected (actually needed) to be finalised before financial close. All too often advisers are issuing “point in time report”, which creates a lot of additional re-writing and beg a lot more questions than adopting the approach recommended.

5.2.4 Technical aspects

Our recommendations in relation to the technical aspects of a utility scale PV project to reduce cost are:

Item	Issue	Recommendations
Technical Performance	The financial modelling process is highly dependent upon the technical performance of the plant and the technical assumptions which are ultimately signed off by the Independent Technical Advisor. Any deviations to technical performance during the financing process can cause significant uncertainty and risk positions with financing parties.	It is recommended to undertake preliminary yield analysis in order to determine possible yield ranges and reduce uncertainty in the financing process:
O&M Cost Benchmarking	The relatively immature market of large-scale solar means that there is limited information available for long-term O&M cost estimates for use in financial modelling.	Undertake an independent review of project long-term O&M costs for large-scale solar in order to provide an overview of expected O&M cost ranges for different size solar farms.
Availability Assumptions	The relatively immature market of large-scale solar means that there is limited information available for long-term availability assumptions.	Undertake an independent review of project long-term availability assumptions for large-scale solar in order to provide an overview of expected availability ranges.
MLF	The Marginal Loss Factor (MLF) is a project variable which has significant impact on the financial performance of the project. It is necessary that all project parties agree to the basis of the MLF forecasts and that the forecasts represent a robust justifiable analysis.	In general, the following is recommended in relation to the application of MLF forecasting for use in the financial model: 1. Undertake preliminary MLF modelling in order to determine project likely viability before commencing the financing process. 2. Select a suitable 'bankable' consultant for the MLF forecasting and ensure that all project and financing parties are comfortable with the appointed consultant.
Reliance Levels	Different project financing parties may have different expectations of reliance limits of different consultants engaged during the financing process, and this can lead to disagreement of reliance values for work which is already completed, leading to higher consultant fees or project risk profiles.	In general, the following is recommended in relation to the reliance limits of consultants engaged during the financing period: 1. Determine and understand financing parties' requirements for reliance limits for different consultants. 2. Determine and agree reliance levels, including draft reliance

		terms, at point of engagement of the consultant.
Contingency Levels	There are differences in expectations of project contingencies to be used for financing of large-scale solar projects, with different financing parties having different risk profiles and experiences in typical project contingency amounts.	It is recommended that a risk analysis be undertaken in order to quantify the level of risk associated with cost overruns, and determine an appropriate amount of contingency for use in the financial model.
Sensitivity Analysis	Financing parties have a requirement for conducting sensitivity analysis for a range of project variables. Generally, with financing parties, commercial variables are well understood however often technical variables require advice from the Independent Technical Advisor.	In order to facilitate and provide some overview of variables and to facilitate sensitivity analysis, it is recommended to include the upper and lower ranges of key variables in the technical due diligence report to facilitate modelling in the financial model.

5.3 CONCLUDING COMMENTS

The Hensel project and financial structure have set a number of benchmarks in how a combination of merchant and contracted renewable energy projects can be financed in an efficient portfolio structure.

It is already evident that those precedents have been adapted by market participants leading to a more balanced risk distribution and reducing the cost of financing. With evolving market challenges the financing structures will need to continue to evolve in order to properly address both Lender and Sponsor concerns and unlock an unprecedented capacity of renewable projects in Australia.