



Macquarie Capital Advisers
Financing Renewable Energy

24 May 2010



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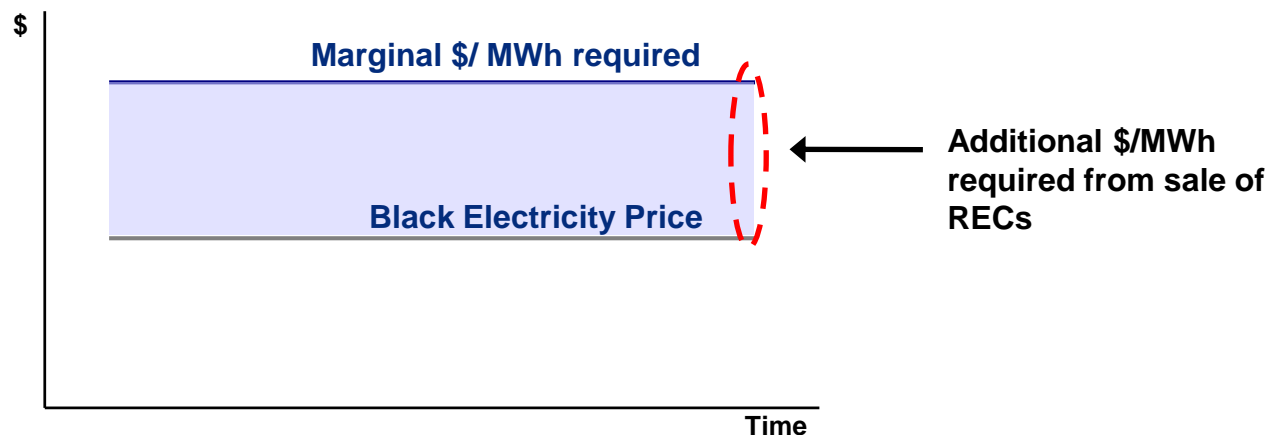
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Australian Regulatory Framework

Legislative intervention central to renewable energy markets, with the Australian regulatory environment still undergoing formalisation

- A number of varying schemes exist to provide incentives for the deployment of renewable energy projects worldwide
 - Feed-in-tariffs (e.g. Germany, France)
 - Tax incentive based schemes (e.g. USA)
 - Market based schemes (e.g. Australia, UK, USA)
- **Australia's market based regulatory framework** aims to encourage investors by **providing an additional revenue stream through the sale of Renewable Energy Certificates** ("RECs")
 - Revenue from electricity sales alone insufficient to make renewable projects economically viable
 - By **combining revenues of electricity and REC sales**, renewable energy projects are able to derive **sufficient returns to attract investors**



.....REC price seen as a balancing item, with REC prices impacted by market forces to allow for the next marginal MW of renewable generation to be installed



Australian Regulatory Framework

Two major initiatives intended to promote deployment of renewable energy projects

Renewable Energy Target

- Legislation introduced in 2001 **aimed at incentivising the deployment of renewable energy projects**
 - Legal obligation imposed on electricity retailers and wholesale buyers to source a percentage of their energy from renewable sources
 - Failure to comply resulted in a penalty charge (initially \$40/ MWh, upwardly revised to \$65/ MWh in August 2009)
 - Ramp-up of targets until 2020, with target to remain in place until 2030
- Federal Government's **objective to ensure 20% of electricity generation derived from renewable sources**
 - Proposed amendment announced in February 2010 to remove impact of domestic solar initiatives, with 41,000GWh required to come from large scale renewable energy generators
- **Target implies ~4,000MW¹ of flat load, or ~10,000MW if total contribution to come from wind²**

.....implementation of enhanced RET to increase market confidence and encourage investment

1) At an average capacity factor of 95%

2) At an average capacity factor of 35%

Carbon Pollution Reduction Scheme ("CPRS")

- "Cap and trade scheme" which **aims to put a cost on carbon polluting by placing a cap on emissions**
 - Limited permits issued by the Government each year, **resulting in a competitive market for the purchase of permits**
- **Indicative long term targets** include a reduction of 2000 emissions by:
 - 5%-15% by 2020
 - 60% by 2050
- Draft legislation passed by the House of Representatives on 4 June 2009, however was rejected on 13 August 2009 by the Senate
 - **Re-introduced to House of Representations on 22 October 2009, however again rejected by the Senate**
 - **Re-introduction of draft legislation to the Senate put on hold until next election, with rumours that the introduction of CPRS may be delayed until 2013**

.....major uncertainty over implementation of CPRS remains

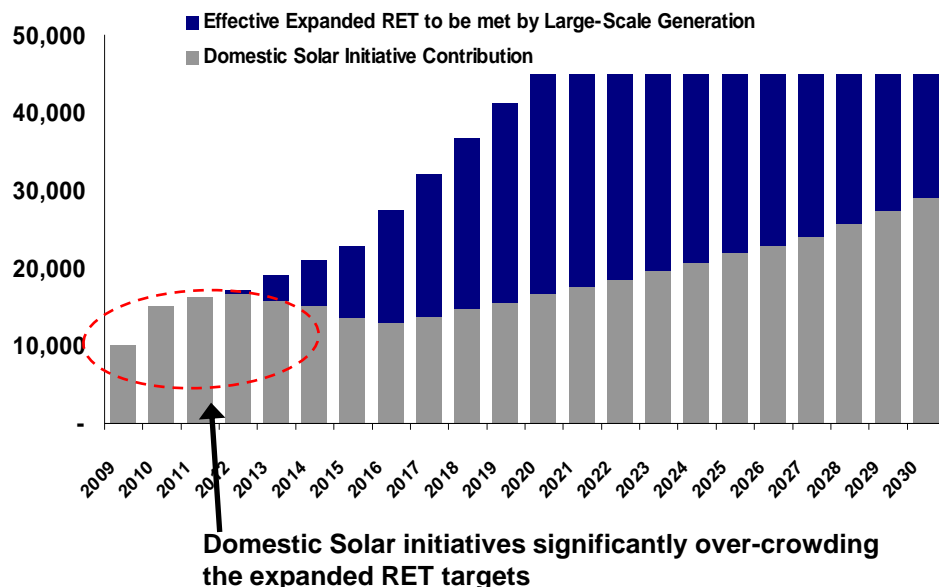


Implications of Enhanced RET

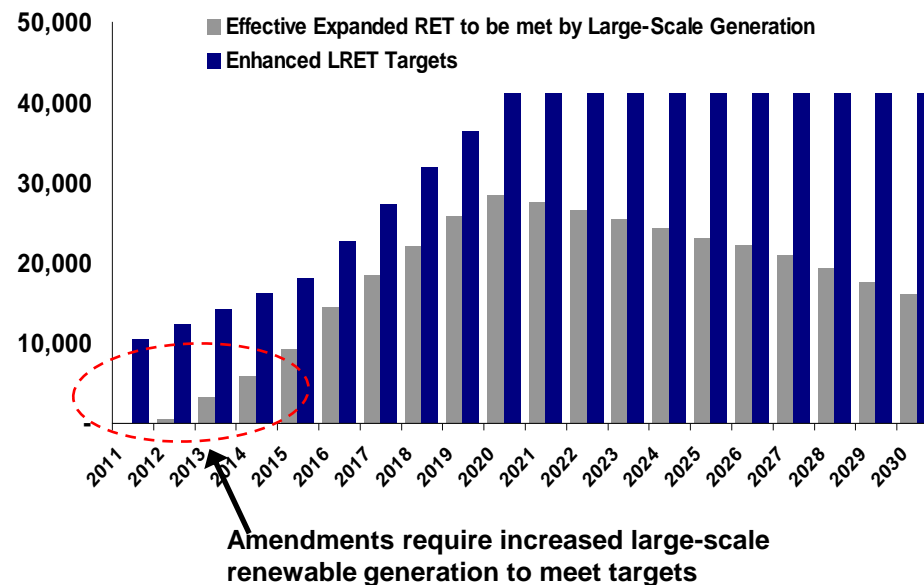
Enhanced RET to promote the development of large-scale renewable projects and remove the current uncertainty surrounding the RET scheme

- Proposed amendments to the expanded RET scheme announced in February 2010, with RET to be split into two components
 1. Small-scale Renewable Energy Scheme (“SRES”); and
 2. Large-scale Renewable Energy Target (“LRET”)
- Purpose of amendments to **remove the contribution of RECs created by small scale solar initiatives not backed by actual generation**
 - **LRET to therefore facilitate a significantly higher effective target that must be met through large-scale renewable generation**
.....resulting in increasing requirement for electricity retailers to secure an quantum of RECs at higher prices

Contribution to Expanded RET (GWh) – Pre-amendment¹



Large Scale Contribution to Targets (GWh) – Post-amendment¹



1) Source: Green Energy Markets Presentation – REC Review March 2010



Current Market Conditions

Global financial crisis and uncertainty surrounding the implementation of CPRS heavily affecting project economics

Current Shortage of Electricity Sales Agreements (“ESAs”)

- Legislative uncertainty resulting in shortage in availability of ESAs
- Parties with REC requirements also currently developing projects on balance sheet

Project Structuring

- The global financial crisis has caused high levels of risk aversion and capital rationing, ultimately leading to a **sharp decline in the availability and liquidity of funding in both the debt and equity markets**
 - **Debt financiers require the sale of electricity to be pursuant to an ESA with a credible counterparty**
 - Generally a long-term contract in the order of 10-15 years covering both the sale of electricity and all associated environmental rights such as RECs
 - **Debt providers dictating developers to utilise contracting options** (in particular those surrounding construction) **which are tailored to minimising risk**
 - Full turn-key Engineering, Procurement & Construction (“EPC”) contracts which guarantee pricing and delivery date are common in the market place
- In addition, **obtaining certainty surrounding maintaining a long-term fuel source is essential (in the instance of Biomass)**
 - Financiers assess quantity and pricing risks inherent in maintaining supply of the fuel resource

.....difficult market conditions driving change in project structures to provide certainty to financiers



Wind Asset Structuring & Financing

Project finance market currently driven by financiers requiring enhanced security in current credit environment

— Macquarie Capital considers certain issues critical in the structuring of the project, irrespective of the timing for seeking third party project finance, with financiers' (debt and equity) willingness to invest in projects ultimately dependant upon:

1. **Contracted revenues through existence of an ESA**
2. **Contractual structure of project** – several options available with risk allocation considered critical in current environment
3. **Turbine selection** and level of comfort provided by an established track record

Benefits achievable from structuring projects to meet investor requirements

Item	Benefit
Debt (cost and terms)	<p>— Cheaper cost of debt – lower margins if construction risk supported by creditworthy guarantees and merchant risk removed through an appropriate contractual structure</p> <p>— Favourable debt sizing parameters:</p> <ul style="list-style-type: none"> ➤ Extended notional debt term for sculpting ➤ Lower DSCR's at P50 level ➤ Higher gearing cap
Equity	— Lower required returns from equity providers due to appropriate risk allocation
ESA	— Due to favourable debt and equity pricing and debt sizing parameters, required ESA price can be highly competitive to what seen in the market to date , providing enhanced potential to secure long-term ESA

~~.....ability to raise sufficient and affordable project finance impacted by contractual structure of projects~~

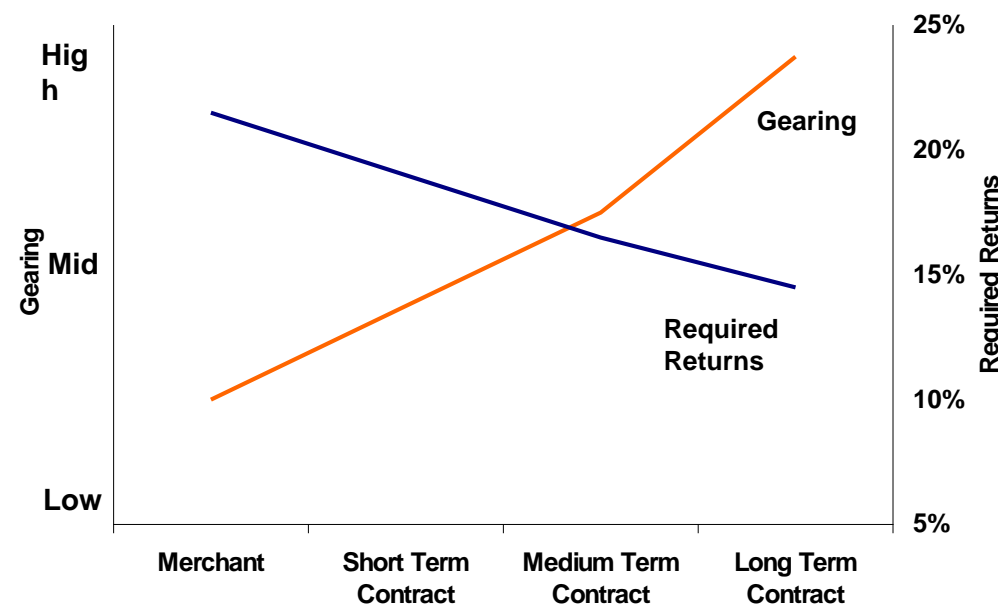


Impact on Capital Structure and Project Economics

Investor returns impacted by revenue contracting structure of projects

Structure	Gearing	Comment
Merchant	Low	<ul style="list-style-type: none"> — Opportunity to capture increase in brown and green prices following implementation of enhanced RET and CPRS — Low gearing & more equity required up-front — Re-gearing opportunity with greater CFADS from higher PPA price — Potentials to gain from the wind farm generation profile coinciding with daily peaks in electricity price — Less predictable cash-flows/distributions hence higher required equity returns
Short-term contract	Low-Mid	<ul style="list-style-type: none"> — Gearing levels reflect refinance risk
Mid-term contract	Mid-High	<ul style="list-style-type: none"> — Price at discount to market — Limited availability & likely equity dilution
Long-term contract	High	<ul style="list-style-type: none"> — Increased price certainty/ reduced project risk — Discounted PPA prices reducing equity upside — Limited availability & likely equity dilution

Gearing and Required Returns Based on Contract Term



.....solving the hedging/gearing/risks/rewards matrix and ensuring projects are properly structured and developed remains the key to optimising projects' economics

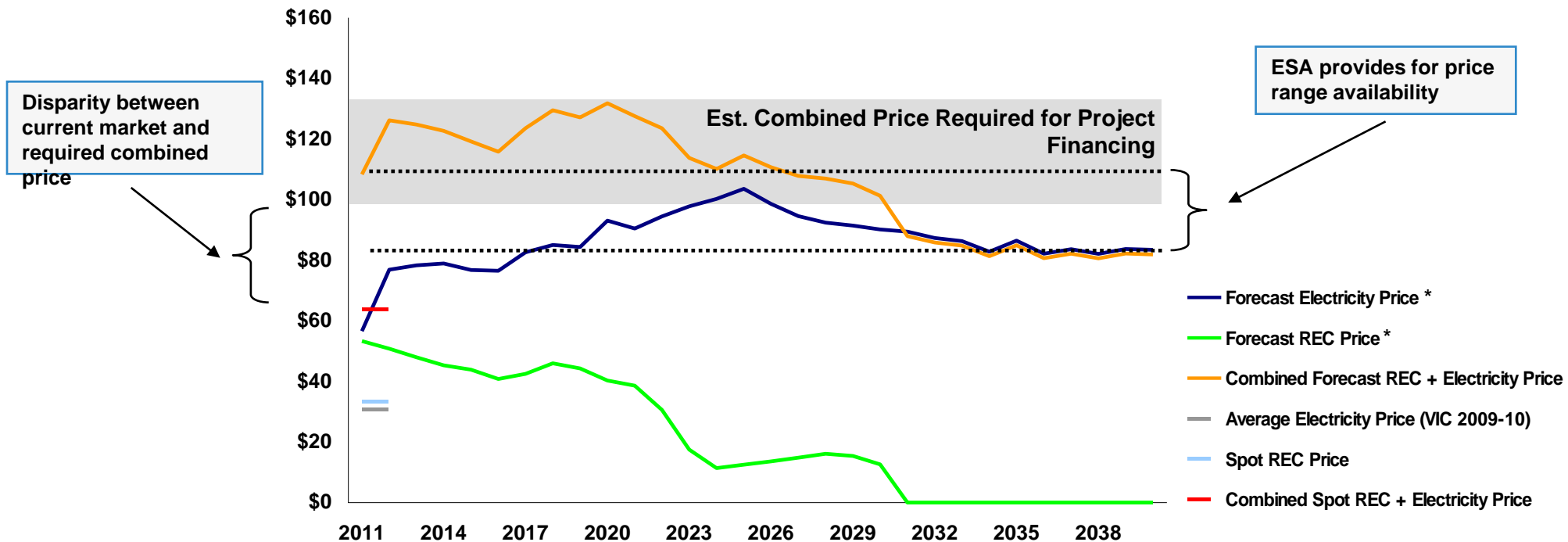


Current ESA Market

Significant market challenges to be overcome in order to successfully develop projects

- **Disparity exists between the current electricity and REC prices and the required price** to project finance projects
 - Ramp up profile of RET and impact of various market mechanics further impacting market demand for RECs
- **Oligopoly in the ESA market** with largest electricity retailers developing their own projects
 - Ability to utilise balance sheets without requirement to project finance resulting in improved project economics

Electricity Price Requirements to Finance Wind Projects





Key Construction Contracts

Two key contracts required in the construction of a wind farm, with varying contractual structures available

Wind farms can generally be broken down into **2 separate areas of construction**

- **Turbines** – supply, installation and commissioning of wind turbines and towers
- **Balance of Plant (“BOP”) Works** - construction and installation of turbine foundations, electricity substations, electrical cabling and transmission line infrastructure

— A broad range of contracting structures available for developers to consider

**Separate Contracts
for Turbines and
BOP**

- Contracts entered into separately with Turbine supplier and BOP contractor
- Separate responsibilities, separate liabilities
- Possible to further break down BOP onto civil and electrical works

EPC Wrap

- Single contracting structure with one entity “wrapping” the obligations and liabilities of the other entity

**Unincorporated
Joint Venture**

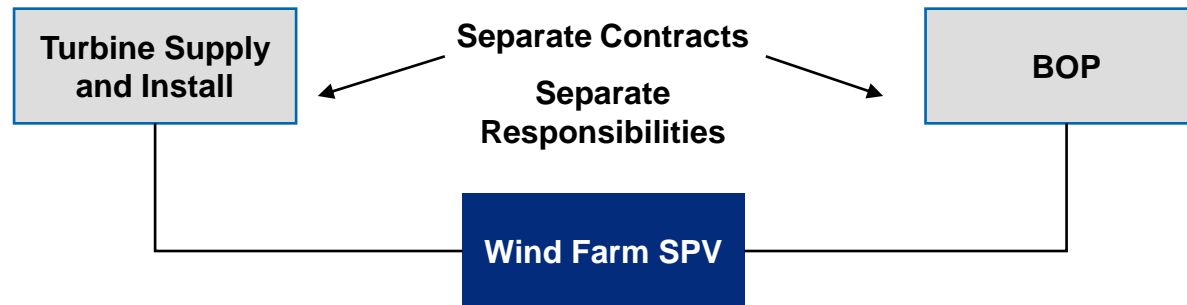
- Joint and several liability for both Turbine supplier and BOP Contractor through the incorporation of an unincorporated entity

.....selection of a contracting structure is typically tailored to meet project finance requirements by minimising interface risk between BOP and turbines at the site

Separate Contracts

Two key contracts provided separately, with interface risk borne by developer

- Separate contracts entered into by the Wind Farm SPV for the various works undertaken on site
- Warranties backed by the balance sheet of each respective contractor, and only for the works undertaken
- Whilst potential exists to take the **benefit of reduced margins via direct contracting, significant interface risk borne by developer**



Pro's

- **Reduced price** as less risk being borne by contractor
- **Guarantees provided by each contractor** for their scope of works
- Broader range of potential tenderers, providing **competitive tension**

Con's

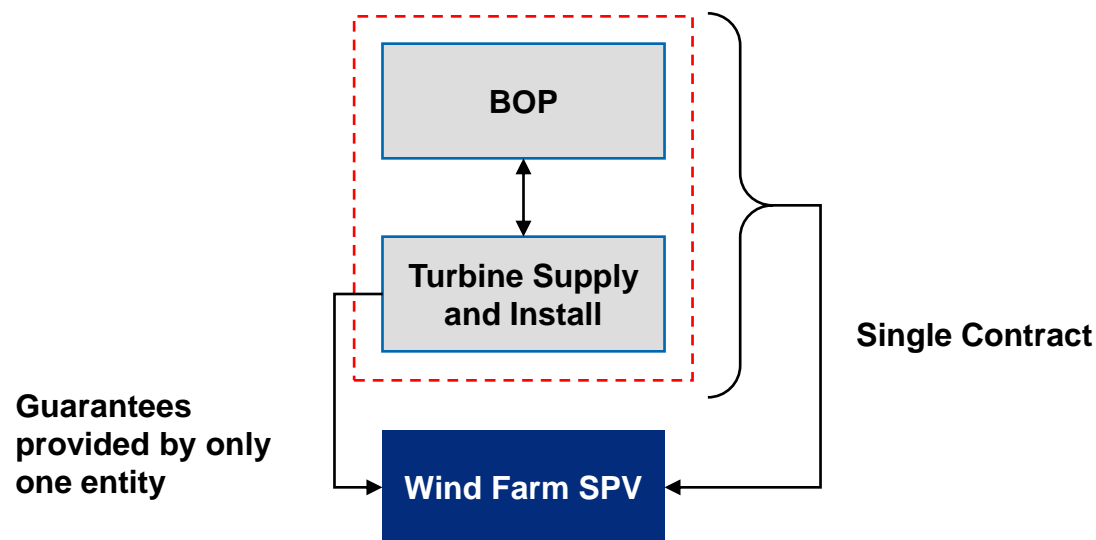
- **Significant project management task**
- **Less security for financiers**
- **Difficulty in attributing source of delay in project delivery and performance guarantee** throughout project life
- Significant **additional risk borne by developer**, particularly with regards to interface between obligations

.....whilst cost benefits achievable, current credit environment demanding a more "bullet proof" structure for project financing at commencement of construction

EPC Wrap

EPC structure providing complete delivery of wind farm facility via one contract

- Project delivery method tailored to minimise interface risk, with delay and performance damages provided by the “wrapping entity”



Pro's

- **Fixed price contract, fixed delivery date (subject to standard carve-outs – e.g. force majeure)**
- **Single point of contact** for developer
- **Reduced interface risk** borne by developer

Con's

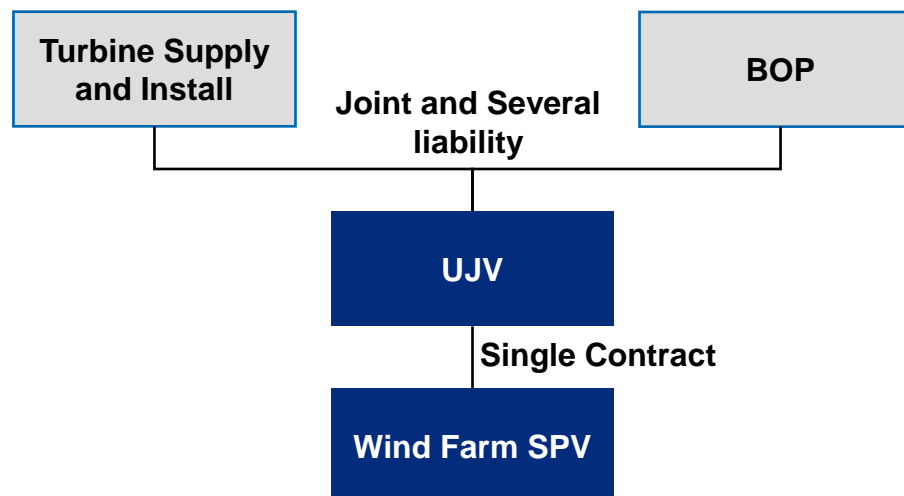
- **Increased price** as wrapping entity adds premium for taking on interface risk
- **Exposure to only one balance sheet** in terms of security
- **Increase documentation (legal) costs**
- **More complex and time consuming front-end work**

.....a preferred approach for financiers with contracting structure minimising risks

Unincorporated Joint Venture

Joint delivery of a project without the requirement to form a separate legal entity

- Contractual relationship entered into by suppliers
 - Obligation on each supplier to deliver their goods and services
- Developer enters into single contract – suppliers tender via a consortium type structure



Pro's

- Fixed price contract, fixed delivery date (subject to standard carve-outs – e.g. force majeure)
- Reduced interface risk borne by project
- Greater security via exposure to balance sheets of both contracting entities

Con's

- Increased price parties may add premium for undertaking agreement with joint and several liability
- Increase documentation (legal) costs
- More complex and time consuming front-end work

.....whatever course is chosen, putting in place a construction security package acceptable to lenders will be expensive in terms of both margins charged by contractors and legal costs for the documentation



Turbine Selection in Current Environment

Increased risk aversion and capital rationing resulting in financiers being selective with regards to technology utilised for projects

- Prior to the global financial crisis, the banking market was willing to assume additional technological risk, with financiers accepting a wider variety of wind turbines
- However, **with increased focus on appropriate allocation of risk, financiers now placing stronger emphasis on the track record of turbines and their manufacturers**
 - Requirement for **technology to be proven**
 - **Jurisdictional track record** considered critical due to varying abilities of turbines to connect to different electricity grid configurations
 - **Credibility and creditworthiness of supplier providing performance guarantees** scrutinised

.....bankability of turbines in the Australian market is critical for project finance



Providing Fuel Source Certainty

Availability of fuel source drives production and associated revenue streams

- Fuel source varies significantly depending on the technology and bioenergy being utilised, **making it difficult to implement one structure which provides certainty across the board**
- Nonetheless, two common approaches used overseas include:

Detail	Comment
Execution of a single dedicated long-term contract with a fuel supplier	— Ideal structure, providing the most security to financiers
	— Ability to execute such a contract is very dependant on the fuel source <ul style="list-style-type: none"> - Typically difficult to source a single supplier which can provide sufficient quantities at an economically favourable price
	— Examples of such a structure being utilised is in the wood-related waste space in Canada, and the sugarcane / landfill gas space in Australia
Implementation of a centralised fuel source buying department	— Typically found in the agricultural bioenergy space
	— Requirement to demonstrate to financiers a sufficiently large pool of economically viable fuel exists

- A further structure occasionally used is a tolling arrangement with the fuel provider themselves
 - Plant operator hires out facilities to the fuel provider, who in-turn is responsible for providing the fuel and selling the associated output
 - **Plant operator no longer exposed to fuel source and off-take risks and earns contracted hire fees**

....implementation of most effective structure to provide financiers comfort with regard to fuel source certainty

Summary

Project structure critical to developing a commercially viable project

- Current project finance market driving the requirement for projects to have:
 - **Revenues contracted in the form of a long term ESA**
 - **Appropriate risks allocation through the project's contracting structure**
 - **Wind turbines with a strong proven track record**
- Differing contracting options available, dependant upon stage at which project financing is to be sought:

Project Finance at Financial Close

- Project structure driven by requirements of financiers
- Current market conditions making requirement for an ESA essential
- Requirement for EPC Wrap or UJV type contracting structure, with clearly defined risk allocation

Equity fund construction, with project financing after operations commence

- Separate contracting structure available, allowing for benefits of reduced capital costs
- Removes upfront requirement of ESA and allows for potential benefit from improvement in current market conditions
 - Assuming it continues, it will allow the project to take advantage of improved credit market conditions

.....ultimate selection of appropriate structure dependant on financing intentions



Appendix A

Case Studies



Hallett I Wind Farm

Background

- In 2H 2006, Macquarie Capital Advisers acted as financial adviser, equity arranger and debt arranger to Perpetual Investments for the acquisition of the Hallett I Wind Farm from AGL
- Acquisition took place under a competitive bid process with a compressed timeframe of 4.5 weeks from initial presentation to financial close

Key features

- Innovative funding arrangement implemented, allowing Perpetual to take ownership of the physical asset while AGL would continue to own the output and operate and maintain the wind farm
- Provided a very solid base for Perpetual's entry into the renewable energy infrastructure sector



Key Statistics

Date	Dec 2006
EV (AUD)	\$280m
Capacity (MW)	94.5MW
Wind turbines	45



Hallett II Wind Farm

Background

- In 2H 2008, Macquarie Capital Advisers acted as financial adviser, equity arranger and debt arranger for AGL in the sale of the Hallett II Wind Farm

Key features

- Similar transaction structure to that utilised for Hallet I Wind Farm
- Long-term off-take contract for Black Electricity and RECs written by AGL



Key Statistics

Date	August 2008
EV (AUD)	Confidential
Capacity (MW)	71.4MW
Wind turbines	34



Macquarie Power & Infrastructure Income Fund

Background

- Macquarie Power & Infrastructure Income Fund (“**MPT**”) has a portfolio of renewable energy assets in Canada including wind, gas, biomass and hydro

Whitecourt Power	
Location	Alberta, Canada
Energy Source	Biomass, wood-waste
Installed Capacity	25 MW
Date of Commission	1994
Availability	88.4% for year ended 31 Dec 08
Macquarie Ownership	100%
Key Features	<ul style="list-style-type: none"> — PPA with TransAlta until 2014 covering 20.7 MW — Long-term fuel supply agreement with Millar Western Group of Companies (Millar – Western) until 2016

Chapais Biomass	
Location	Quebec, Canada
Energy Source	Biomass, wood-waste
Installed Capacity	31 MW
Date of Commission	1992
Availability	93.4% for year ended 31 Dec 08
Macquarie Ownership	<ul style="list-style-type: none"> — 31.3 % interest in one of two classes of preferred shares — 24.8% interest in tranche A and tranche B debt and a 50% interest in tranche C debt
Key Features	<ul style="list-style-type: none"> — PPA with Hydro Quebec until 2015 — Long-term fuel supply contracts that expire in 2015, with option to extend to 2020



Energy Power Resources Limited

Background

- In March 2005, Macquarie European Infrastructure Fund (“MEIF”) announced the acquisition of 100% of the equity of Energy Power Resources Limited (“EPRL”)

Key features

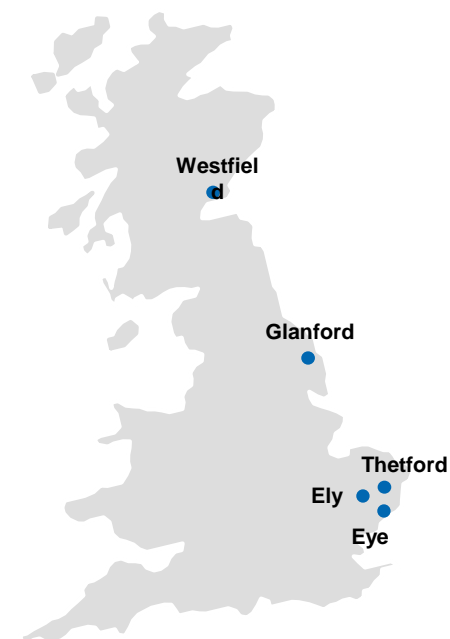
- One of UK’s largest portfolio of renewable energy assets, ~12.5% of UK renewable energy generation; handles 950,000 tonnes of biomass waste pa

Plant	Installed Capacity (MW)	Date of Commission	Fuel Source
Ely	38	Dec 2000	Straw
Thetford	38.5	Jun 1999	Chicken litter
Eye	12.7	Jul 1992	Poultry litter
Westfield	9.8	Jan 2001	Chicken litter
Glanford	13.5	Nov 1993	Meat and bone-meal

Investment characteristics

- UK regulatory environment supportive of renewable energy projects – to increase from 3 per cent to 15.4 per cent of all electricity supplied by 2015
- Almost 100% of EPRL’s power generation is sold under long term sales contracts
- Fuels come from number of suppliers, therefore fuel sourcing department and contracting strategy is key
- Non-recourse amortising debt in place

Asset Locations





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