Korea Plant Industries Association

September 2017

Morgan Stanley

KOPIA
KOREA PLANT INDUSTRIES ASSOCIATION

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Section 1

Project Finance Rating Methodology

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What is Project Finance?

Project finance is the *long term financing* of infrastructure and industrial projects based upon the *projected cash flows of the project* rather than the balance sheets of the project sponsors.

Usually, a project financing structure involves a number of equity investors, known as ***sponsors***, as well as a syndicate of investors that provide loans or purchase bonds to support the operation. The loans and bonds are most commonly ***non-recourse loans***, which are secured by the project assets and paid entirely from project cash flow, rather than from the general assets or creditworthiness of the project sponsors, a decision in part supported by financial modeling.

The financing is typically ***secured by all of the project assets***, including the revenue-producing contracts. Project lenders are given a lien on all of these assets, and are able to assume control of a project if the project company has difficulties complying with the loan and bond terms.

Project Finance Rating Methodology – Moodys

Types of Power Generation Projects

1. ***Fully Contracted:*** Projects with highly predictable cash flows with fully contracted revenues, commodity cost hedging arrangements and pass through of material cost components. Projects that are fully contracted have typically been structured as fully amortizing deals as well

2. ***Merchant Basis:*** Merchant generation projects with substantial exposure to power market prices and commodity cost of fuel, where the ability of the project to generate steady and predictable cash flow is uncertain and depends upon the competitive position of the project relative to the market in which it operates and the overall competitive structure of the respective market

1 Rating Factors

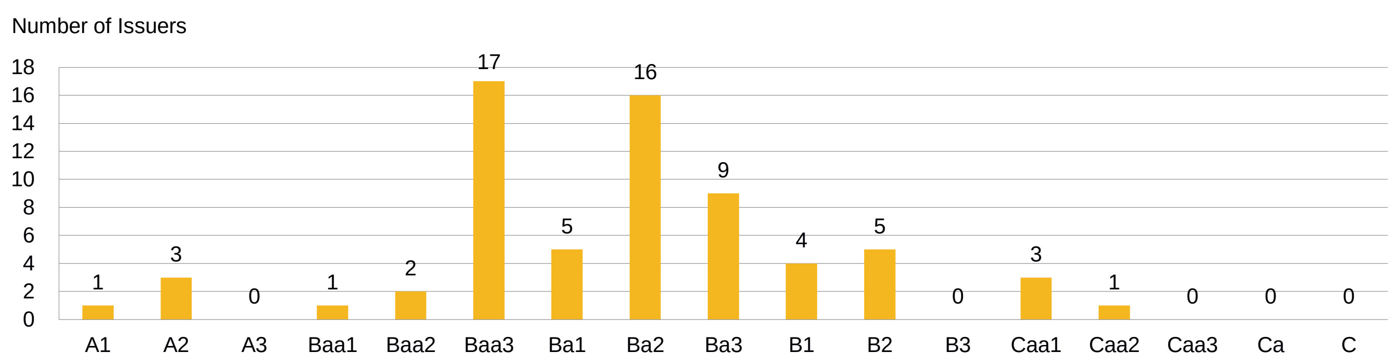
- Predictability of cash flows
- Competiveness / regulatory support
- Technical and operating risks / vendor [profile]
- Key financials

2 Notching Factors

- Liquidity
- Strength of project financing structure
- Refinancing risk
- Structural subordination
- Construction risk
- Termination payment

Rating

Global Rating Distribution by Number of Issuers



Source Moody's

About This Rating Methodology – Moodys

1 Identification of key Rating Factors

Amortizing

Broad Rating Factors	Weighting Factor	Broad Rating Factors	Weighting Factor
Predictability of Cash Flows	30%	Quality & Diversity of Cash Flows	25%
		Conditions for Contract Payment	5%
Competitiveness / Regulatory Support	15%	Competitiveness of Contracts Relative to Market / Regulatory Support	15%
Technical and Operating Risks/Vendor Profile	20%	Technology & Operating Track Record and Vendor Profile	10%
		Quality of Operator; O&M Framework; Sponsor Strength/Commitment	10%
Key Financial Metric	35%	Debt Service Coverage Ratio	35%
Total	**100%**	**Total**	**100%**

Non-Amortizing

Broad Rating Factors	Weighting Factor	Broad Rating Factors	Weighting Factor
Predictability of Cash Flows	20%	Quality & Diversity of Cash Flows	20%
Competitiveness / Regulatory Support	15%	Competitiveness of Project Assets / Regulatory Support	15%
Technical and Operating Risks / Vendor Profile	20%	Technology, Operating Track Record and Vendor Profile	10%
		Quality of Operator, O&M Framework, Sponsor Strength/Commitment	10%
Key Financial Metrics	45%	Ratio of Funds From Operations to Total Adjusted Debt	20%
		Ratio of CFADS to Mandatory Debt Service	15%
		Total Adjusted Debt / Total Capitalization	10%
Total	**100%**	**Total**	**100%**

2 Measurement of Estimation of the Key Rating Factors

3 Mapping Grid Factors to Rating Categories

4 Determining the Grid-Indicated Outcome

Rating Category	Aaa	Aa	A	Baa	Ba	B	Caa
Value	1	3	6	9	12	15	18

Grid-Indicated Rating	Aggregate Weighted Total Factor Score
Aaa	x < 1.5
Aa1	1.5 ≤ x < 2.5
Aa2	2.5 ≤ x < 3.5
Aa3	3.5 ≤ x < 4.5
A1	4.5 ≤ x < 5.5
A2	4.5 ≤ x < 5.5
A3	6.5 ≤ x < 7.5
Baa1	7.5 ≤ x < 8.5
Baa2	8.5 ≤ x < 9.5
Baa3	9.5 ≤ x < 10.5
Ba1	10.5 ≤ x < 11.5
Ba2	11.5 ≤ x < 12.5
Ba3	12.5 ≤ x < 13.5
B1	13.5 ≤ x < 14.5
B2	14.5 ≤ x < 15.5
B3	15.5 ≤ x < 16.5

5 Notching Factors

Liquidity	Structural Subordination
Strength of Project Financing Structure	Construction Risk
Refinancing Risk	

Rating Factors – Moodys

Rating Factor #1: Predictability of Cash Flows

Sub-Factor (a): Quality and Diversity of Cash Flow Stream

Rating Grid Mapping

Rating Category	Aa	A	Baa	Ba	B	Caa
a) Quality and Diversity of Cash Flow Stream	• Very highly predictable contracted cash flows from substantial number of very highly rated off-takers. (Applicable to a single offtaker if counterparty is state or government owned and is rated 'Aa' or better and project is integral to offtaker's grid and no competitive wholesale market exists.) Contracts are structured to pass through commodity costs, O&M cost inflation and includes pass through of material environmental costs, including capex, due to change in regulation. No fuel supply risk; high quality fuel supplier; abundant sources of fuel to cover term of offtake contract.	• Highly predictable contracted cash flow from one or more highly rated counterparties. (Applicable to a single offtaker if counterparty is state or government owned and is rated 'A' or better and project is integral to offtaker's grid and no competitive wholesale market exists.) Contracts are structured to pass through commodity costs, O&M cost inflation and includes pass through of material environmental costs, including capex, due to change in regulation. Very low fuel supply risk; high quality fuel supplier; abundant sources of fuel to cover term of offtake contract.	• Highly predictable fully contracted cash flow from 1 or more creditworthy counterparties for the full term of the financing. Contracts are structured to pass through commodity costs, O&M cost inflation and includes pass through of material environmental costs, including capex, due to change in regulation. Low fuel supply risk; good quality fuel supplier; abundant sources of fuel to cover term of offtake contract.	• About 50% of expected cash flow stream is based upon contracted or hedged cash flow, but may not be for the full financing term. Unhedged cash flow is expected to exhibit relatively low year-to-year volatility. Greater degree of unhedged cash flows can be tolerated if such unhedged cash flows are derived from well established capacity markets. Some risk of fuel supply; fuel supplier is rated below investment grade.	• Less than 50% of expected cash flow is based upon contracted or hedged cash flow. Unhedged cash flow is vulnerable to year-over-year volatility. High risk of fuel supply; fuel supplier is rated below investment grade.	• Modest amount of expected cash flow is based upon contracted or hedged cash flow. Cash flows are highly vulnerable to year-over-year volatility. Very high risk of fuel supply.
b) Conditions For Contract Payments Or Receipt of Revenues	• No condition exists that would cause revenues not to be paid.	• Revenue levels are highly probable under virtually all scenarios.	• Conditions for payments are probable under most scenarios. Debt service payments are largely based upon receipt of capacity payments or reservation charges based upon the operating performance of the plant and the terms of the contract.	• Conditions for payment can be less predictable due to the terms of the contract based on the operating history or expected performance of the plant.	• Conditions for payment are less certain. Receipt of revenues may have greater volatility due to technological risks or operational risks, or may have a high dependence upon factors beyond the control of the project.	• Receipt of revenues is highly uncertain. Receipt of revenues may experience material volatility due to technological or operational challenges, or may have a high dependence upon factors beyond the control of the project.

Rating Factors (cont'd) – Moodys

Rating Factor #2: Competitiveness / Regulatory Support

Sub-Factor (a): Competitiveness of Contracts Relative to Market / Regulatory Support

Rating Grid Mapping

Rating Category	Aa	A	Baa	Ba	B	Caa
a) Competitiveness of Contracts Relative to Market/Regulatory Support	• Terms of the contracts will always be very competitive to prevailing market prices. No impact occurs on expected revenue stream following termination of the contract. • Renewable projects must achieve same standards of competitiveness as conventional power generation to map to 'Aa' in this factor irrespective of regulatory support.	• Terms of contracts should always be competitive to prevailing market prices during term of financing. Little, if any, impact is expected on revenue stream following termination of the contract. • Renewable projects must achieve same standards of competitiveness as conventional power generation to map to 'A' in this factor irrespective of regulatory support.	• Terms of the contracts are expected to be at or near market prices during the term of financing. Some revenue impact could occur if contract is terminated, but revenue erosion is expected to be relatively modest. • For renewable projects, strong regulatory support from central government, regional jurisdiction or rate setting authority. There is little risk of a change in law or of supportive regulation eroding over time. There is good history of contract sanctity or of legal protection against subsidy reduction. The price for renewable energy is at or near prices for other renewable energy in the same jurisdiction.	• Terms of contracts are expected to be 10% to 25% above market prices for the foreseeable future. Loss of contract would have a temporary impact on revenues, but project should be able to secure replacement revenues in a reasonably short time frame. • For renewable projects, generally supportive regulatory framework for renewable generation from central government, regional jurisdiction or rate setting authority, but support could erode over time due to a change in law or supportive regulation. The price of renewable energy is slightly above prices for other renewable energy in the same jurisdiction.	• Terms of contracts are expected to be 25% to 50% above market prices for the foreseeable future. Termination of contract would likely result in severe cash flow erosion and replacement contracts, if secured, would likely be on substantially less favorable terms. Termination of contract would make timely payment of operating costs and debt service difficult. Failure to obtain replacement contracts could result in a payment default in a two year timeframe. • Regulatory framework for renewable projects is less supportive. Or, if currently supportive, this regulatory support has been challenged or is vulnerable to change that could have a negative impact on the economics of the project. Price competitiveness of the project relative to other renewable energy sources is weak.	• Terms of underlying contracts are more than 50% above market prices for the foreseeable future. Termination of contact would result in an immediate loss of cash flow, with the prospect of securing any replacement contract being extraordinarily difficult. Termination of the contract would likely result in a payment default within a one-year timeframe. • Regulatory environment for renewable generation is unstable or part of an emerging market with little history or transparency with respect to contract sanctity or legal protections.

Rating Factors (cont'd) – Moodys

Rating Factor #2: Competitiveness / Regulatory Support

Sub-Factor (a): Competitiveness of Project Assets / Regulatory Support

Rating Grid Mapping

Rating Category	Aa	A	Baa	Ba	B	Caa
a) Competitiveness of Project Assets / Regulatory Support	• Highly competitive assets located in several different countries or several different complementary electric regions of the same country, which will always be the lowest cost set of assets, have very high obstacles to entry, and have very little or no exposure to future environmental challenges. • Renewable projects must achieve same standards of competitiveness as conventional power generation to map to 'Aa' in this factor irrespective of regulatory support.	• Very competitive assets located in several countries or regions of the same country, all of which are often among the lowest cost set of assets in the respective regions. Market has high obstacles to entry, but exposure to environmental challenges may exist. • Renewable projects must achieve same standards of competitiveness as conventional power generation to map to 'A' in this factor irrespective of regulatory support.	• Consistently competitive assets located in more than one country or more than one region of the domiciled country or very competitive project located in one region of the country. Assets are generally among the lowest cost set of assets in the region, currently have an obstacle to entry from other providers, operate in a region where significant supply constraints exist, or may enjoy regulatory or legislative protection for extended period of time. • For renewable projects that are not contracted, there would have to be the same strong regulatory support from central government, regional jurisdiction or rate setting authority that applied to the uncontracted project and would result in the same level of price certainty as a contracted project that maps to this rating category. There is little risk of a change in law or of supportive regulation eroding over time. There is good history of contract sanctity or of legal protection against subsidy reduction. The price for renewable energy is at or near prices for other renewable energy in the same jurisdiction.	• Generally competitive assets located in one region of the domiciled country. Assets currently are among the lowest cost in the region, but competitive position could be challenged by new entrants or by changes in laws. Obstacle to entry exists, but could decline over time. Operates in a region where some supply constraint exists, or has some current regulatory or legislative protection in its marketplace for an intermediate term time frame. • For renewable projects that are not contracted, there would have to be the same generally supportive regulatory framework for renewable generation from central government, regional jurisdiction or rate setting authority that applied to the uncontracted project and would result in the same level of price certainty as a contracted project that maps to this rating category, but that support could erode over time due to a change in law or supportive regulation. The price of renewable energy is slightly above prices for other renewable energy in the same jurisdiction.	• Competitive position is weak. Ability to operate is highly dependent upon certain legislative or regulatory protections in place, which could erode over time. Obstacles to entry exist, but are not considered high. New entrant could make asset class vulnerable to being shut down or displaced. Asset operates in region that has a degree of excess supply for the next several years. • Regulatory framework for renewable projects is less supportive. Or, if currently supportive, this regulatory support has been challenged or is vulnerable to change that could have a negative impact on the economics of the project. Price competitiveness of the project relative to other renewable energy sources is weak.	• Very weak competitive position. Plants are consistently among the last set of assets to be dispatched either because of high heat rates or because they operate in a region that has excessive supply of new entrants. Asset is highly vulnerable to being permanently shut down within the next two years. • Regulatory environment for renewable generation is unstable or part of an emerging market with little history or transparency with respect to contract sanctity or legal protections.

Rating Factors (cont'd) – Moodys

Rating Factor #3: Technical and Operating Risks / Vendor Profile

Sub-Factor (a): Competitiveness of Contracts Relative to Market / Regulatory Support

Rating Grid Mapping

Rating Category	Aa	A	Baa	Ba	B	Caa
a) Technology, Operating Track Record and Vendor Profile	• Commercially proven technology. Revenues are not impacted by operational performance of the plant. • For renewable projects to map to Aa in this subfactor would require them to meet the same standards for technology and operating track record that would apply to any other power generation project mapping to Aa	• Commercially proven technology. Ongoing capex and maintenance for project is expected to be very modest. • For renewable projects to map to A in this subfactor would require them to meet the same standards for technology and operating track record above that would apply to any other power generation project mapping to A. Warranties and/or performance guarantees for equipment from creditworthy vendor/manufacturer are in place for most or all of the project's life.	• Commercially proven technology. Ongoing capex and maintenance will be required to maintain performance availability, which could be mitigated if project has LTSA with recognized vendor. • For renewable projects, commercially proven technology from an established vendor/manufacturer with greater certainty and predictability of operating profile. Recognized vendor/manufacturer has direct experience with this technology and has successful performance history. Warranties and/or performance guarantees for equipment from creditworthy vendor/manufacturer are in place for a number of years of the project's life.	• Commercially proven technology used, but operating challenges have occurred at the plant or at similar plants in the fleet. Active major maintenance and capex program is essential to maintain performance standards. May or may not have LTSA. • For renewable projects, commercially proven technology from a less established vendor/manufacturer or newer technology from an established vendor/manufacturer with some degree of certainty and predictability of operating profile. Warranties and/or performance guarantees for equipment from a creditworthy vendor/manufacturer or can be easily and cost effectively replaced with similar equipment/vendor.	• Most of technology is considered to be proven, but certain elements are untested or have limited operating history. Asset is widely expected to need active O&M program during early years of operation. Where plant has had several years of operation, performance has been erratic. • Less proven renewable technology or technology provided by a less established vendor/manufacturer where the equipment and/or vendor cannot easily or cost effectively be replaced. While there is some track record, there is less certainty around the operating profile.	• Commercial technology is unproven and untested. Where the asset has had several years of operations, operating performance has been consistently well below industry standards. • The renewable technology is unproven. High obsolescence risk. Where the asset has had several years of operations, the operating profile is highly uncertain.
b) Quality of Operator, O&M Contractual Framework and Sponsor Strength / Commitment	• Operator has considerable track record and is highly creditworthy. Long term O&M contract has significant performance damages from operator. Sponsor is highly rated and has a demonstrated track record of providing ongoing financial support for project.	• O&M contract with a recognized operator with an established track record. Long term O&M contract that includes significant performance damages. High quality sponsor that has a track record of providing ongoing financial support for project.	• O&M contract with recognized operator. Long term O&M contract that may or may not include performance damages for the project. Sponsor has a good track record of providing operational oversight.	• O&M contract with recognized operator. O&M contract could be shorter in duration than the tenor of the project debt. Sponsor has a good track record, but limited support can be expected if performance problems persist.	• Operator may not have proven track record with this particular technology. O&M contract may be shorter in duration than the tenor of the project debt and does not include performance damages. Non strategic sponsor with little or no track record. Sponsor support may not be expected if there are performance problems.	• Operator or O&M contractor has limited experience with power plants and the operator is considered weak financially. Sponsor support not expected if there are operating problems.

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Rating Factors (cont'd) – Moodys

Rating Factor #4: Key Financial Metrics

$$\text{DSCR} = \frac{\text{Cash Flow Available For Debt Service (CFADS)}}{\text{Scheduled Interest plus Principal Payments (P \& I)}}$$

Rating Grid Mapping

Rating Category	Aa	A	Baa	Ba	B	Caa
Debt Service Coverage Ratio (DSCR) (35%)	• Average DSCR greater than 3.50x	• Average DSCR of 1.90x to 3.50x	• Average DSCR of 1.40x to 1.90x.	• Average DSCR of 1.20x to 1.40x.	• Average DSCR of 1.10x to 1.20x	• Average DSCR of 1.00x to 1.10x

For partially amortizing and/or non-amortizing debt structures (merchant generation projects)

- Sub-factor (a): Ratio of FFO to Total Adjusted Debt (20%) (Adjusted for Leases)
- Sub-factor (b): Ratio of CFADS to Mandatory Debt Service (15%)
- Sub-factor (c): Total Adjusted Debt / Total Capitalization (10%)

Sub-Factor (a): Ratio of Funds From Operation (FFO) to Total Adjusted Debt (20%)

Rating Grid Mapping

Rating Category	Aa	A	Baa	Ba	B	Caa
a) Ratio of Funds From Operations to Total Adjusted Debt (20%)	> 80%	46–80%	25%–45%	13%–24%	5%–12%	<5%

Sub-Factor (b): Ratio of Cash Available for Debt Service to Mandatory Debt Service (15%)

Rating Grid Mapping

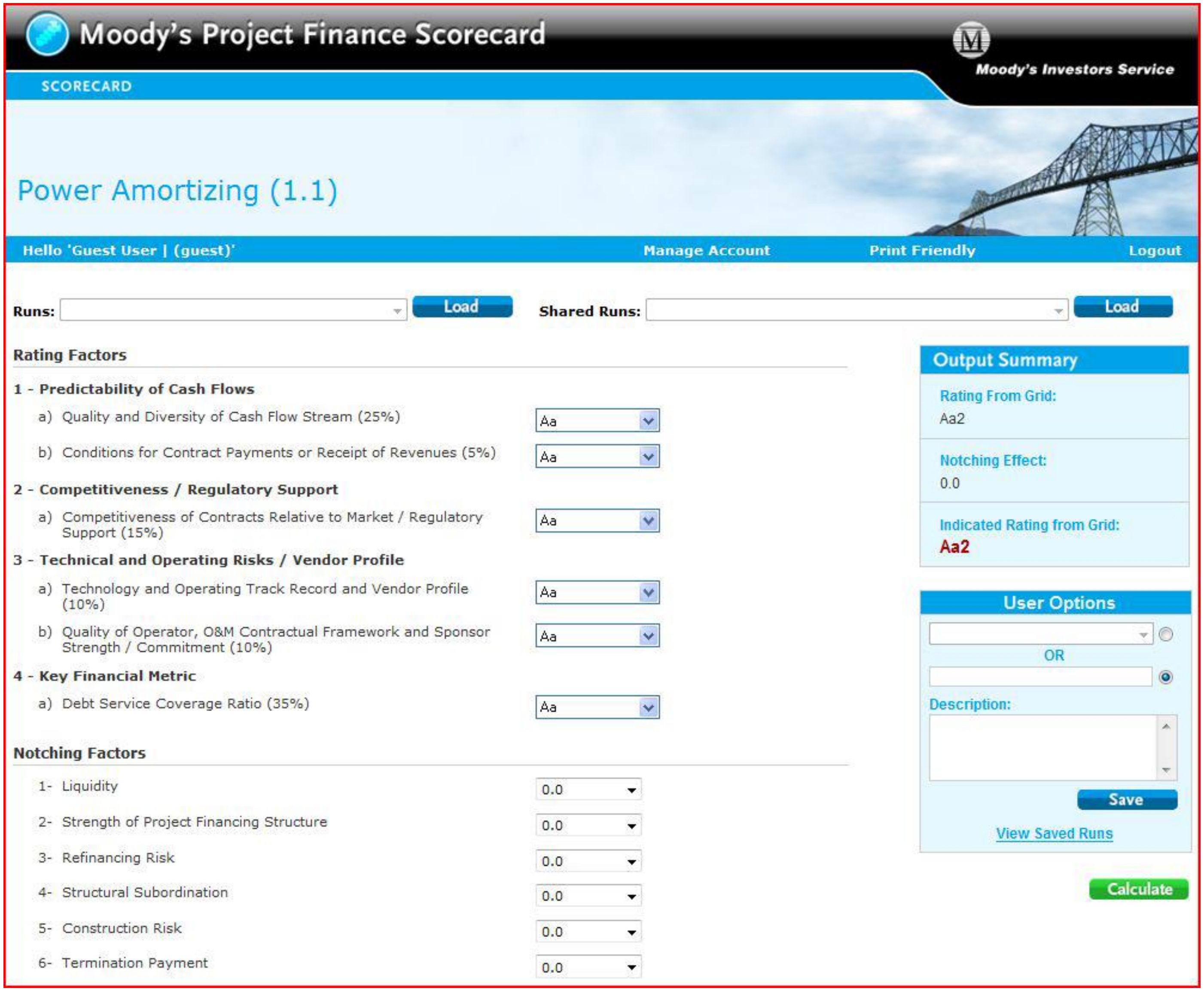
Rating Category	Aa	A	Baa	Ba	B	Caa
b) Ratio CAFDS to Mandatory Debt Service (15%)	>14x	7.1x–14.0x	3.6x–7.0x	2.5x–3.5x	1.3x–2.4x	< 1.3x

Sub-Factor (c): Total Debt / Total Capitalization (10%)

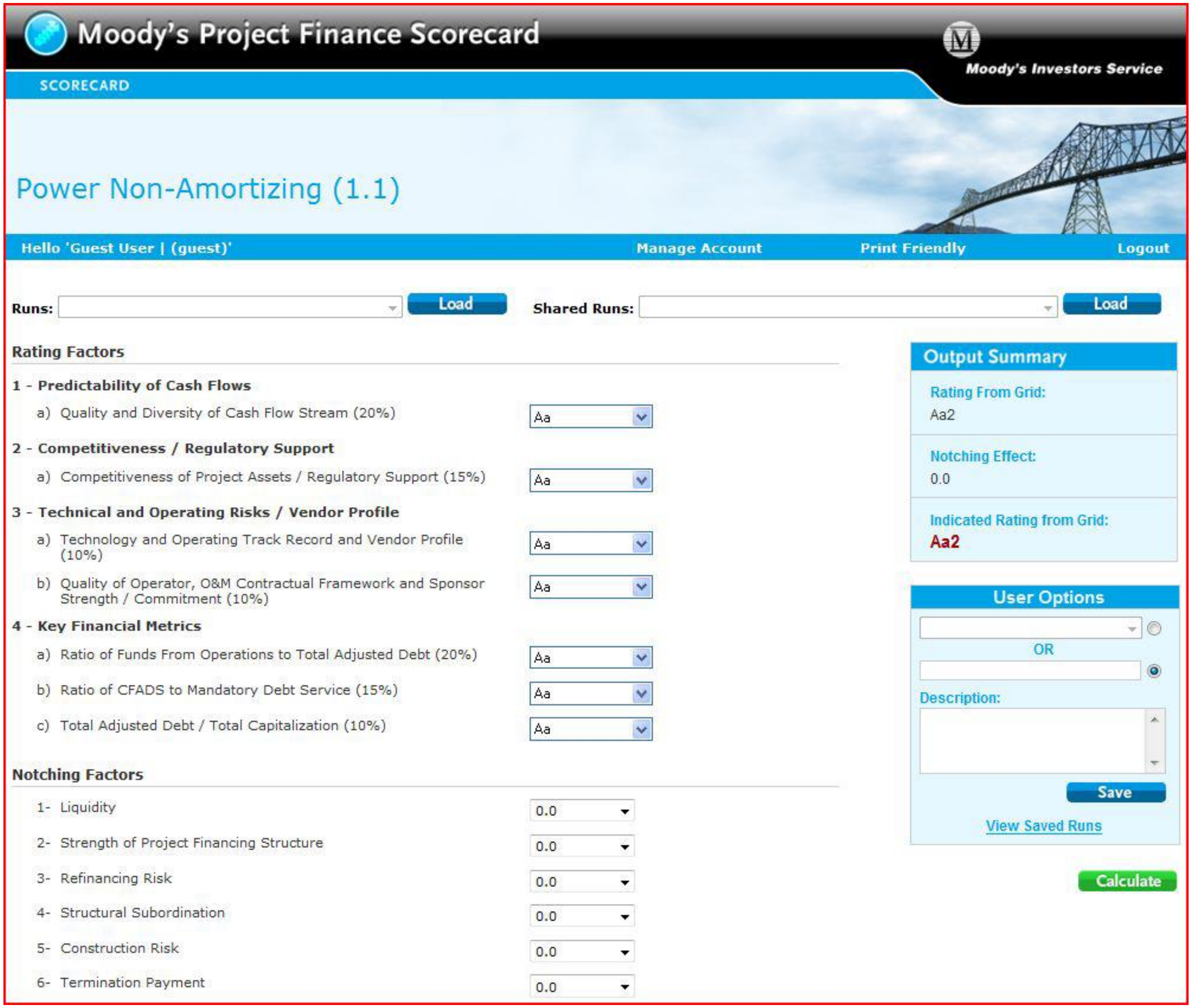
Rating Grid Mapping

Rating Category	Aa	A	Baa	Ba	B	Caa
c) Total Adjusted Debt / Total Capitalization (10%)	<20%	20%–35%	36%–50%	51%–60%	61%-80%	more than 80%

Rating Scorecard – Moodys



Rating Scorecard – Moodys



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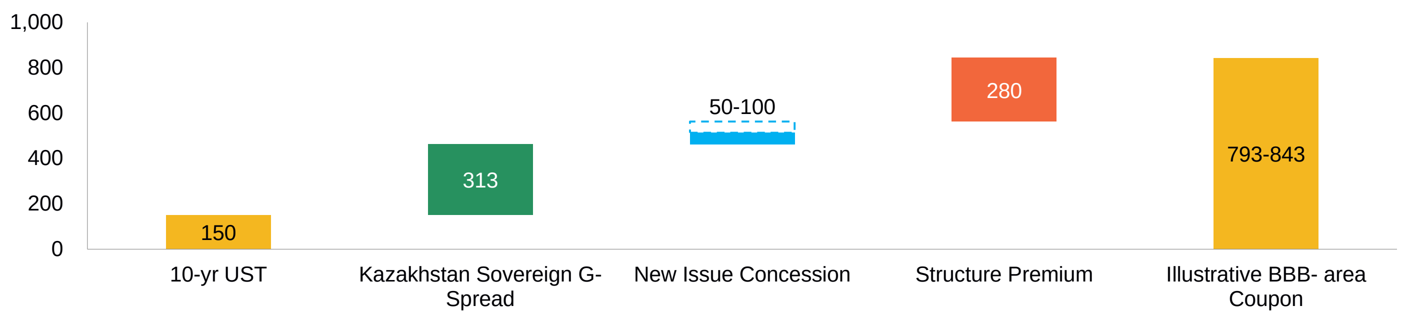
Illustrative Pricing Rationale

- Pricing rationale illustrated here assumes trading levels as of today and, for a closing in the future, is subject to rate risk and market uncertainty
- These pricing considerations are illustrative and dependent on achieving the assumed rating as well as liquidity / structure concessions without further deterioration in market conditions
- To refine these views, additional diligence would be required as well as further discussions

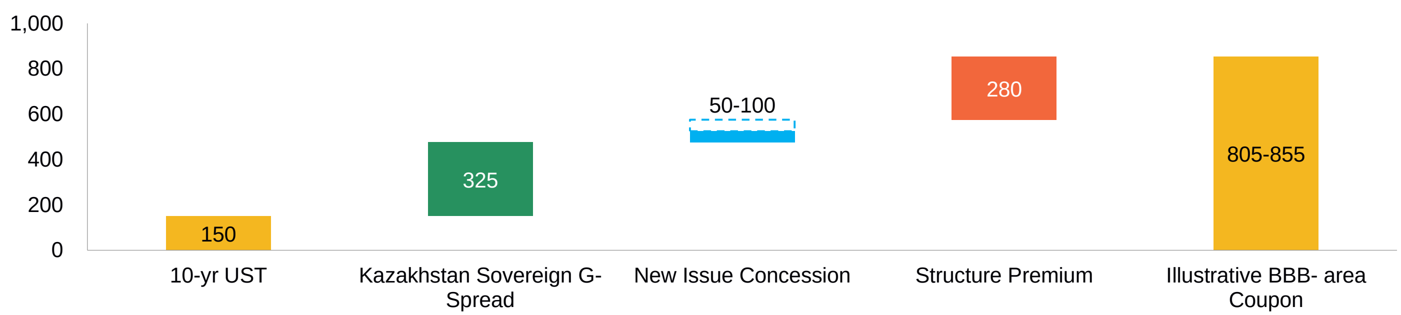
Illustrative 10-Year Bullet Bond

Pricing Rationale



Illustrative 20-Year Amortizing Bond (~15-Year WAL)

Pricing Rationale



Section 2

Project Finance Overview

Financing Alternatives

Recourse vs. Non-Recourse

Recourse → Non-Recourse

	Recourse to Parent	Completion Guarantee	Base Case Costs with Contingency	Wrapped EPC Contract with Contingency
Description	debt would be guaranteed on a several basis by the Sponsors	Sponsors would provide a several guarantee to complete project • Partial guarantee for specific risks (permitting, ROW, etc.) also possible	Sponsors provide several guarantee to cover base case costs and contingency • Contingency set by IE on all non-fixed costs	Sponsors provide several guarantee to cover base case costs and contingency • Requires fixed-priced, date certain EPC contract with reputable contractor • Contingency set by IE on costs outside scope of EPC
Theoretical Maximum Exposure to Sponsor	Entire debt amount for full tenor of the debt	Entire debt amount until COD, none thereafter	Base case costs and contingency net of equity spent to date and debt proceeds	Base case costs and contingency net of equity spent to date and debt proceeds
Benefits	• Less lender diligence necessary to evaluate credit risk • Potentially higher bank appetite for loan • Lower cost of debt	• Less lender diligence for construction required • Sponsors' obligation to lenders falls away at COD along with any ratings consolidation	• Lower credit exposure for Sponsors • Rating agency consolidation unlikely	• Lowest credit exposure for Sponsors • Lowest overall cost risk for Sponsors
Considerations	• Maximizes credit exposure for sponsors • Debt would likely be consolidated for ratings purposes	• Sponsors retain credit exposure during construction • Higher cost of debt than full recourse	• Higher cost of debt • More involved construction diligence • In-depth independent engineer report and contingency estimate • Potentially lower bank lending appetite	• Requires fully wrapped EPC contract • Higher base case cost

Project Finance Framework

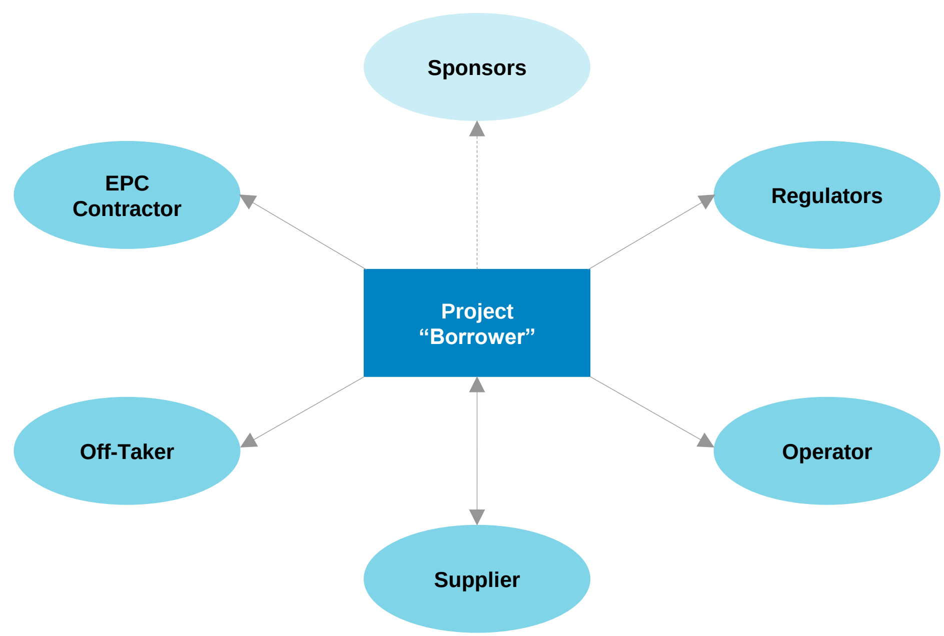
- There are typically many participants involved in project financings, each of which is best suited to assume or mitigate certain risks
  - A successful financing structure entails a satisfactory economic allocation of all project risks among the various interested parties

Counterparty

- Project Sponsor
- EPC Contractor
- Project Off-Taker
- Project Supplier
- Operator
- Sub-Contractors
- Equipment Supplier
- Local and Federal Regulatory Agencies

Risks

- Construction Risk
- Feedstock Risk
- Market Off-take Risk
- Operating Risk
- Equity Risk
- Technology Risk
- Regulatory Risk
- Creditworthiness Risk
- Financial Market Risk



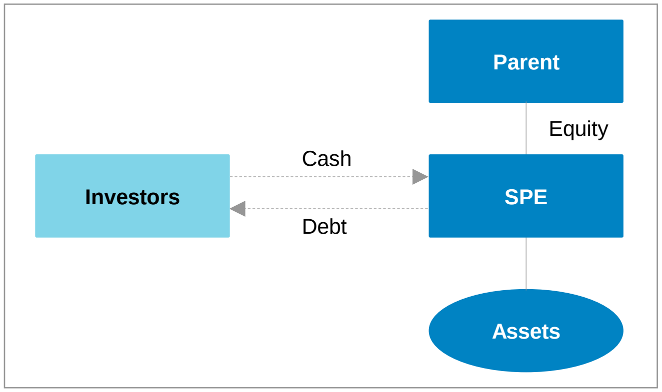
Structure Overview

Project Finance Is a Proven Technique to Finance Capital Intensive Assets

Overview

- Assets are isolated in a newly formed special purpose entity ("SPE")
  - SPE is ring fenced from parent credit and structured to be bankruptcy remote
- SPE raises debt to the assets
  - Proceeds are distributed to parent or used to build new project
  - Debt is non-recourse to Parent

Structure



Benefits

- Risk mitigation structure
  - Debt is non-recourse to parent
  - No cross—default/acceleration
- Capital optimization
  - Project leverage typically higher than parent company leverage
  - Cost of capital advantages depending on debt and equity mix
  - Access alternative source of capital

Considerations

- Despite non-recourse structuring Rating Agencies may attribute debt
- Debt can be more expensive than corporate debt
- More complicated structure
  - Need for separate accounting/financials
  - Arms-length dealings with affiliates (e.g., PPAs, O&M Agreements, etc.)
- More complex and time-consuming to execute

Project Factors Affecting Financing

Project Economics	• Construction budget and contingencies will need to be analyzed and sized appropriately • Leverage will be based upon certainty of cash flows during operations, which will be the basis for target debt service coverage ratios – Contracted cash flows – Regulated cash flows
Equity	• Equity commitments/support requirements • Partner credit quality, if applicable • Independent engineer ("IE") will opine on appropriate sizing and contingency
Technological/ Operational	• Proven technology • Operation and maintenance with experienced operator • Independent engineer review of operating cash assumptions and operating constraints in the O&M agreement, as well as a completion certificate verifying that the project is operating in line with pre-determined standards
Construction/ Completion Risk	• Ensure projects are completed on schedule and within allocated budget • Delays—additional costs and averse effect on project economics • Easements, eminent domain delays • Liquidated damage/contingencies to be reviewed by IE • Development/pre-construction works • Budget and timing of expenditures pre-construction • Draw down schedule for construction
EPC Structure	• Strength of EPC contract and or supplier commitments and credit quality • Alternative EPC forms to the traditional fixed priced turn key agreements require additional independent engineer review, high contingencies and, in some cases depending on IE input, contingent equity • Shared Risk/Target Price EPC and EPCM agreements include additional incentives and fixed and variable portions of the contract

Project Finance Structural Features

Traditional Project Finance Structural Enhancements Should Allow Higher Leverage for a Comparable Rating and Offset the "Single Asset" Risks

	Description	Rationale
Amortization	Amortization sculpted to targeted DSCR based on cash flows	Amortization matches economic depreciation of asset and addresses finite life of asset
Security	First priority security interest in all assets, including: asset, equity in SPE, project accounts, and project documents	Enhances recovery value
DSRA	Debt service reserve account ("DSRA") sized to cover unexpected interruption in cash flow	Adds liquidity and reduces probability of missing a debt service payment
Cash Waterfall	Independent trustee controls the project cash flow	Prioritizes debt service payments and prevents cash leakage
Restricted Payments Test	Dividend distribution subject to historical and projected minimum DSCR (1.20x DSCR is benchmark for investment grade contracted or highly regulated assets)	Restricted payment test forces cash to be trapped in the unlikely event the coverage ratios decline
Covenants	• Restrictions on business lines • Limitations on liens • Additional indebtedness limited and subject to ratings affirmation • Restrictions on amending/entering contracts • Maintenance of insurance	Affirmative and negative covenants are designed to protect the asset value and cash flows

Key Structural Issues—Cash Flow Analysis

The "Waterfall“

$ → Revenues	• Revenues collected in segregated Revenue Account and applied to periodic "waterfall"	• Revenue Account is pledged to lenders
Operating Costs	• O&M expenses • Capital expenditures • Taxes	• O&M agreements [can.minimize] volatility • Capex limitations
Debt Service	• Interest payments • Principal amortization sculpted to achieve targeted DSCR	• Coverage level will be function of cash flow volatility and nature of asset (1.30x–1.50x DSCR)
Reserve Accounts	• Debt Service Reserve typically sized to cover 6-months mandatory debt service • Major Maintenance Reserve/OpEx Reserve	• New technologies may a require reserve account for major repairs • OpEx reserve protects agreement OpEx overruns
Dividends → $	• Restricted payments test based on DSCR limits distributes to equity • Typically sized at minimum of 1.20x DSCR	• Other conditions to distributions – No Default or Event of Default – Reserve Accounts fully funded

Financing Options

Project Financing Can Range from Being a “Traditional-restrictive” Transaction to a More “Corporate-style” Depending on the Nature of the Business Being Financed

- Potential application for Exelon
  - Transmission—financing for new projects or separation and stand-alone financing for existing assets
  - Renewables—build out of portfolio of wind and/or solar generation
- Financing can be put in place during construction or post-COD
  - Construction financing is available provided the construction risk is properly mitigated
  - Post-COD financing removes the construction risk

Range of Financing Options

Construction Project

- Asset level financing in place prior to operations
- Requires mitigation of construction risks in order to provide comfort to lenders/investors

Project-Style

- Asset level financing with structural protections typical in a project financing
- Suitable for discrete assets with a finite life

Corporate-Style

- Asset level financing with corporate style covenant package
- Applicable for portfolios of projects, entities that have additional growth prospects/conservative systems and credit profile

Construction Financing Options

Options Range from Corporate to Project Level Financing

Financing Option	Considerations
• **Equity Financing:** Owners agree to 100% equity finance the project – For JV each member contributes pro-rata equity to the project as it is developed	• Utilizes owners debt capacity • Lack of overall leverage may impact returns • Straight forward execution • Leverage can be added at COD
• **Member Guaranty:** Project raises debt to fund construction and owners provide guaranty	• Guaranty may fall away after completion • For JV counterparty credit may need to be backstopped (letter credit) • Joint or joint and several guaranty
• **Non-recourse:** Project is financed with non-recourse debt during construction and each member commits to fund equity	• Lower rated counterparty in JV may be required to fund equity upfront to avoid “weak link” • Less flexibility due to project restrictions • Requires risk mitigation through EPC contract/construction arrangements

Rating Agency Considerations for Project Finance

The Rating Agency Analysis of “Adding Back” Non-Recourse Project Debt in Parent Debt Ratios is Closely Related to “Parent-Subsidiary” Credit Links Analysis

- Key considerations include
  - Business or asset are “non-strategic”
  - Core vs. non-core nature of assets
    - Willingness to “walk”
    - Importance of the cash flows
    - Absolute size of investment relative to parent company's size
    - Likelihood that project company would require parent company support
  - Is asset “integrated” into broader business
    - Ownership control and strategic importance
    - Ongoing required support
- Legal separation and obligations
- Arms length third-party dealings
- The rating agencies use the following spectrum as an analytical starting point (“consolidated”—“add back”)

Investment/Non-Consolidation ⟷ **Integrated Business/Consolidation**

• No consolidation • No additional investment expected • Analyze dividends	• No consolidation • Anticipate additional investment	• Pro rata consolidation • Anticipate additional investment	• Full consolidation • Anticipate additional investment

Project Finance Financing Markets

Investment Grade Bond Market

Structural Features

- Less stringent covenant requirements
- Maturity: 20+ years
- Ratings: 1 or more rating required (BBB-)
- Risk appetite: Low to Medium
  - Mitigated through long-term contractual arrangements with strong counterparties
- Leverage capacity
  - Driven by commercial arrangements
  - Equity support characteristics and size commitment
- Amortization—Bullet, amortizer or mix (driven by refinancing risk)

Pros

- Deep and broad market
- Lower debt costs
- Fixed interest rates
- No maintenance covenants
- Ability to stagger maturities

Cons

- High negative carry for construction financing
- High prepayment costs\
- May require pro-rata equity contributions
- Less comfortable with construction risk

Commercial Bank Market

Structural Features

- Stringent covenant requirements
- Maturity: ~7–15 years
- Ratings: Not required
- Risk appetite: Low to Medium
  - Mitigated through long-term contractual arrangements with strong counterparties
- Leverage capacity
  - Driven by commercial arrangements
  - Equity support characteristics and size commitment
- Amortization—Fixed and/or sweep mechanism

Pros

- Lower debt costs
- Lowest negative carry (draw down during construction)
- Flexibility/tailored to credit
- Sophisticated investor base
- Pre-payable with little to no incremental cost

Cons

- Interest rate volatility
- Tightest financial covenants and CPs
- Market depth

Term Loan B Market

Structural Features

- Stringent covenant requirements
- Maturity: ~7 years max
- Ratings: Required (B2/B minimum)
- Risk appetite: Medium to High
  - Mitigated through long-term contractual arrangements with strong counterparties
- Leverage capacity
  - Driven by commercial arrangements
  - Equity support characteristics and size commitment
- Amortization—Sweep mechanism (driven by refinancing risk)

Pros

- Deep and broad market—ratings driven
- Sophisticated investor base
- Pre-payable with little to no incremental cost

Cons

- Higher debt costs
- Negative carry (delayed draw option—max 18 months)
- Interest rate volatility
- Financial covenants
- Required sweep mechanism

Project Finance Alternatives

	Loan Financing	Bond Financing	Hybrid (Loan / Bond) Financing
Description	Senior Secured Loan	Senior Secured Project Bond	• Senior Secured Loan • Senior Secured Project Bond
Illustrative Structure	Loan: 70.0% Equity: 30.0%	Loan: 70.0% Equity: 30.0%	Loan: 35.0% Bank: 35.0% Equity: 30.0%
Sizing Methodology	Sized to amortize within [x] years with [x%] sweep [x]	Sized to amortize within [x] years while targeting [x] DSCR	• Bank: Sized to amortize within [x] years with [x%] sweep • Bond: Sized to amortize within [x] years while targeting [x] DSCR
Tenor	5-7 years	Typically through the tenor of the PPA if any	• Loan: 5-7 years • Bond: Through the tenor of the PPA
Target Ratings	BB/Ba2	BB/Ba2	BB/Ba2
Benefits	• Delay draw minimizes negative carry during construction • Prepayable at par (however may result in swap breakage cost)	• Longest tenor • Less restrictive covenant package than bank market • More flexible change of control provisions • Private placement offers delayed draw • Deeper market and investor base	• Positive attributes of both a bond and a bank financing • Ability to maximize tension between the two investor market; perhaps resulting in better pricing and terms
Considerations	• Limited tenor • Execution risk: "herding" significant number of banks to be on same page; subject to final credit committees • Longer execution period • More restrictive covenant package in comparison to the capital markets • More restrictive change of control provisions • May take-up bank capacity for Sponsor on other projects • Smaller market and dealing with individual banks	• Make-whole premium • Negative carry (although may be mitigated through the usage of delay draw feature) • Ratings requirement	• Sub-optimal size for two tranches (separation of financing into two tranches results in relatively small loan and bond financings) • Complexity / execution risk associated with intercreditor considerations • Overall, higher price on bond due to higher weighted average life • Terms are lowest common denominator between the various investors/banks

Construction Financing Options

Pipelines and Other Large Projects Have Used Three Primary Approaches to Financing During Construction

Construction Financing Options

	Corporates Level Financing	Partial Recourse	Project Financing
Description	Project capex is funded with Partner level equity and debt similar to other growth projects	Partners provide guaranty of project debt during construction	Partners commit to equity and debt is raised without direct Partners support
Issuer	Corporate Entity	Project Entity	Project Entity
Recourse	Full faith and credit of Partners	Recourse through guaranty	Non-recourse to Partners
Construction Mitigation	Not required	Not required	Requires risk mitigation through construction arrangements or sponsor commitment
Considerations	+ Ease of execution + Typically low cost alternative – Utilizes corporate level debt capacity and may strain credit metrics – Does not diversify funding sources	+ Avoids time and cost associated with non-recourse construction facility + Pricing does not incorporate construction risk – Requires standalone documentation and operation of project company	+ Recourse can be limited or Contingent – Complicated and time consuming to execute – Highest cost alternative
Precedents	Southeast Supply Header (CenterPoint Energy and Spectra Energy)	Rockies Express (Kinder Morgan Energy Partners, ConocoPhillips and Sempra Energy)	Ruby (El Paso/Global Infrastructure Partners)

Section 3

Project Bond Overview

Indicative New Issue Timeline

144A Transaction Takes Approximately 12 Weeks to Complete

- This illustrative execution timeline considers a 144a offering, providing access to the hundreds of investors globally with appetite for single-asset / structured credit risk
- The execution timeframe shown here meets the 3-month period (start-to-finish) customarily required to structure and arrange such transactions
- Execution period will ultimately depend on timely performance of third party due diligence, Rating Agency process, investor marketing… and ECA process

How The Bank/ECA and Bond Processes Work Together

Base Case

Bank/ECA Process	ECA Diligence and Documentation	Documents In Final Form but Not Executed	Execute Only After Bond Has Priced	Fund
Bond Process	Bond Diligence, Rating Agencies, and Documentation	Announce Bond, Market, and Price	Execute	Fund

Conservative Case

Bank/ECA Process	ECA Diligence and Documentation	Documents In Final Form but Not Executed		Execute Only After Bond Has Funded	Fund Within 30/60 Days
Bond Process	Bond Diligence, Rating Agencies, and Documentation	Announce Bond, Market, and Price	Execute	Fund	

144A/RegS Documentation & Disclosure Summary

US144A Documentation and Disclosure Summary

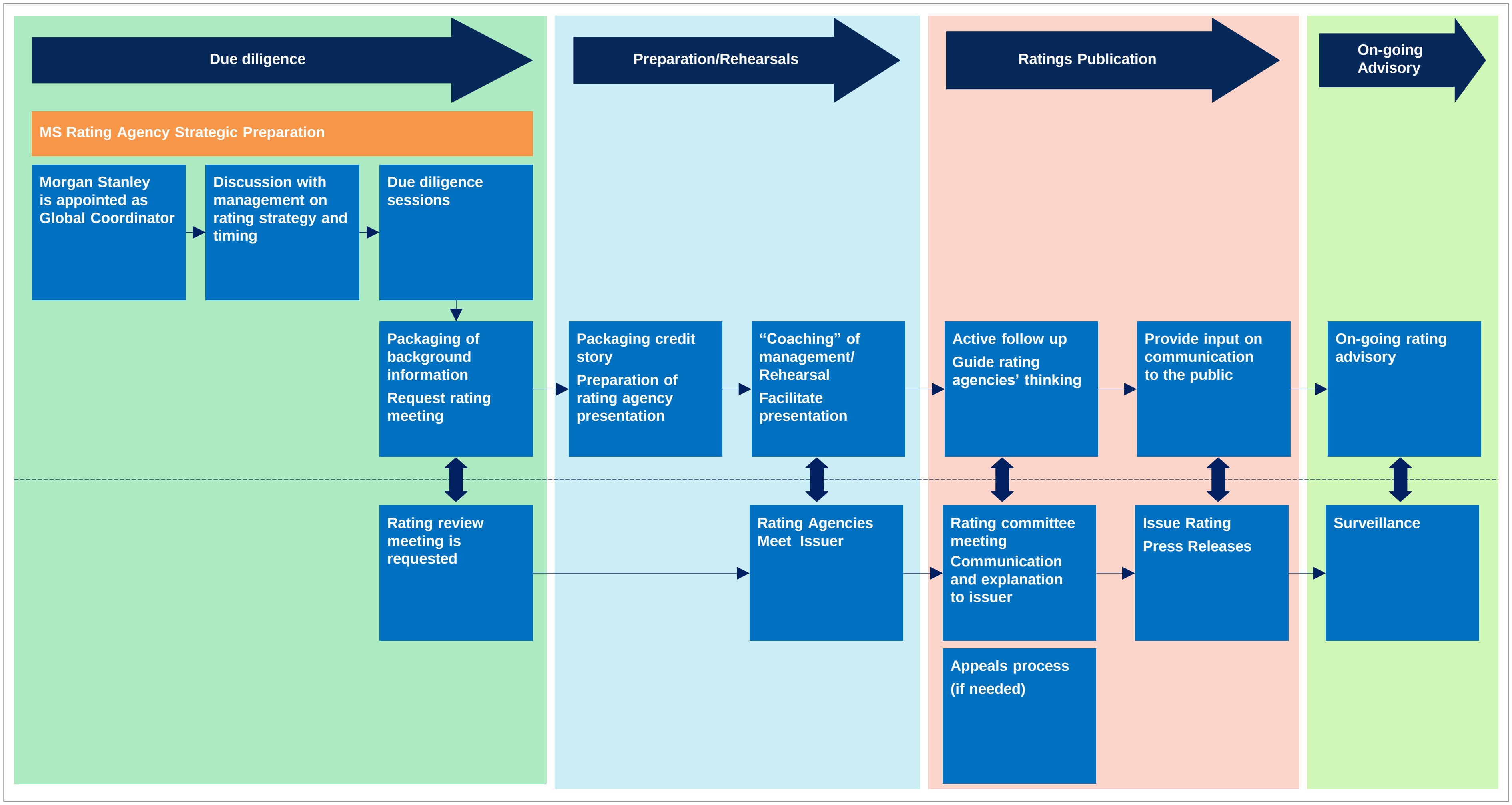
Document	Overview
Offering Memorandum	• Document sent to investors describing the issuer and the securities being offered for sale
Purchase Agreement & Term Sheet	• Contract between issuer and underwriter governing the sale of securities • Contains standard representations, warranties and covenants of Issuer, indemnification and market-out provisions • Pricing Term Sheet summarizes the key commercial terms
Indenture (or Fiscal Agency Agreement)	• Document between Trustee and Issuer governing the responsibilities of both during the term of the Notes to one another and to Noteholders • Contains standard covenants
Security Documents	• Documents that, among other purposes, grants a blanket lien on all assets of the Issuer, pledges the equity in the Issuer, consents to collateral assignment of material documents, establishes the project accounts and “waterfall” payments
Registration Rights Agreement	• If applicable, Issuer may need to agree to file with the SEC a registration statement registering the exchange of registered notes for the private notes, so that they become freely tradable in the secondary market
Comfort Letter	• Letter delivered by accountants stating they have reviewed the Issuer’s financial statements and that they comply with GAAP
Legal Opinions	• Delivered by Issuer’s and Underwriter’s counsels • Each counsel opines that the Issuer has the authority to enter into the transaction, the securities have been validly issued and are enforceable obligations and that the OM does not contain any material misstatements or omissions (“10b-5 opinion”)
Officer’s Certificate	• Certificate from Company’s officer stating that the representations and warranties in the Agreement are true and correct, as well as that there has been no material adverse change (“MAC”) in the Company’s business from what has been disclosed in the OM
Other Items	• Rating Agency Letters from Fitch, S&P and/or Moody’s • Funds Flow Memo, Cross Receipts, Authentication Order and the Notes themselves

US 144A Offering Memorandum Overview

Sections	Overview
Cover Page	• Describes principal terms of the offering
Inside Cover Page	• Legends advising investors that the securities have not been registered with the SEC
Summary	• Summary description of the Company, principal terms of debt securities, summary financial data
Use of Proceeds	• Use and application of funds
Capitalization	• Capitalization table for most recent period
Selected Financial Data	• Financial table covering last five fiscal years and most recent stub period
Description of Business	• Comprehensive discussion of the Company’s business similar in scope to that required by Form 10-K, covering: material properties, principal services and products rendered, principal markets, customer base, competition, foreign operations, legal proceedings (if material)
Description of Management	• List of directors and officers with one paragraph biographies
Management’s Discussion and Analysis	• MD&A for last three fiscal years and any stub period
Description of Notes	• General discussion of terms • Covenants (which will likely include change of control)
Audited Financial Statements	• Covers last three fiscal years and unaudited financial statements (stub period and comparable period in prior fiscal year)
Expert Reports	• Independent Engineer Report • Any Market Consultant Report

Overview of the Credit Rating Process for a First-Time Rating

Morgan Stanley's Involvement Throughout the Ratings Process

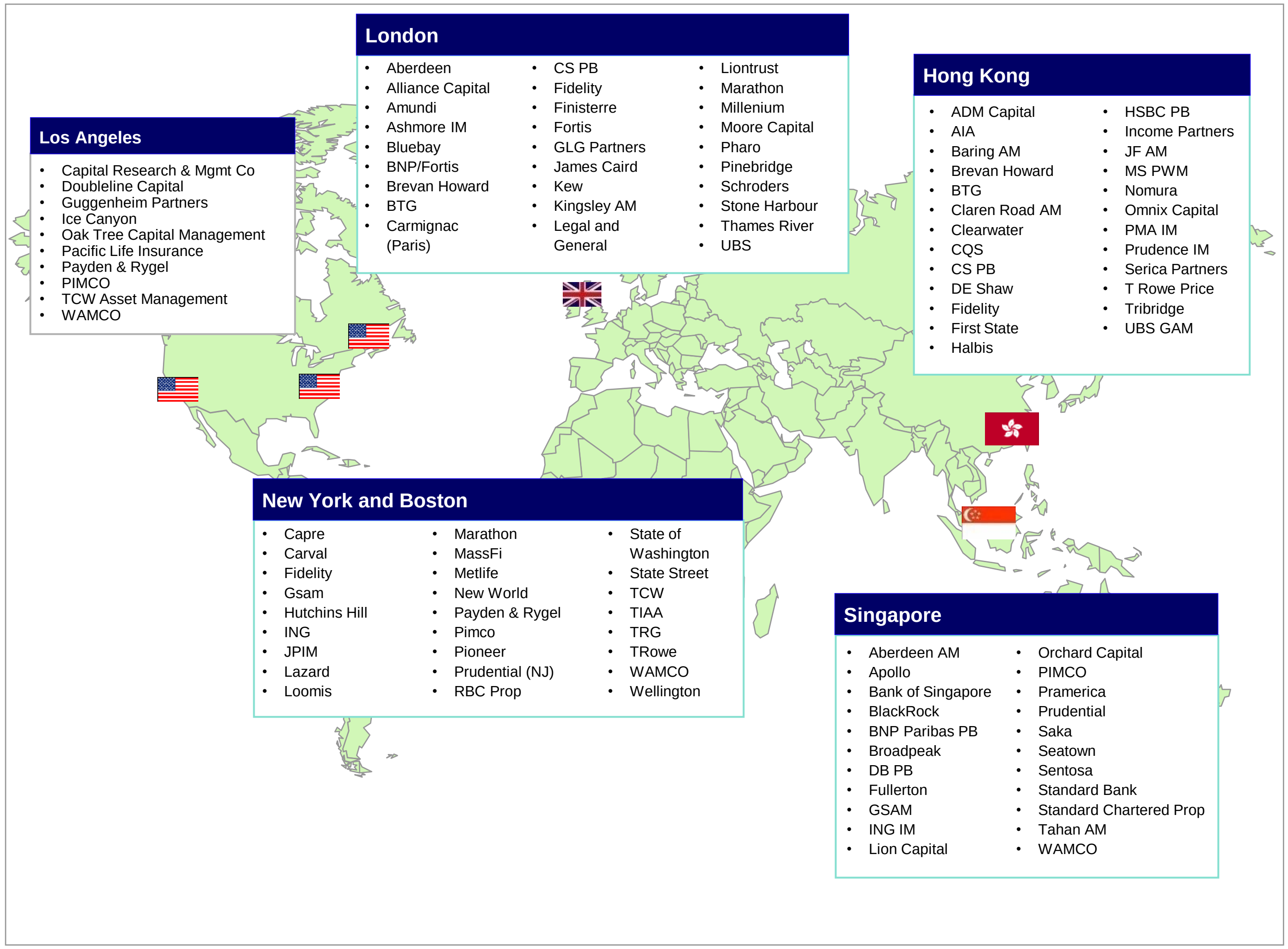


KOPIA
KOREA PLANT INDUSTRIES ASSOCIATION

Illustrative Roadshow Strategy

- Morgan Stanley's strategy for a successful and well-executed bond offering focuses on reaching the largest and highest quality investor base to maximize pricing leverage and quality of order book
- We recommend visiting the main accounts in Boston, New York, Los Angeles, London, Hong Kong and Singapore
- Meetings will be both 1-on-1 with portfolio managers or small group meetings / lunch
- We also encourage holding 1-on-1 conference calls and uploading a Net Roadshow to reach a further base of investors in other locations

Proposed Global Roadshow Destinations and Illustrative Target Investors



Morgan Stanley

Execution De-Risking for Wall Crossing

1

No-Names Market Sounding

Course of Action:
1) Engage Morgan Stanley
2) Reach out to 5-10 key accounts
3) Provide the Issuer with feedback/comfort on executability

2

Structure the Transaction and Obtain Final Ratings

3

Pre-Marketing Prior to Bond Announcement

Formal Protocol Involves:
1) Wall Cross investors, potentially restricting them from trading the Issuer's bonds
2) Share a "pink" version of the Offering Memorandum ("OM"), which should be in near final form
3) In-person meetings with a detailed script, keeping a log on meetings with no materials left with accounts
4) Further confirm appetite and de-risk execution

4

Announce to Broader Market

1) Re-circulate a redline of the OM (vs. the pink version previously circulated) to the Pre-Marketing accounts
2) Global Marketing effort
3) Pricing / Closing

10b5 Legal and Business Due Diligence Requirements

Sample 10b5 Legal and Business Due Diligence Checklist

- To the right shows a sample 10b5 Legal and Business Due Diligence Checklist
- In connection with the Business Due Diligence, there are specific accounting requirements for the disclosure of financial statements
  - Financial statement requirements are:
    - three years of audited financials (or such shorter period for which the issuer has been in existence)
    - interim financials of at least six months if the Offering Memorandum date is more than nine months after the latest year end
  - If the issuer has interim financial statements for a shorter period (say the first quarter or six months or nine months), then these should be used

Requirement	Nothing Material	All Delivered
Organization and Records		
- Formation Documents, Corporate Books, Board Members and Committees materials/ Ownership Organizational Chart / Jurisdiction List, Taxpayer Registry		
Financing		
- Schedule of the outstanding debt and related documentation and agreements - Material correspondence with Lenders including regarding any defaults on any interest on or principal - Documents on borrowing restrictions, subordination agreements, covenants lists		
Governmental Regulations and Filings		
- Governmental Filings, material permits, licenses, correspondences - Notices or correspondence with regulatory authorities		
Material Contracts (Other than Financing Contracts)		
- Revenue and Supply Contracts, Utility (Power / Water) Contracts, O&M Contracts, Leases etc - List of Event of Defaults / Termination		
Litigation		
- List of all pending or threatened claims, suits, actions - List / copies of reports or correspondence in respect of any inquiries from governmental agencies - All material compliance reports issued by the Issuer to federal, state or local government agencies		
Real Property		
- List and provide copies of all documents evidencing material real property owned or lease by Issuer, all permits, franchise, easement or right to use real property		
Environmental Matters		
- Reports relating to environmental assessments, audits/ Communications to and from federal, state or local governmental entities - Documents relating to presence and or use of landfills, waste disposal areas, hazardous waste - Financial information (e.g., capital and operating budgets, accruals or reserves) for environmental compliance and cleanup expenditures		
Regulatory Matters, Government Approvals and Permits (Excluding Environmental)		
- List, describe and provide copies of all material permits, licenses, authorizations or approvals by or from any international, federal, state or local governmental authority or agency - Any outstanding court or administrative orders or decrees or correspondence, memoranda or notes relating to the Issuer		
Insurance		
- List all material existing and prior insurance policies relating to or entered into - All insurance analyses or reports prepared internally or by consultants		
Auditors' Reports and taxes		
- All management reports from the auditors and the responses / Any internal audit - Schedule describing any ongoing tax disputes or pending tax proceedings - Any tax sharing or similar agreements, and any correspondence relating thereto.		
Other Information		
- All recent diligence or consultant's reports and other analyses / Press releases issued		

Section 4

Selected Case Studies

Longview Power, LLC

$350 MM Senior Secured Credit Facilities

($300 MM Senior Secured Term Loan B Facility / $25 MM Revolving Credit Facility / $25 MM Cash Collateralized LC)

- On April 8, 2015, Morgan Stanley priced a $300 MM Term Loan B offering for Longview Power, LLC
- Morgan Stanley was the Lead Left Arranger/Bookrunner and Sole Syndication Agent
- Morgan Stanley is also the $25 MM cash-collateralized LC Issuer and a Lender to a $25 MM Revolving Credit Facility

Summary of Terms

	TLB
Quantum	$300 MM
Tenor	6 years
Pricing	L + 600 bps
Floor	1.00%
OID	99.0
Rating	B+ (2) / B2
Security	1st Lien

Asset and Situation Overview

- Longview Power, LLC ("Longview") owns and operates a 700 net MW coal-fired power plant located in the PJM energy market in the Mid-Atlantic region of United States
- The Longview plant was constructed using state-of-the-art technology and is the most efficient coal-fired generator by heat rate in PJM
- Longview's parent has two other material wholly owned subsidiaries: Mepco, a captive coal mine that provides minemouth coal directly to Longview via conveyor belt at below market cost, and Dunkard Creek, the water supplier to Longview; all are Guarantors
- Since Longview reached commercial operations in 2011, Longview's financial performance was hampered by a combination of overleverage, soft power market conditions, and certain equipment defects at the physical plant
- As a result of these conditions and related arbitration, Longview filed for Chapter 11 bankruptcy protection on August 30, 2013
  - While under Chapter 11 protection, Longview obtained $150 million of financing through a DIP facility to begin work on a comprehensive rehabilitation program planned over three years
- Longview's bankruptcy exit plan was confirmed on March 16, 2015 and it is poised to emerge from bankruptcy upon completion of the refinancing

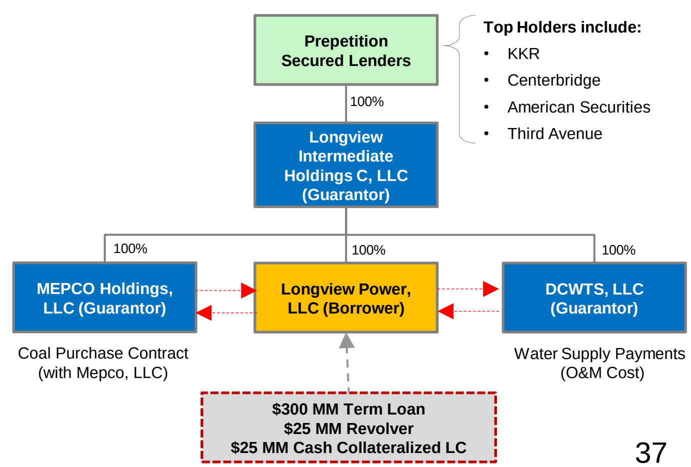
Transaction Overview

- On April 8, 2015, Morgan Stanley priced a $300 MM 1st Lien Term Loan B for Longview Power, LLC
- Transaction proceeds will be used to retire all existing debt, including DIP facility ($128 MM) and certain debt at Dunkard Creek ($21 MM), fund all remaining capex associated with the rehabilitation program, pay a dividend, fund reserves, and pay fees and expenses
- The transaction also includes a $25 MM Revolving Credit Facility and a $25 MM LC Facility cash collateralized by Term Loan B proceeds that will be used for letter of credit requirements and working capital needs
- After completion of the rehabilitation program in late May, Longview will be poised to operate at its projected capacity factor of over 90%

Key Transaction Highlights

- Morgan Stanley provided committed financing to Longview and successfully led the syndication, achieving pricing at L+600 bps with 99 OID, a 25 bps reduction from the tightest end of the price talk and a one point reduction in OID
- Strong investor demand led to an upsize of the Term Loan B by $50 MM
  - The additional $50 MM of debt will be used to provide a dividend to the pre-petition lenders
  - Transaction was more than 3x oversubscribed
- The financing is characterized by a robust financial structure:
  - Traditional project finance style security package including a 100% cash sweep
  - Significant cash liquidity ($161 MM) which includes 2014 Outage Reserve ($40 MM), Balance Sheet Cash ($59 MM), Cash Collateralized LC Facility ($25 MM), Revolving Credit Facility ($25 MM), and Cash Funded Debt Service Reserve Account ($12 MM) covering debt service over the succeeding 6 months
  - Project finance style cash flow waterfall

Simplified Transaction Structure



Morgan Stanley

ALLETE clean energy
SMART. POWERFUL. AHEAD.

SELECTED CASE STUDIES

Armenia Mountain Wind $84.5 MM Project Bond

4(a)(2) Private Placement of Non-Recourse Amortizing Senior Secured Notes

Key Deal Facts

- On October 21, 2015, Armenia Mountain Wind, LLC successfully priced $84.5 MM of Senior Secured Notes with Morgan Stanley as Sole Placement Agent
- Armenia Mountain Wind, LLC is a subsidiary of ALLETE Clean Energy, a wholly owned subsidiary of ALLETE, Inc.

Location Map

Asset Overview

- Armenia Mountain Wind, LLC ("AMW" or the "Project") is a fully constructed and 100% contracted, 100.5 MW capacity wind power generation facility
- The Project is comprised of 67 GE 1.5 SLE ESS wind turbines and achieved COD on December 18, 2009
- Energy and renewable energy credits ("RECs") are sold under two PPAs with Delmarva Power and Light and Old Dominion Electric Cooperative
- Approximately 4% of the Project's revenue comes from PJM capacity payments
- The Project interconnects to the Mansfield-South Troy 115kv transmission line owned by Penelec (Baa3/BBB-, a First Energy company) and operated by PJM

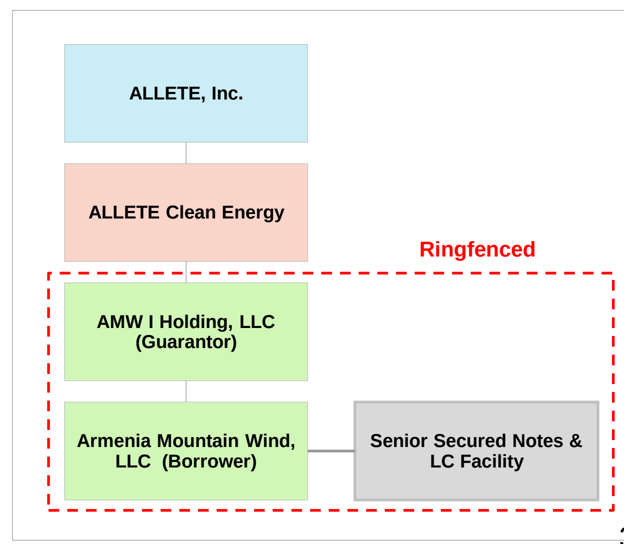
Key Transaction Highlights

- **The deal priced at UST 5 + 190 bps, the tightest spread a project finance wind deal has ever achieved**
  - **Priced inside where comparable solar and wind deals were trading; solar deals typically price significantly inside of wind deals**
- **First wind project bond without an O&M reserve**
- Proceeds from the $84.5 MM offering will be used to repay existing Project debt, pay fees and expenses, and pay a dividend to ALLETE Clean Energy
- Morgan Stanley acted as Sole Placement Agent for the Project Bond, and CoBank provided a $12.5 MM LC Facility

Key Transaction Terms

Offering Format	4(a)(2) Private Placement
Offering Type	Senior Secured Notes
Rating	BBB (Fitch)
Quantum	$84.5 Million
Coupon	3.26% (UST 5 + 190)
Tenor	9.2-year legal / 4.9-year WAL
Reserves	LC-funded DSRA (6 months)

Transaction Structure



Morgan Stanley

American Midstream Midla Financing $60 MM Project Bond

4(a)(2) Private Placement of Non-Recourse Amortizing Senior Secured Notes

Key Deal Facts

- On September 1, 2016, American Midstream Midla Financing, LLC successfully priced $60 MM of Senior Secured Notes with Morgan Stanley as Sole Placement Agent
- American Midstream Midla Financing, LLC is a subsidiary of American Midstream Partners, LP

Asset Overview

- American Midstream Midla Financing, LLC ("Midla") is reconfiguring the Midla Gas System which is comprised of the following:
  - Natchez Pipeline: 52-mile interstate gas pipeline currently under construction in Louisiana and Mississippi
  - Desiard System: 9-mile gas pipeline in the Monroe, LA area
  - Baton Rouge System: 64 miles of gas pipelines in the Baton Rouge area
- Midla's cash flows are underpinned by long term, firm service contracts with creditworthy, investment grade counterparties
- The Midla Gas System is the sole source of supply to several captive end users in the Baton Rouge Market

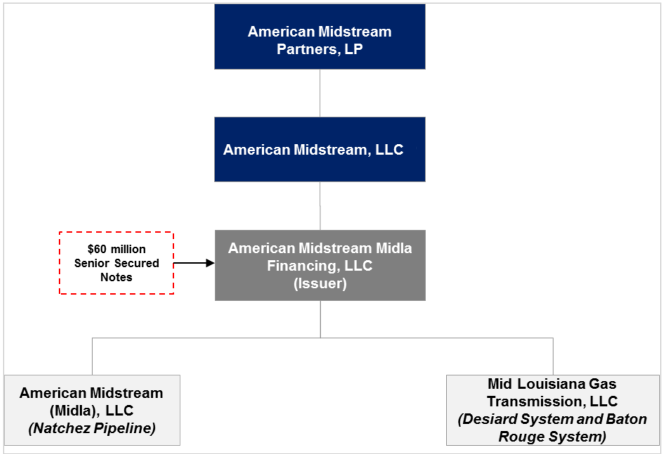
Key Transaction Highlights

- The issuer achieved pricing that matched or beat larger investment grade rated projects
- The transaction was not rated by an agency but was sized to meet their investment grade criteria
- Investors gave the issuer credit for merchant cash flows for captive end users
- Transaction proceeds will be used to complete the construction of the Natchez Pipeline, reconfigure the Desiard System, and pay fees and expenses
- Morgan Stanley acted as Sole Placement Agent for the Project Bond

Key Transaction Terms

Offering Format	4(a)(2) Private Placement
Offering Type	Senior Secured Notes
Quantum	$60.0 Million
Rating	Not Rated
Coupon	3.77% (icur-9 + 225 bps)
Tenor	14.8 year legal / 9.0 year WAL

Simplified Transaction Structure



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