

The two questions, on one page

Chapter 2. Who pays, in five parts; and what happens when they stop, with numbers. If this page cannot be written, the deal is not ready, whatever the base case says.

Project / borrower		Analyst	
Lender / sponsor		Date	

Who pays: the five parts	Answer	Bad answer
The source of the revenue: the economic activity that produces the money		a name on a signature page and nothing behind it
The contractual basis, and every clause that lets the payer not pay (abatement, force majeure, curtailment, change in law, set-off, termination for convenience)		an escape hatch shorter than the loan
The credit of the payer: which legal person, what rating, what guarantee		an operating subsidiary whose guarantee is capped or terminable
The duration: contract years against loan years		a loan that outlives its contract, with the tail sized on a re-letting nobody signed
What the payer receives, and where the price sits against the market from its side		a contract deep out of the money: enforced by drafting alone

What happens when they stop	This deal	Northgate, for scale
Reserve, in months of debt service		6 months: 16.9 million
Cover in year one, and cover at the lock-up covenant		1.826x; lock-up 1.25x
Revenue at which the lock-up trips (as a price per unit)		39.14 \$/kW-month, 30.1% below contract
Revenue at which cover reaches 1.00x		31.81 \$/kW-month, 43.2% below contract
Realistic re-letting or replacement period, and who says so		quarters, not months: the reserve buys two payment dates
What the asset is worth to its second-best user		a question about the interconnection as much as the building
Amount outstanding when the contract ends, and what refinancing it requires		247.2 million; a re-letting at 34.9% of the expiring rent

Chapter 2: the rent ladder is a defence against a lower rent, not against no market. It holds occupancy at one hundred per cent; the only cushion against a gap is the reserve.

Sizing: two tests, and a third for what is left

Chapter 5 and Appendix C, clauses 2 and 2A. Compute both tests, circle the smaller, then test the balance at maturity. Northgate is filled in as the worked example.

Project / borrower		Analyst	
Lender / sponsor		Date	

Test one: what the cash flow will carry	Northgate	This deal
Year-one CFADS, on the definition the credit agreement will use	61.61	
Target cover ratio	1.45x	
Debt service the test permits (CFADS / ratio)	42.49	
Instrument: level annuity or sculpt; rate; amortization profile	annuity, 6.10%, 25 years	
Annuity factor, or present value of the sculpted service	12.663	
LOAN THE COVER TEST SUPPORTS	538.1	

Test two: what the lender will advance against cost	Northgate	This deal
Total uses, including interest during construction, fees and reserve (solved, not plugged)	657.4	
Maximum loan to cost	65%	
LOAN THE COST TEST SUPPORTS	427.3	
THE LOAN: the lower of the two, and which binds	427.3, cost	

Test three: what is left at maturity	Northgate	This deal
Balance at the end of the term (the balloon), and as a share of the loan	247.2, 57.8%	
Contracted CFADS over the term, discounted at the loan rate	691.7	
Loan life cover ratio at close (the floor is negotiated, not computed)	1.619x	
Refinancing lender: advance rate and capitalization rate	65%, 7.25%	
Revenue a refinancing lender needs, per unit	27.58 \$/kW-month	
As a share of the revenue that has just expired	34.9%	

If cover is not binding, a better cover ratio is worth precisely zero: spend the effort on the advance rate, the eligible cost base and the profile. If cover binds, the profile and the CFADS definition are the levers, the ratio the weakest of them.

The CFADS definition, reconciled

Chapter 4. Build it from revenue down, settle the four arguments, then put the model's CFADS row beside the executed definition, item by item, before signing. The highest-value hour of model review.

Project / borrower		Analyst	
Lender / sponsor		Date	

Line	In the model	In the executed definition	Agree?
Revenue as received (not billed, not earned)			
Less operating costs, per the approved budget			
Less cash tax actually payable (standalone or group?)			
Plus or minus the MOVEMENT in working capital (not the balance)			
Less non-discretionary maintenance capital expenditure, or a reserve instead			
Performance deductions: gross, or net of an expected allowance			
Interest on reserve and operating accounts			
Other non-operating receipts (insurance, damages, refunds)			

The four arguments	Resolved in favour of	Worth, in cover or quantum
1. Whose tax: standalone, or group relief the lender cannot reach		
2. Maintenance capex: deducted, or reserved (and is the reserve capped or waivable?)		Northgate: 1.826x against 1.736x on 3.00 a year
3. Performance deductions: modeled in the base case, or only as a sensitivity		
4. Reserve interest: CFADS, or return on the lender's own collateral		

The same year, four definitions (Northgate year 1)	CFADS	Cover
NOI, tax and maintenance below the line	61.61	1.826x
Less maintenance of 3.00	58.61	1.736x
Less cash tax of 4.25	57.36	1.700x
Less both	54.36	1.611x

A cover ratio quoted without its year and its definition is a fact about a spreadsheet. Aurora's CFADS is 34.31, 29.73 or 15.68 depending on nothing but the row: ask which year, then what the series does after.

The waterfall, one year, to the cent

Chapter 3, Appendix C clause 9. Nine tiers, five accounts, one gate. A waterfall that does not reconcile to the cent usually has a tier missing. Northgate's first operating year is filled in.

Project / borrower		Analyst	
Lender / sponsor		Date	

Tier	Northgate year 1	Running balance	This deal	Running balance
Revenue into the proceeds account	64.51	64.51		
Operating costs, per the approved budget	(2.90)	61.61		
Taxes	(4.25)	57.36		
Agency and security trustee fees, lender costs	—	57.36		
Senior interest and hedge payments	(26.07)	31.29		
Senior scheduled principal	(7.68)	23.61		
Debt service reserve restoration	—	23.61		
Mandatory prepayment or cash sweep	—	23.61		
Subordinated and shareholder debt	—	23.61		
Available for distribution, if the gate opens	23.61	—		

The five accounts	Bank, charged to	Balance today
Proceeds account: the single point of entry, payers served with notice		
Operating account: the approved budget		
Debt service account: funded progressively before each payment date		
Reserve accounts: debt service, maintenance		
Distribution account: cash that has passed every test		

The gate: all four on the distribution date	Met?	Evidence
Historic cover over the preceding period above the distribution level		
Projected cover over the coming period above the same level		
No event of default, and no potential event of default, continuing		
All reserves at their required balances (a drawn reserve locks up by itself)		

The residual is the cash the equity is entitled to claim, not the equity's cash flow. On a seasonal asset the waterfall runs more often than the payment dates, against the balance still required.

Sources, uses and the circular reference

Chapter 7. Build the funding table so that it balances by construction, write the loop out, and put a visible convergence check on the summary page, whichever method resolves it.

Project / borrower		Analyst	
Lender / sponsor		Date	

Uses	Formula	Northgate	This deal
Construction cost, all in	the building	614.4	
Interest during construction	construction draws after the equity, plus fee and reserve carried from close	19.7	
Arrangement fee	fee % x loan	6.4	
Debt service reserve	months x the service the loan carries	16.9	
TOTAL USES		657.4	
Senior debt	the lower of the two tests	427.3	
Equity, drawn first	total uses less debt	230.1	

The loop, written out	Northgate	This deal
Fee coefficient (fee / L)	0.0150	
Reserve coefficient (reserve / L)	0.0395	
Interest-during-construction coefficient (IDC / L), at this loan size only	0.0462	
L = advance rate x (construction + sum of coefficients x L)	$L = 0.65 \times (614.4 + 0.1007 L)$	
Solved: L = 0.65 x construction / (1 - 0.65 x coefficients)	427.3 at full precision	
Where the loop is not linear: a MAX, a MIN, a stepped fee, equity-first drawdown	the coefficient moves with L	

Method	Travels?	Audit	Fails how	Our check
Iterative calculation	setting is per application	precedents run in a circle	silently, to zeros or a second fixed point	
Macro loop	blocked in most institutions	traceable	stale values after an input changes	
Closed form	yes	readable	quietly, when linearity breaks	
Unrolled passes, one per column	yes	watch it converge	only if the passes run out	

Contingency: a percentage of the construction lines only, not of development or owner's cost. Commitment fee on the undrawn balance: on Northgate about 0.27 million per ten basis points, funded 65 per cent by the loan.

The covenant package, in dollars of revenue

Chapter 8, Appendix C clauses 7, 10 and 12. Convert every ratio into the revenue that trips it, then negotiate the revenue, not the decimal place.

Project / borrower		Analyst	
Lender / sponsor		Date	

Conversion	Northgate	This deal
Annual debt service (level) or the service in the tightest year	33.75	
One unit of price is worth (e.g. \$1/kW-month x capacity x 12)	1.152 M\$ a year	
Non-recoverable cost added back	2.90	
Lock-up ratio, and the revenue that trips it	1.25x: 39.14 \$/kW-month	
Event of default ratio, and the revenue that trips it	[] (negotiated)	
Revenue at 1.00x	31.81	
Operating freedom: contract less lock-up, per unit and per year	16.86; 19.42 M\$ a year	
Of which: the accident of the binding test (sized ratio less lock-up)	5.86 \$/kW-month	

Sweep trigger	Needed?	Level / percentage	Worth
Cover-based, stepped with cover, set above the lock-up			
Date-based, from a stated anniversary			
Balloon: runs through the contracted years against the bullet			Northgate: 3.46 M\$ a year per 10 points
Refinancing failure: from a target date if not refinanced			

Cure rights	Term sheet	Our position
Maximum number over the life		
No consecutive cures		
Cap on the proportion of a shortfall curable		
Cured period still a lock-up		
Cure applied as CFADS (one period) or as prepayment (every period after)		

Set the lock-up against the cover achieved, not the sizing target: struck at 1.45x on Northgate it would hand back a third of the sponsor's freedom for nothing.

The construction package, tested against the owner's loss

Chapter 9. Three separable questions: is the scope tight enough for the price to mean anything, are the caps sized against the loss, and can the entity behind them pay?

Project / borrower		Analyst	
Lender / sponsor		Date	

Three words	What it buys	Where it leaks	This contract
Fixed price	certainty against a defined scope	variations, change in law, ground conditions	
Date certain	a date backed by damages	extensions of time for excusable events	
Turnkey	one party to pursue	multi-contract: nobody owns the interface	

Delay: the daily cost of a day	Northgate	This deal
Carry on the fully drawn facility, per day	71 thousand	
Deferred revenue, per day	177 thousand	
Liquidated damages rate, per day, and cap in days		
Share of the daily injury the rate covers		
Six months at the end of the build: extra interest at the final balance	13.0 M\$ (against 19.7 for all 24 months)	
Completion support still outstanding during the delay	guarantee, overrun undertaking, standby equity	

Overrun: label the case	Debt	Min cover	Equity IRR
Sizing case: the budget was higher at close (lender funds more than 65%)	512.8	1.521x	12.51%
Stress case: discovered after close, equity funds it all	427.3	1.826x	11.36%
This deal, sizing case			
This deal, stress case			

Completion and security	Answer	Note
Completion test: physical completion certified, performance tests, permits, contracts effective, revenue commenced, reserves funded, forecast cover		
Longstop date, and the margin between it and guaranteed completion		
Performance security: on-demand or conditional; who issues it; when it steps down		
The contractor's accounts: who read them, and was ours the tightest bid?		

The downside pack, labeled

Chapter 15. Three exercises produce different numbers from the same model. Before reading any downside table, find the loan amount in it and write it on the table.

Project / borrower		Analyst	
Lender / sponsor		Date	

Table	Exercise	Loan in it	Does cover move?	Belongs in
	sensitivity / stress / scenario			

Break-evens, in the order a committee should read them	Northgate	This deal
Revenue fall to 1.00x cover (debt held)	43.2%, to 31.81	
Revenue fall to the lock-up (debt held)	30.1%, to 39.14	
Cost rise to a 10% equity return, SIZING case (lender funds 65%)	32.5%, to 8.48 M\$/MW	
The same, STRESS case (equity funds it all)	27.4%, to 8.15 M\$/MW	
Exit: return at the yield on cost, no compression	14.19%, 3.22x	
Exit cap taking the equity return to zero	none: operating cash alone exceeds the check	

Bank case haircut	Applied?	Cover after	Equity after
P90 resource instead of P50			
Contingency treated as spent			
Delay of three to six months, damages at the contract rate			
Operating cost uplift of 10 to 15 per cent			
Merchant price below the consultant's central case			
Revenue re-let well below contract			

Returns printed below a lock-up row measure what the asset generates, not what the owner receives. The test of a bank case is cover above 1.00x and nothing breached beyond what the committee has accepted, not a return.

The counterparty map

Chapter 12. Ask, of every contract in the chain, what happens to the cash flow if this party stops, then describe each at the length its failure deserves rather than at the same length.

Project / borrower		Analyst	
Lender / sponsor		Date	

Party	Legal entity that promised	Rating / guarantor	If it stops	Size of the loss	Support held
Offtaker / tenant			revenue stops		
Construction contractor			the asset stops		
O&M; provider			performance, then revenue		
Hedge counterparty			unhedged when rates have moved		
Account bank			holds every dollar		
Tax credit buyer			the credit's cash		

Ability and willingness	Answer
Contract price against the market at signature, from the payer's side	
The same in year ten, on the model's own forecast	
The payer's cost of walking away	
Assignment: may the payer assign, to whom, with what minimum rating?	
Direct agreement: notice, right to remedy, step-in, cure period	

Credit support ladder	Held	Amount / months	Trigger and cure period
Parent guarantee: where the guarantor sits against the group's assets			
Letter of credit: sized in months of revenue (six months of Northgate's rent: 32.3)			
Cash collateral, outside the insolvency estate			
Downgrade trigger: the level, and a curable cure period			

Cover ratios rank the consequences of failure, not the likelihood of it: the better credit can carry the higher ratio when its downside is a cliff and the other's a slope.

Rates and policy: the exposures no party signs for

Chapter 13. Take the all-in rate apart, price the break at the planned exit, then walk a change in the fiscal regime through the contract chain until someone absorbs it.

Project / borrower		Analyst	
Lender / sponsor		Date	

The rate	Northgate	This deal
Swap (market, struck at or before close)	4.10%	
Margin (the lender's price, negotiable)	2.00%	
Share of the balance hedged; notional steps down with amortization		
Balance at the planned exit, and years of swap unrun	325.6; five years	
Break cost per 100 bp of rate move (not computed in the book: see case two)		
Exit cap moved with the rate in the joint case?		

The regime changed the day after close: which contract absorbs it?	Absorbs it?	Why
Offtake agreement: change-in-law clause, and does it reach a credit the buyer never agreed to pay for?		
Construction contract		
Operations agreement		
Credit agreement: relief, or a default on loss of qualification?		
Credit transfer agreement: the indemnity runs from seller to buyer		
THE EQUITY		by default, in full

Fiscal exposure	This deal	Aurora
Return with the incentive, and without it		5.59% and 0.13%
Grandfathering: fixed by date, what remains live, continuity conditions		
Recapture: triggers, period, and whether the planned exit is one		
Monetization: buyer, discount, date of cash, bridge interest		7% discount: -0.61 pt; 12-month lag: -0.43

The term sheet, where the effort belongs

Appendix C. Every clause with its number and the question a sponsor should put to it. Blanks stay blank until a model or a negotiation fills them: an invented number is indistinguishable from a modeled one.

Project / borrower		Analyst	
Lender / sponsor		Date	

Clause	Northgate	This deal	Where the effort belongs
2. Facility, maximum advance, sizing limbs	427.3; 65%; 1.45x		the limb that binds, the cost base, the profile
2A. Minimum LLCR, maximum balloon or maturity LTV	[]; 1.619x at close		the level is negotiated, not computed
3. Conditions precedent	lease effective; equity enforceable		any condition a third party controls
4. Drawdown order, availability, commitment fee	equity first; 24 months; []		the equity bridge and its security
5. Margin, swap, fees	2.00% + 4.10%; 1.50%		the fee enters cost, and cost sets the loan
6. Term and amortization profile	15 years; 25-year profile		two numbers, two jobs
6A. Balloon at final maturity	247.2 (57.8%)		worth more than 25 bp of margin
7. Prepayment, sweep, break costs	[]% below []x; balloon sweep		a sweep that steps with cover
9. Accounts, waterfall, reserve required balance	nine tiers; 16.9; balloon excluded		recompute the reserve from the installment
10. Distribution conditions, default ratio	1.25x historic and projected; []		strike it against cover achieved
11. Negative covenants, budget approval	no debt, security, disposals, change		deemed consent on the budget
12. Events of default, equity cure	[] cures, none consecutive		trade the number for the period

The order of the waterfall in clause 9 must match Chapter 3 tier for tier: where a book, a term sheet and a credit agreement disagree about the order, one of them is wrong.

The diligence questions, with the bad answers

Appendix D. Diligence is finished when the questions are answered, not when the index is full. A bad answer does not kill the deal: it means a risk has not been transferred to anyone.

Project / borrower		Analyst	
Lender / sponsor		Date	

Workstream	Question	Bad answer	Answer / evidence
Sponsor and structure	Is the equity committed, in what form, from which entity?	an entity whose only asset is the project	
Sponsor and structure	What makes the completion support fall away?	a date, not a completion test	
Revenue contract	Who is obliged to pay, how much, how long, and when may they stop?	a deduction regime never run at its maximum	
Revenue contract	Does the termination sum cover the debt?	a formula tied to book value	
Construction	Scope behind the fixed price; damages cap against the actual loss	a cap set by market practice	
Operations	Maintenance capex: deducted from CFADS or reserved?	an overhaul in a year the model does not reach	
Site and permits	Title against the loan; connection agreement and curtailment	a permit described as "expected"	
Technical	Resource at P50, P90, P99; degradation warranted by whom?	a P50 quoted alone	
Insurance	Delay-in-start-up cover; indemnity period against the rebuild	cover sized to replacement cost only	
Financial model	Which test binds; was each downside table re-sized or held?	a table whose cover never moves	
Tax	Taxable income, not cash; disposal tax in the exit; incentive durability	5.59% with the credit, 0.13% without, shown as one number	
Legal	Direct agreements, cure periods, consents to transfer	a cure period shorter than a replacement	

The last question, asked by someone senior enough to act on it: what has to be true for this deal to lose money, and who told us it was true? Any part that traces to the sponsor's own forecast, warranted by nobody, belongs in the credit paper.

The model review: thirteen errors, thirteen tests

Appendix E and Chapter 14. Structural checks before any output; every test run by recomputing the thing from the label it carries. Log where each test was run, not only where it failed.

Project / borrower		Analyst	
Lender / sponsor		Date	

#	Error	One-line test	Run on (sheets, deals)	Result
1	A reserve sized on a superseded service	reserve / annual service = the fraction the label claims		
2	A sensitivity that re-sizes the debt	read the loan amount down the table, then the prose beneath it		
3	A solver that returns its bracket	solution at an endpoint? print the objective achieved beside it		
4	Escalation from the wrong base year	period one of every escalating stream equals its input		
5	Tax on cash, not taxable income	recompute an early and a late year by hand; compare the shape		
6	An IRR on a series that changes sign twice	count the sign changes; exactly one		
7	A terminal value assumed, not derived	exit value / the cash flow it capitalizes; disposal tax present?		
8	A return with no construction period	periods between first outflow and first inflow = the build		
9	A fix applied to one deal only	write the test as a sentence; run it on every deal and tab		
10	A ratio escalated until it inverts	plot every "x per cent of" across the whole horizon		
11	Funding cost on the asset, not the borrowing	for each line of sources and uses: on what day is it drawn?		
12	A transferable credit at face value	discount, date of cash, indemnity: three questions		
13	A financing item out at one end, in at the other	list the exclusions; read the series backwards		

Before signing off: does the model reconcile to the documents or only to itself; was it reviewed by someone who did not build it; and does the note separate what was tested from what was not, which is whether the assumptions are true.