RENEWABLE ENERGY MODELING TOPICS

OVERVIEW

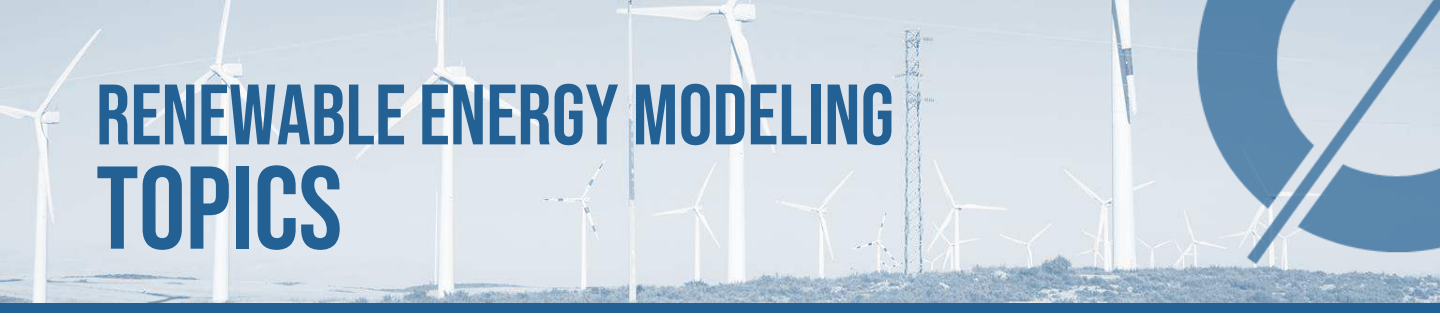
The table includes a list of lessons within chapters (the main topic). It also shows:

- Class time (~minutes of material) or if the topic is covered online
- If there is a modeling component to the lesson (yes/no)
- If the lesson is available on our online platform

Lessons highlighted in green are covered in the in-person or live stream Renewable Energy Project Finance Modeling Course. All lessons available online are within the Renewable Energy Project Finance Modeling Course, except those listed in the Tax Equity Chapter, which are covered in the Tax Equity Modeling course.

We can also tailor courses from any of the lessons included below to suit your team.

CHAPTER	LESSONS	CLASS TIME	MODELING?	ONLINE?
0. PRE-COURSE				
0.01	Best practice modeling concepts	Online	Yes	Available
0.02	Excel functions	Online	Yes	Available
0.03	Benefits of leverage, NPV, IRR	Online	Yes	Available
	TOTAL FOR PRECOURSE	**0**		
1. PROJECT FINANCE				
1.01	What is Project Finance?	10	No	Available
1.02	Investment structure and liability management	10	No	Available
1.03	Passthroughs and blockers (USA) vs taxable entities	10	No	Available
1.04	Role of parties and contractual cashflows	20	No	Available
1.05	Allocation of risk	10	No	Available
1.06	Project finance summary	5	No	Available
	TOTAL FOR PROJECT FINANCE	**65**		
2. MODEL TIMING				
2.01	Setting up the model (infrastructure and timing)	30	Yes	Available
	TOTAL FOR MODEL TIMELINE	**30**		



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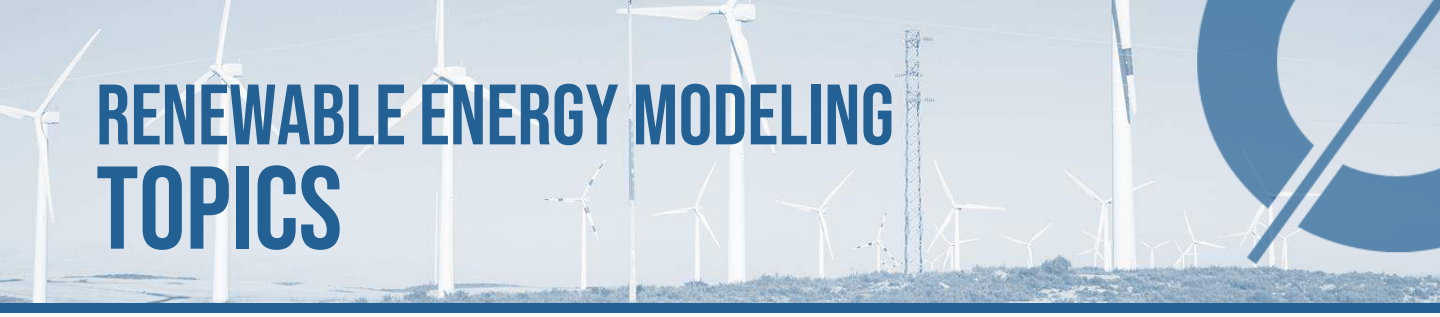
CHAPTER	LESSONS	CLASS TIME	MODELING?	ONLINE?
3. TERM LOANS				
3.01	Impact of leverage on a deal	60	Yes	Available
3.02	Creating sensitivities and scenarios (data tables)	30	Yes	Available
3.03	WACC	15	No	Available
3.04	Lender returns and risk appetite	15	No	Available
3.05	How lenders set interest rates and DSCRs	15	No	Available
3.06	Setting up funding sheet and timing flags (in model)	35	Yes	Available
3.07	Debt repayment types (mortgage, linear, DSCR). DSCR sculpting	50	Yes	Available
3.08	Debt sizing	60	Yes	Available
3.09	Drivers of debt size	7	No	Available
3.10	Sources of debt	30	No	Available
3.11	LLCR	35	Yes	Available
3.12	PLCR	10	Yes	No
3.13	Bullet, balloon, mini-perm repayments	5	No	Available
3.14	Cash sweeps	7	No	Available
3.15	Refinancing term loan debt	30	Yes	No
3.16	Interest rate swaps, pre-payment penalties & breakage costs	20	Yes	No
3.17	Loan Agreement	60	No	Available
3.18	Role of administrative agent	15	No	No
3.19	Collateral package and perfection of security interest	30	No	No
3.20	Exercise in reading legal agreements	30	No	Available
3.21	DSRA	90	Yes	Available
3.22	Modeling junior / mezzanine facilities / Shareholder loans	90	Yes	No
	TOTAL TERM LOANS	**739**		



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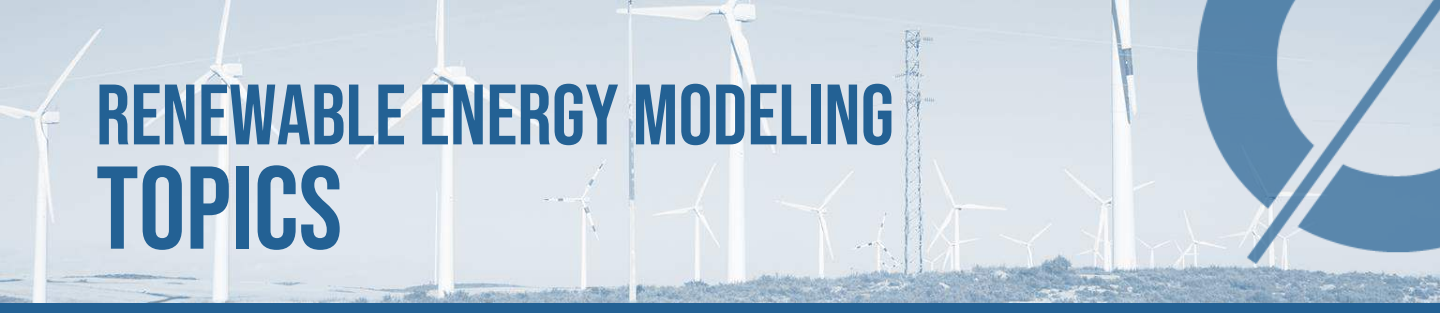
CHAPTER	LESSONS	CLASS TIME	MODELING?	ONLINE?
4. GENERATION				
4.01	Capacity versus energy	5	No	Available
4.02	Capacity factors	5	No	Available
4.03	Probability factors (P50/P99)	30	Yes	Available
4.04	How wind turbines and solar panels work	20	No	No
4.05	Overview of heat rate and other technologies	20	No	No
4.06	Renewable resource assessments: Measure, Correlate, Predict	30	No	Available
4.07	Probability, normal distribution and randomness in wind/solar/hydro	30	No	Available
4.08	How the grid works + dispatch order	15	No	No
4.09	Intro to electricity: electromagnetism, generators, transformers	15	No	No
4.10	Modeling generation	30	Yes	Available
	TOTAL GENERATION	**200**		
5. REVENUE				
5.01	PPA overview	15	No	Available
5.02	Revenue modeling (PPA, merchant, and Capacity payments)	45	Yes	Available
5.03	PPA risk	5	No	Available
5.04	PPA legal	10	No	Available
5.05	Why do capacity payments exist?	10	No	Available
5.06	Environmental attributes (RECs, ROCs, white tags)	30	No	No
5.07	Alternative revenue structures (VPPAs, net metering, PRS etc)	60	No	No
5.08	Project finance at distributed scale (C&I, residential, pay-as-go)	45	No	No
5.09	Battery revenue introduction	30	No	No
5.10	Battery revenue modeling	130	Yes	No
	TOTAL REVENUE	380		



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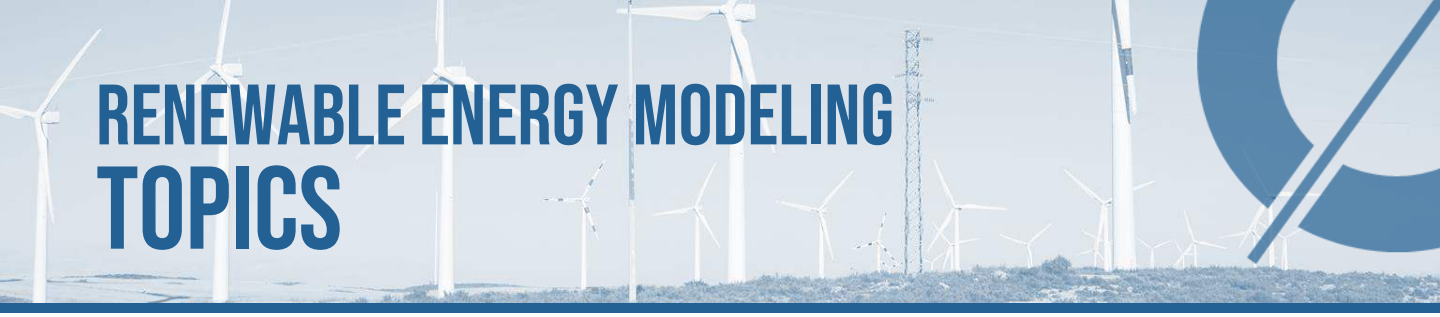
6. COSTS				
6.01	Operating cost overview	15	No	Available
6.02	O&M Agreements	30	No	Available
6.03	Modeling operating costs	35	Yes	Available
6.04	Maintenance reserves	40	Yes	No
6.05	Insurance: property & casualty, business interruption	25	No	No
6.06	Construction costs	20	Yes	Available
	TOTAL COSTS	**165**		
7. CADS AND SENSITIVITIES / SCENARIOS (P50/P99)				
7.01	Waterfall summary and role of admin agent	20	Yes	Available
7.02	Working capital adjustments to cashflow	30	Yes	Available
7.03	Determine unlevered returns and goal seek price	15	Yes	Available
7.04	Create output data table for model	10	Yes	Available
7.05	P50 vs P99 debt sizing, optimizing model for both	35	Yes	Available
	TOTAL CADS AND SENSITIVITIES / SCENARIOS	**110**		
8. DISTRIBUTIONS AND LOCK-UP				
8.01	Modeling distributions and lock-up	30	Yes	Available
8.02	Calculating levered returns	5	Yes	Available
	TOTAL DISTRIBUTIONS	**35**		
9. CONSTRUCTION PHASE FUNDING				
9.01	EPC contract	40	No	Available
9.02	Construction funding overview	20	No	Available
9.03	Pre-operating revenues	30	Yes	No
9.04	Modeling construction phase	60	Yes	Available
	TOTAL CONSTRUCTION FUNDING	**150**		



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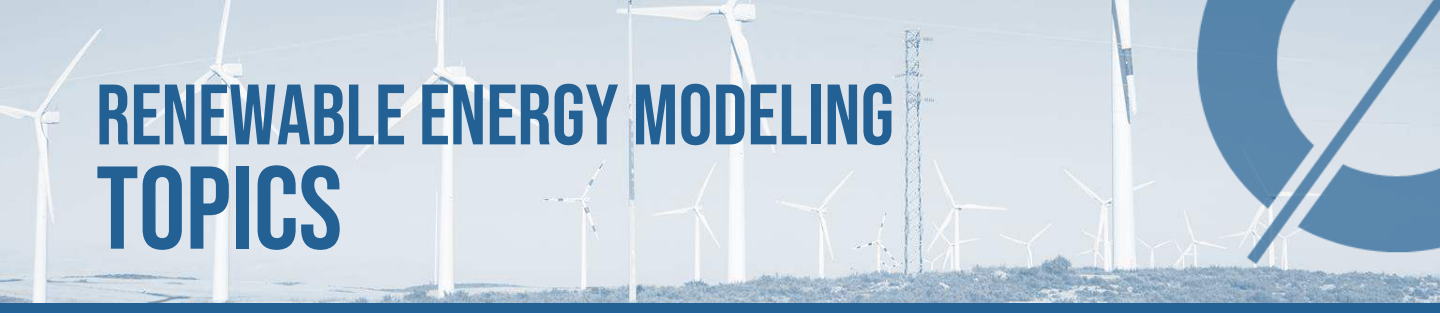
CHAPTER	LESSONS	CLASS TIME	MODELING?	ONLINE?
10. DEPRECIATION AND TAX				
10.01	Book and tax depreciation	90	Yes	Available
10.02	Earnings before tax	15	Yes	Available
10.03	US tax credits and efficient taxpayer benefits	30	Yes	Available
10.04	Net operating losses and tax credits (inefficient)	35	Yes	Available
10.05	International deals (modeling tax above CADS)	30	Yes	No
10.06	VAT and VAT loans	60	Yes	No
10.07	Deferred tax assets and tax liabilities	45	Yes	No
10.08	Retained earnings limits on distributions	30	Yes	No
	TOTAL DEPRECIATION AND TAX	**335**		
11. POST-TAX RETURNS				
11.01	Calculating post-tax returns	25	Yes	Available
	TOTAL POST-TAX RETURNS	**25**		
12. OPTIMIZATION				
12.01	Step-through of optimizing model to target IRR	15	No	Available
12.02	Goal seek macro introduction	20	Yes	Available
12.03	Recording macros and construction funding macro	35	Yes	Available
12.04	Model circularities (cons funding, DSRA, scenarios)	30	Yes	Available
12.05	Advanced macros (optimizing multiple scenarios)	60	Yes	No
	TOTAL OPTIMIZATION SECTION	**160**		
13. PORTFOLIO AND OPERATIONAL MODELING				
13.01	Development versus pipeline versus operating assets	30	No	No
13.02	Sample modeling of portfolio and model layout considerations	60	Yes	No
13.03	Modeling operating assets, budgeting, forecasting and tracking	120	Yes	No
13.04	Calculating terminal values	15	Yes	No
	TOTAL PORTFOLIO AND OPERATIONAL MODELING SECTION	225		



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14. TAX EQUITY				
14.01	Introduction to tax equity and back-leverage	45	No	Available
14.02	Structure and T&Cs of ECCA, Limited partnership Agreement, PSA	45	No	No
14.03	Tax equity capital accounts introduction	360	Yes	Available
14.04	Sponsor buyout	45	Yes	Available
14.05	Sizing tax equity transactions	60	Yes	Available
14.06	HLBV introduction	90	Yes	Available
	TOTAL TAX EQUITY SECTION	**645**		
15. OUTPUTS AND ERRORS				
15.01	Creating 3-way statements	90	Yes	Available
15.02	Dashboard and graphs	90	Yes	No
15.03	Common errors in financial models	20	No	No
15.04	Steps to review a financial model	15	No	No
15.05	Model review case study	90	Yes	No
	TOTAL OUTPUTS AND ERRORS	**305**		
16. PROJECT COMPANY SHAREHOLDER / OPERATING AGREEMENTS				
16.01	Functions of Officers and Directors	20	No	No
16.02	Duties and fiduciary obligations	20	No	No
16.03	Logistics: quorum, notice periods	15	No	No
16.04	Minutes and resolutions (best practices)	20	No	No
16.05	Delegated Authorities	15	No	No
16.06	Governance, voting, conflicts of interest and minority protections	30	No	No
16.07	Best practices for consensus building	15	No	No
16.08	Navigating shareholder documentations	60	No	No
	TOTAL PROJECT COMP. SHAREHOLDER/OPERATING AGREEMENTS	**195**		

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17. EMERGING MARKETS AND REGULATED ASSETS				
17.01	Overview of key emerging markets risks	15	No	No
17.02	Credit ratings agencies	15	No	No
17.03	Sovereign risk and pricing of sovereign bonds	30	No	No
17.04	Risk mitigation strategies (political risk insurance, bilateral treaties)	20	No	No
17.05	Government implementation agreements	20	No	No
17.06	Direct Agreements	10	No	Available
17.07	Best practices in power procurement auctions	25	No	No
17.08	International tax structures and considerations	15	No	No
17.09	Evaluating regulated assets	30	No	No
	TOTAL EMERGING MARKETS	**180**		
18. COMPLIANCE				
18.01	US Foreign Corrupt Practices Act, UK Bribery Act, anti-corruption rules	45	No	No
18.02	Material Non-Public Information and Insider Trading	45	No	No
	TOTAL COMPLIANCE	**90**		

TOTAL HOURS = ~67 (10 days of training)