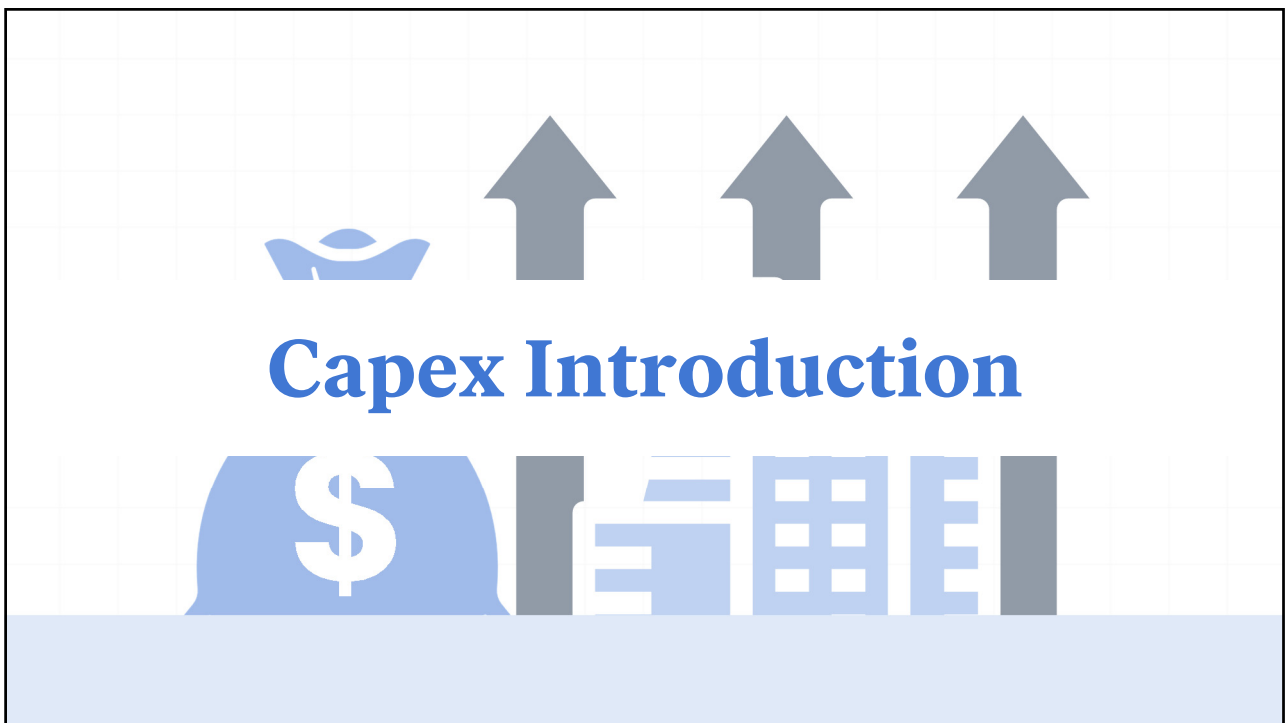
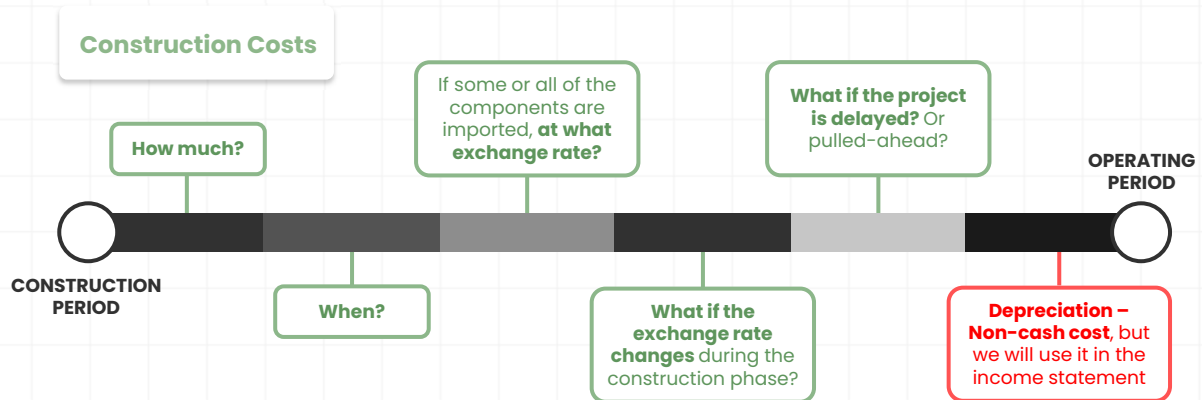




The operating cash flows have been built, but they will only happen if **the assets which will generate the revenue are built.**

Construction costs need to be added:

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Need to include all capital costs



Land-Related Costs



Advisor's Fees



Initial Working Capital

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Example list of capex items from a wind farm project:
Many of the same items would appear as capex for
other types of renewable energy projects:

e.g. solar – only substituting PV panels for turbines

Construction and EPC	External advisors:
Turbine Supply Agreement	Sponsors legal fees
Balance of Plant Contract	Financial model audit
Pre-construction engineering	Documentation fee
Other Construction Items	Lenders technical advisor
Interconnection	Lenders legal advisor
Development cost	Lenders insurance advisor
Land lease signing fee	
Connection and substation servitude	
Contingency	
Other Fees:	Other Costs:
Sponsor development fee	Bid costs
DoE development fee	Registration of mortgage bonds
	Bid bond cost
	Working capital (start-up costs)



High-level industry-average
estimates evolve into
**detailed costs sourced from
tenders and draft contracts.**



The capex estimates
mature as the
**project approaches
financial close.**

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Construction / Capex Costs

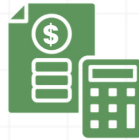


Typically, a given set of costs from an external source



Model For Flexibility

e.g., **change of start-date**,
potential cost overruns



Cost Overrun Sensitivities

Build-in a % to add to base cost:
Base cost * (1+sensitivity %)



Change Of Dates

Allocate a period's worth of
capex to the correct year using
a **LOOKUP or INDEX formula**:

Eg **HLOOKUP (year #, capex
table, # of rows down, false)**

Or use Index / Match to do
the same

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Capex Inflation





Over the long-term (and renewables projects are long-term) **inflation has a huge effect** on cash flow.



If cost increases cannot be recovered, it can **destroy the financial viability** of a business.

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It's Important to Model Inflation



and to structure the revenue so that you recover inflationary cost changes

The inflation rate needs to be modelled

– it is an assumption, so treat it like every other assumption.



Flexible



Timed



Different Rates for Different Things

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Use of Indices

Inflation is cumulative and compounding from the starting point

Best Practice: create an index to inflate cash flows in each period

An index formula can refer to a single input rate and keep accelerating it each period:

This creates an index

THE FORMULA YOU NEED IS:

$$= (1 + \text{rate}) ^ \# \text{ periods}$$

Then multiply the cost or revenue by the index

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Setting Start Point for Inflation

FORMULA

$$= \text{IF} (\overset{1}{\text{Current date}} \geq \overset{2}{\text{Inflation start date}}, \overset{3}{1}, 0)$$

1

Set start date in Assumptions

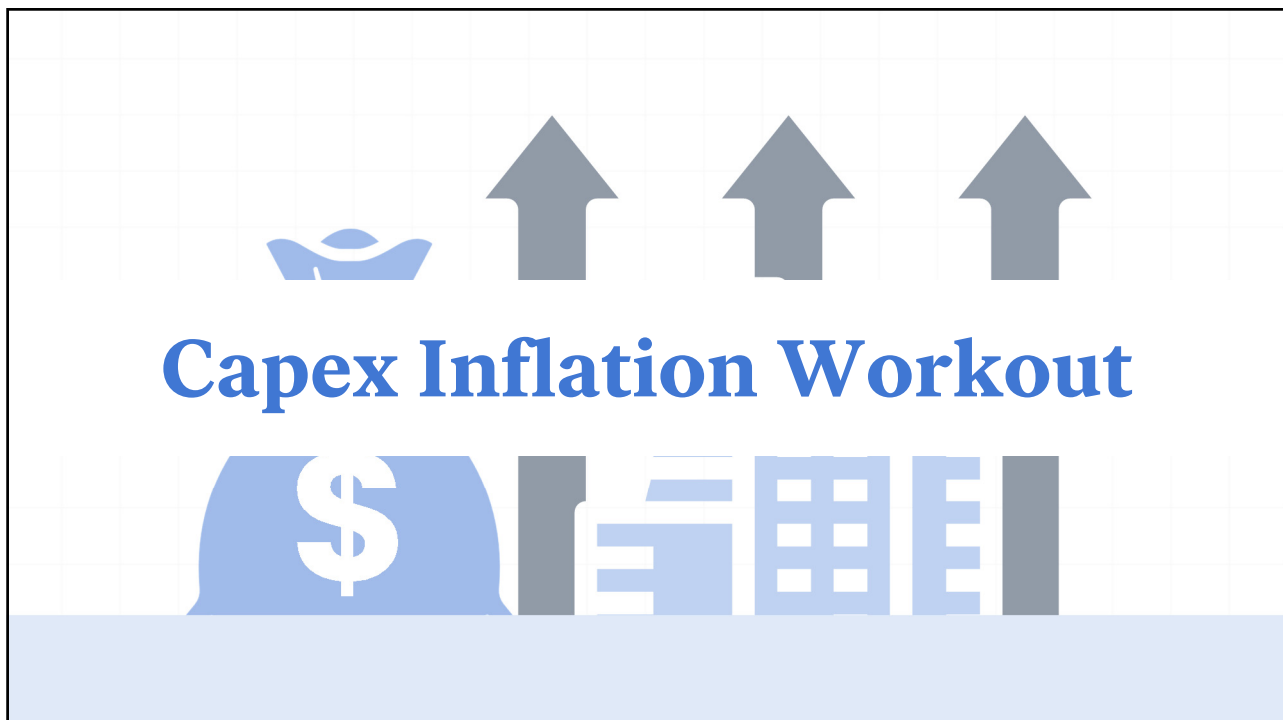
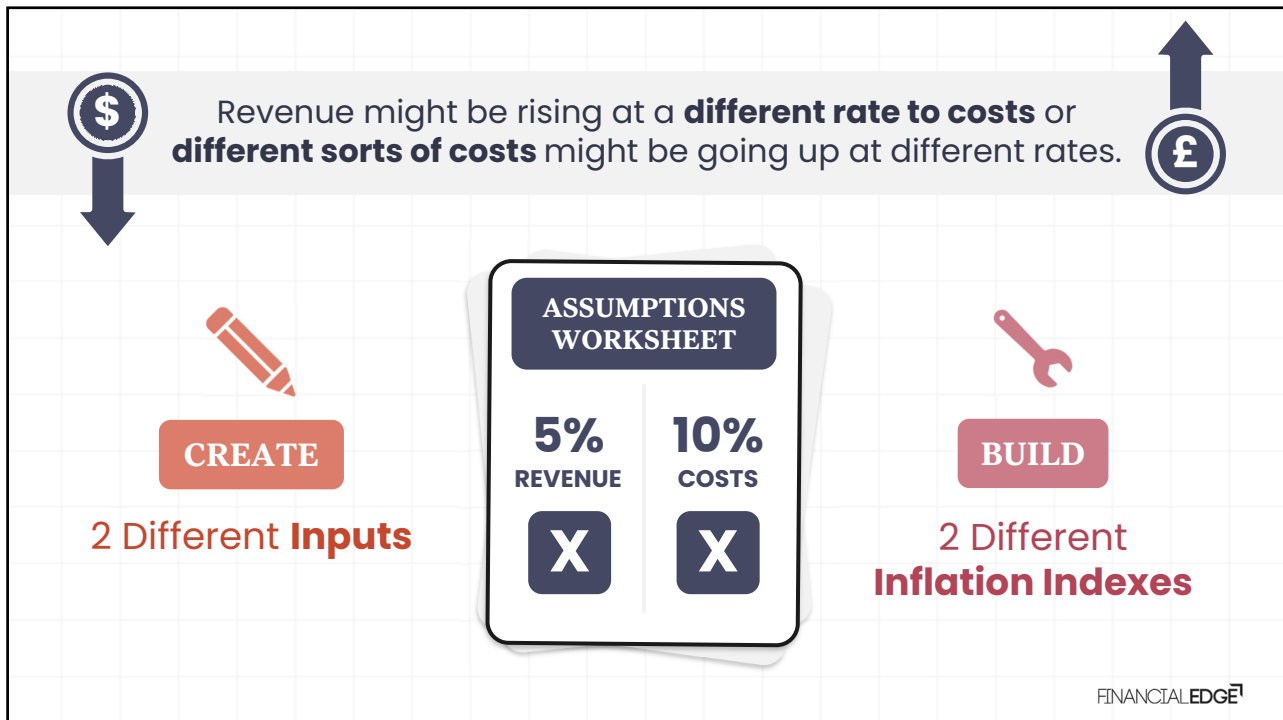
2

Use flags to equal 0 or 1 once start date has passed

3

Can change input start date once and flow through entire model

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Index Example

Period Number		1	2	3	4	5	Total
Cash Flow		\$100	\$120	\$110	\$104	\$100	\$534
Inflation Rate pa	5.00%						
Inflation Index		1.050	1.1025	1.1576	1.2155	1.2763	
Inflation-Adjusted Cash Flow		\$105	\$132	\$127	\$127	\$128	\$619
						Diff	16%

From Assumptions: single input

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Flag Example

Period End-Date		31/12/21	31/12/22	31/12/23	31/12/24	31/12/25	Total
Cash Flow Before Inflation		\$100	\$100	\$100	\$100	\$100	\$500
Inflation Index		1.05	1.1025	1.157625	1.215506	1.276282	
Inflation Start-Date	31/12/23						
Inflation Flag		0	0	1	1	1	
Inflation-Adjusted Cash Flow		\$100	\$100	\$116	\$122	\$128	\$565

From Assumptions: single input

Cost estimate are at today's prices, but may not be incurred until some time into the future

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Applying Multiple Rates

Period End-Date		31/12/21	31/12/22	31/12/23	31/12/24	31/12/25	Total
Period Number		1	2	3	4	5	
Construction costs before inflation		\$1,000	\$1,200	\$1,100	\$0	\$0	\$3,300
Construction Inflation Rate pa	5.00%						
Construction Inflation Index		1.05	1.1025	1.157625	1.215506	1.276282	
Inflation-Adjusted Construction Costs		\$1,050	\$1,323	\$1,273	\$0	\$0	\$3,646
Maintenance costs before inflation		\$0	\$0	\$100	\$100	\$100	
Maintenance Inflation Rate pa	10.00%						
Maintenance Inflation Index		1.1	1.21	1.331	1.4641	1.61051	
Maintenance Inflation Start-Date	31/12/23						
Maintenance Inflation Flag		0	0	1	1	1	
Inflation-Adjusted Maintenance Costs		\$0	\$0	\$133	\$146	\$161	\$441

Linked from Assumptions

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Uses **cost estimates from 2021**, but the project (and the model) only starts in 2023

Must add **two years of inflation** before the modelled cash flows start

Period End-Date		31/12/23	31/12/24	31/12/25	31/12/26	31/12/27	Total
Year Number		1	2	3	4	5	
Cash Flow Before Inflation		\$100	\$100	\$100	\$100	\$100	\$500
Inflation Index		1.157625	1.215506	1.276282	1.340096	1.407100	
Inflation Rate pa	5.00%						
Inflation Start-Date	31/12/2021						
Years Before Model Start	2.00						
Inflation-Adjusted Cash Flow		\$116	\$112	\$128	\$134	\$141	\$640

Year#

$$= (1+5\%) ^{(1+2)}$$

Years before model

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