

Keywords: bank finance, chicken, computer app, engineering plans, financial planning, investment, LEAP design concept, processing plant, profitability, poultry product mix, project profile, slaughterhouse, startup, techno-economic feasibility,

How to Use AptecApp to Plan Your Poultry Processing Venture

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1 AptecApp

AptecApp is a spreadsheet tool whose predecessor has been available in different configurations and with different names at the Aptec website for many years. A number of poultrymen have used it from time to time. This version has increased functionality and updated input costs, all related to actual plant layouts. With this version you can plan five different projects:

- The tiniest footprint 1300 BPH startup. The user is left to draw out his own version of all other rooms, utilities and services. Use the figures given under Section A2 as your guide.
- A 1300 BPH startup that can expand to 4000 BPH under the same premises/masterplan
- A 2500 BPH LEAP startup that can expand to 6000 BPH and the to 8000 BPH, also under the same premises/masterplan
- And of course 4000 and 6000 BPH plants which may be your preferred starting capacity.

The zipped file you downloaded from www.aptec.in is a powerful tool to help you plan your poultry processing plant. This document will explain how.

On unzipping the download you will have found:

- Five PDF files named (a) the New Meyn 1300 BPH Budget Plant Design Rev 4, (b) three layout drawings in PDF format, with details of five possible layouts corresponding to the five projects that you can plan with this App, this file (c) AptecApp for Poultry Processing ReadMe First.
- And (d) **AptecApp 2210.xlsm** file. The suffix 2210 indicates that the version was released in October 2022. (On the interface page of the App you will read the sub-version number which you must quote when seeking help).

[The *.xlsm version is for use by people who have installed Microsoft Excel released anytime after 2006 on their computers. They can open XLSM files in Microsoft Excel Windows, Mac, Web, and Android by default].

[For those who have even older versions of MS Excel will need to download and install the Microsoft Office Compatibility Pack].



If this is the first document you are reading, you are on the right track!

When you open **AptecApp.xlsm**, MS Excel may ask you whether you want to use it as a Template. Click No. Always open as “Not Read Only”. Do not open it as a shared file. Always save your work as Microsoft ver. Compatible with your Excel as ABCD.xlsm.

MS Excel will ask you whether you would like to enable macros. Say yes. The macro sets the working environment of Excel appropriate for proper running of the App. If you choose not to allow macros to run, you will have to set the environment manually. This has been explained below.

However, the App has a subroutine to remove errors if they suddenly show up throughout the interface. This is a familiar and frustrating occurrence in all spreadsheet applications which use iterative calculation loops which this App does. Should this happen, save the file and open it again, this time enabling macros. Then follow the instructions given near the top right hand part of the screen.

1.1 Configuring the App

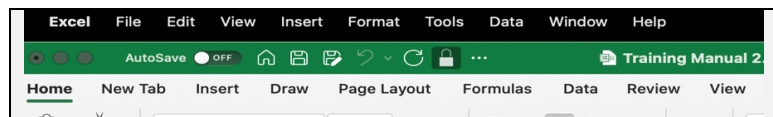
AptecApp will run properly only when MS Excel is configured correctly. There are two ways to ensure this.

The first way is to allow macros to run. In older versions of Excel, you need to select *Menu > Tools > Protection* and select *Allow Macros to Run*. In the more recent versions, when you click the file to run, Excel will display a dialog box. Select *Allow Macros to Run*.

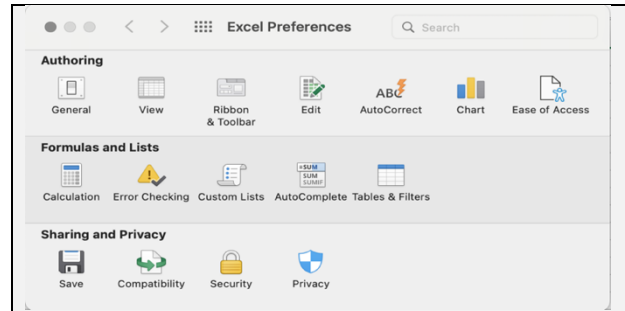
Aptec has written the code to configure all the following settings automatically when ever you run the App. But to allow the code (which is a set of instructions in a macro), you must allow the macro to run.

However, if you choose not to let the macro run, you will have to follow these steps and manually set the environment to allow it to run. You can set everything by following these instructions:

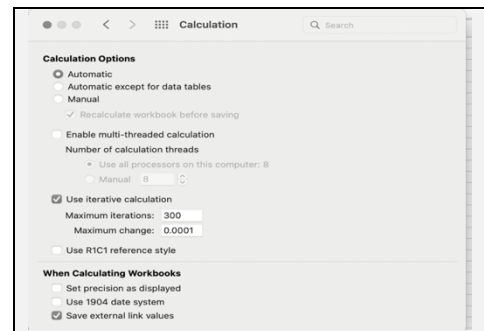
- A Find the *Preferences* Setting Menu. It is located here. You need to click *Excel*. After that, click or select *Preferences*



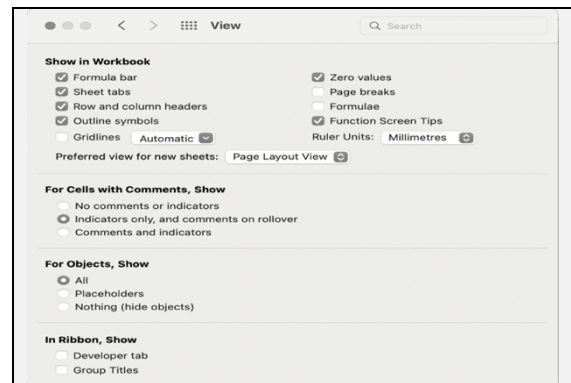
B You will then get this dialog box. Select *Calculation* under *Formulas and Lists*



C Click or select *Calculations*. This is how the *Calculation* options should look after choosing the correct settings



D Go back to *Preferences* and select *Views*. Use these settings.



E NOW YOU ARE READY TO USE THE APP

P.S. If your version of MS Excel does not present the menu for settings in this format, try finding these settings under their older menu format. Hint – begin with *Tools*.

1.2 Iterative Calculations

AptecApp uses hundreds of iterative calculations to arrive at the desired level of precision. To do so, it must let Excel perform iterative calculations and Excel's environmental settings must allow this, in turn.



Now, with iterative calculations enabled, if by chance you accidentally entered an “illegal” character into one of the input cells, it will lead to an intermediate result showing an error. Excel will carry that error round and round in the iterative mode till the screen fills up and you cannot proceed. MS Excel has no means to clear the mess.

To prevent this happening, Aptec has carefully configured all the user input cells to only accept legal inputs. You will discover this when you enter data into these cells. For instance, try entering 375 days of operation per year. The App will reject this figure. In fact it takes a maximum of 330 days a year, to allow for weekends.

But it is still possible that an error may creep in and your App may fill up with error signs. We have found this to be very rare but possible. As a way out of such an unlikely contingency, Aptec has written an algorithm which will clear the mess and restore your work. This feature is run by pressing the command button labelled “**Clear Error!**”

But remember, it works only **AFTER** you have removed the illegal entries you made just prior to your screen filling up with error signs. This would probably be the last or second last entry you just made.

2 The LEAP Concept

The LEAP project concept was developed by Aptec in 2011 following an inspirational bit of advice from Henk van duijn, the then Agriculture Counsellor of the Royal Netherlands Embassy in India. It allows you to start your poultry slaughterhouse at a reasonably low capacity, with the barest minimum of investment, yet retain the possibility of expanding rapidly practically without shut-down during expansion.

Unit processing cost per bird falls as your capacity grows, so the initial capacity of 1300 birds per hour (BPH) which LEAP begins with, must encourage you to expand. This is the central *mantra* for processing poultry worldwide.

This is what LEAP does. The PDF drawings show how you can begin with 1300 or 2500 BPH and expand to 4000 or 6000 BPH. And **AptecApp** helps you generate the financial figures for all such stages. You can decide your bird size, working hours per day, marketable products, selling price, etc.

Your plans enable you to check what would happen when live bird prices, plant wages, power cost, number of operating hours, running the plant at beyond rated BPH, changing fresh and frozen product ratio, increasing or decreasing whole carcass to portioning and deboning ratio, processing oversized or undersized live birds – all variables that will affect your bottom-line. Also, with fluctuating live bird prices you can decide your marketable product policy on a day to day basis.



You can decide how to develop your plot of land to facilitate smooth growth using the layout drawings. Your architect and structural engineer can use the construction details given in them to generate accurate bills of materials and construction cost estimates.

In other words, the App allows you to plan your options well.

Within the App, you will be able to enter or modify selected set of cells which are coloured green, and also to modify or choose from some options. The App itself gives relevant hints and explanations as you go along.

When you have completed planning, you must save the file. When you try to save it, preferably with a new name. For each session, as you make successive modifications, you can save the App as a new, dated iteration. Eventually, as your options become more and more clear, you will then want to discuss details with your vendors and seek paid consultancy service from Aptec.

We await that stage of your planning. Meanwhile, do not hesitate to e-mail us or call, if your planning needs clarifications. Aptec has planned and installed nearly half of the total poultry processing capacity in India, and so it ought to have the answers.

Using this App, you can generate financials that you can discuss with your banker. There are enough details in it for the banker to give the in-principle nod.

3 Precision

Unlike earlier version posted on the Aptec website, this App is designed to generate outputs to a high degree of precision. Here is how:

Parameter	Handling the Parameter for Accuracy
Land cost	Since you provide the input, you may take care to ensure accuracy and precision
Building cost	Based entirely on the supplied drawings. The default figures for dimensions are based on the drawings and the default figures for per unit cost have been calculated therefrom by civil construction company who has built a processing plant under the project leadership of Aptec. He has used the exhaustive specifications and details included in the drawing.
Machine cost (imported, indigenous and MFA)	All based on inputs from vendors specialized in their concerned machines, except for cost of electricals which we are working on and may be able to incorporate by end 2022. At present they are interpolated from projects that Aptec has provided detailed engineering consultancy to in the recent past.
Poultry Related	The next section will show the extent of care we have taken to set the thumb-rules that the App uses
Updating schedule Aptec proposes to update costs once every year in the App. The new updated version will be uploaded, with a new version number and the old one will be removed.	

4 Breakdown of a Chicken and Product Mix

The product mix in this App is derived from the percentage yield of different parts of a chicken upon portioning and deboning. Some of the un-conforming parts that these processing steps yield need to be packaged as parts of the next product type. For instance, portioning delivers upper and lower back cuts which cannot be packaged and



sold as portions and must be bundled as curry-cuts. Similarly whole wings are separated, to be sold as portions when you attempt to produce boneless products, because it is very difficult to debone wings in their entirety.

The case for upper and lower backs being bundled as curry-cuts requires further attention. If you sell all your whole carcasses as such, and also attempt to sell your curry-cuts as consisting entirely of upper and lower backs (and necks, skin-on), the contents may not be appealing to the buyer. Therefore, you will need to add some actual curry-cut (meaning cutting through the bones of torsos of a chicken into curry type pieces) and mix the pieces with the upper and lower backs to make attractive curry-cut packs.

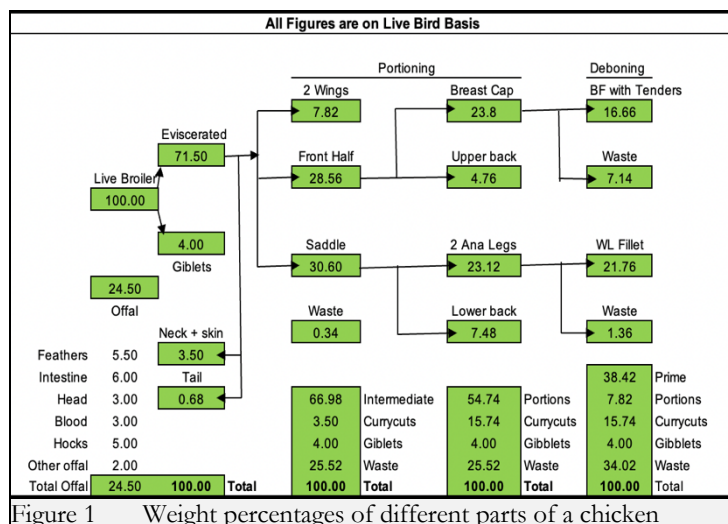
The question is, how do you price them in the App to get a realistic turnover figure?

This is how you solve the problem. Imagine that 5% of whole carcasses are to be turned into curry-cut. Imagine again that the selling price of whole carcasses is 100 and that of curry-cuts is 65.

Then $(100-5)$ Kg will yield a price of 100 and 5Kg will yield a price of 65. Therefore the correct price of whole carcasses, to be entered by you in the App should be

$(0.95 \times 100 + 0.05 \times 65) = 95 + 3.25 = 98.25$ and curry-cuts may continue to be priced at 65. When you do this, the production quantities will differ accordingly, but the total turnover figure will be correct.

To further help you realize the product mix better, Aptec gives here the data pertaining to yields. These are precisely the ones we have used in our algorithms.



Basis Meyn Live Bird Cut-up Sheet			Of live weight, neck and skin on going into carcass in India
Livebird	Average	100.00	
Hocks	5.00		
Head	3.00		
Feathers	5.50		
Blood	3.00		
Intestines	6.00		
Lungs, gallbladder, trachea, gizzard content, prestomach	2.00		
Indian style processing loss	24.50	75.50	
Gizzard	1.50		
Liver	2.00		
Heart	0.50		
	4.00		
	100.00	71.50	
Griller going into cut-up	68.0		
Neck with skin into cut-up	3.50		
2 whole wings	11.50	7.82	
Tail	0.50	0.34	
2 Thighs	20.00	13.60	
2 drums	14.00	9.52	
Breast cap	35.00	23.80	
Lower back	12.00	8.16	
Upper back	7.00	4.76	
Check figure	100.00	68.00	

Figure 2 The European griller versus the Indian whole dressed chicken. We needed to create this set of data because the Meyn graphic incorporates one rounding off which results in errors.

With the second graphic we have tried to reconcile our data with those from Meyn, which you can obtain from them by reaching Mukanjay Singh +91 88603 29800 at Meyn India.

Do remember that the above represents only the average yields. In reality yields will differ according to breed, gender, nutrition, general health and age of the bird and even the stress encountered during transport to the plant and up to the point when they are slaughtered.

5 What Next ?

5.1 Expanded, Banker Friendly Format

Aptec is working on the next variation of the App. It will be called **AptecAppL**, the suffix L standing for the long form (10 year projections, in approximately 19 pages or more, complete with financial performance indicators) of your plans. It will contain the existing form (AptecApp) which will allow you to plan your project in the manner described above. Then, after you have done so, it will allow you to migrate your plans to the long format.

This will then allow you to modify your plans on real-time basis to incorporate actual cost components of the project – including land and its development, buildings, machinery and miscellaneous fixed assets, margin money for working capital, utilities and services, and human resources, etc. It will also allow you to decide the source of machinery and whether they will be imported (and so incur customs duty) or



indigenously procured. At the appropriate stage you can print and send a copy of your project for evaluation to your banker.

Meanwhile you can continue refining the inputs as you receive commercial offers from your vendors and field-based cost inputs from the construction site. And all the while, the App will keep recalculating and updating financials.

5.2 Track Project Progress, Optimize, Expedite

It will further allow you to monitor progress of the project by letting you keep track of:

- Recruitment of personnel
- Major cost components and assigning the cost to equity or debt component
- Refining your loan drawdown to minimize preoperative interest
- Creating add-on spreadsheets carrying capital goods purchase details which you can link to the App
- Keep a tab on completion period of the project and help you expedite it

5.3 Currency Flexibility

Now imagine that your project involves three parties – yourself in the UK, your partner in Nigeria and both of you plan to set up the plant in India where your project manager is located. How can you use **AptecAppL** to keep track and coordinate amongst yourselves? Each region uses a different currency and your partner located there is unable to grasp the true significance of a cost figure presented in an alien currency! And all this while each of you is contributing fresh cost inputs to the consortium in terms of his own currency in real time. How does one coordinate all of this? And if you plan on using a PERT program, how do you obtain and use fresh cost and other resource inputs in real time?

AptecAppL has solved these problems. You can send your work-in-progress copy of the App by e-mail to your partners and they can make it convert all figures into Nigerian or Indian (or any other 200) currency by simply supplying the exchange rate and pressing a command button. And this can be done as many times as any of you cares to send his latest iteration to his partners. **AptecAppL** will maintain a record of all such changes.

5.4 Production Cost per Item, Optimization of Product Mix

You may well ask at this point, “OK this may help me when I am setting up my project, but of what use will it be when I go into operation? Why should I purchase the license for **AptecAppL**?”



But there is more. Not only does the price of live poultry change every week or oftener, even the relative prices of portions change such that any one product may be yielding a better profit during that period. How would it be if you could use **AptecAppL** to decide your product mix every week for the purpose of maximizing contribution?

AptecAppL can do just that. For this it uses an Excel Add-in called Solver. Using a set of constraints which you can specify, it performs the maximization exercise and recommends the most profitable product mix given the prevailing selling prices in the market in that week. Constraints which you specify may be the long term agreements your company has with institutional customers – such as party Q must get at least 2 tonnes of boneless fillets per week because of your long term contract with him.

To perform this function, the App must internally generate specific production cost per item you produce. This data is made available by the App to you.

5.5 How and When You Can Get AptecAppL

For all this, AptecAppL will be a priced bit of software with single and multiple user price tags. We are working on it and hope to release it by mid March, 2023. Meanwhile you can study the attached sheets which give you a glimpse of the extent of information spread over 19 A-4 pages or more, that will comprise the printable output of the Long version of the App.

6 Sample Pages from AptecAppL

Besides the standard input worksheets viz Buildings, Manpower, Product Plan, Machines and MFA, and Schedule where you use built-in proformas to develop and modify inputs, there are all the projections shown here and some more. There are also 6 tables determining break even analysis, debt service coverage, internal rate of return, return on capital, payback period and IRR. Here are some samples

	A	B	C	D	E	F	G	H	I	J	K	L	M
1	EXECUTIVE SUMMARY												
2	Name of Company												
3	Product/service proposed												
4	Location of plant/facility												
5	Schedule of Implementation: Commencement of construction on: 11-Oct-2022 28-Aug-23 marks completion of construction												
6	Duration of trial runs 8 days, with 05-Sep-23 marking the commencement of commercial production												
7	Project cost 13197.87 INR Millions												
8	Post-issue Debt:equity ratio 1 : 1												
9	Debt: Equity												
10	Total equity 6598.94												
11	Promoters' equity 6598.94												
12	Term loan (debt) 6598.94												
13	Public issue												
14	Capital subsidy												
15	Other sources												
16	INR component of capital reqd 2372.72 INR Millions												
17	Foreign Exchange component of capital reqd 10825.15 INR Millions												
18	Manufacturing Cap Utilisation 1st year 2nd year 3rd year												
19	All Products to be manufactured 75% 85% 100%												
20	For detailed Product Plan, refer 1 sheet(s) enclosed here												
22	Summary of project cost INR Millions												
23	Land and site development 125.98												
24	Buildings and other civil/structural works 1174.37												
25	Plant and machinery 7495.23												
26	Miscellaneous fixed assets 874.05												
27	Preliminary & preoperative expenses 167.67												
28	Pre-operative interest 274.96												
29	Contingency 505.61												
30	Margin money for working capital 2580.00												
31	Total project cost 13197.87												
32	Technology Related Data Source: Millions 6 zeros (1,00,000) 1,00,000												
33	One time technology fee												
34	Royalty, if any, on sales												
	16 Oct, 2022 at 15:04hrs is the finalisation time & date of these worksheets												

Figure 3 The Abstract page – giving all salient projected information on one landscape sheet

Figure 3 The Abstract page – giving all salient projected information on one landscape sheet



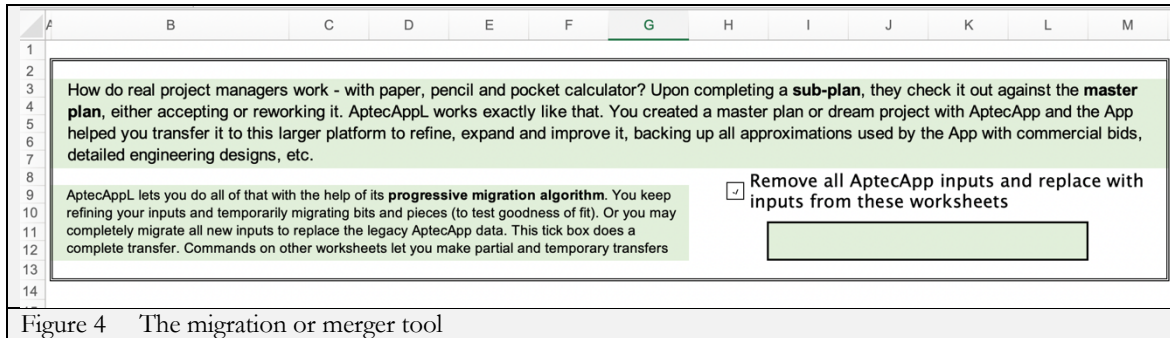


Figure 4 The migration or merger tool

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
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8

MARGIN MONEY FOR WORKING CAPITAL (AptecApp data)

Figures are in INR Millions

	Stock/	Bank	First year			Second year			Third year		
ITEM	(Months)	Finance	Amount	Bank	Margin	Amount	Bank	Margin	Amount	Bank	Margin
Raw materials	1.00	20.00%	133.28	26.66	106.63	151.06	30.21	120.84	177.71	35.54	142.17
Work in progress (WIP)	1.00	90.00%	153.63	138.27	15.36	174.11	156.70	17.41	204.84	184.35	20.48
Stock of finished goods	10.00	90.00%	768.14	691.33	76.81	870.56	783.50	87.06	1024.19	921.77	102.42
Utilities	30.00	80.00%	152.08	121.67	30.42	172.36	137.89	34.47	202.78	162.22	40.56
Factory overheads	30.00	33.00%	25.89	8.54	17.35	29.34	9.68	19.66	34.52	11.39	23.13
Administrative expenses	30.00	25.00%	140.66	35.16	105.49	159.41	39.85	119.56	187.54	46.89	140.66
Sales expenses	30.00	70.00%	101.23	70.86	30.37	114.72	80.31	34.42	134.97	94.48	40.49
Packing expenses	30.00	70.00%	46.30	32.41	13.89	52.48	36.73	15.74	61.74	43.22	18.52
Wages and salaries	30.00	60.00%	36.59	21.95	14.64	41.47	24.88	16.59	48.78	29.27	19.51
Outstanding debtors	45.00	80.00%	7591.91	6073.53	1518.38	8604.17	6883.33	1720.83	10122.55	8098.04	2024.51
Total working capital requirements			9149.71	7220.38	1929.34	10369.67	8183.09	2186.58	12199.62	9627.17	2572.45

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
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9 ESTIMATES OF COST OF PRODUCTION

Figures are in INR Millions

YEAR >>	1	2	3	4	5	6	7	8	9	10
Normalised capacity (BPH,330 days, 8 hours)	6000									
No of working days in a year	330	330	330	330	330	330	330	330	330	330
Capacity utilisation (%)	75%	85%	100%	100%	100%	100%	100%	100%	100%	100%
Raw materials/consumables	48648.60	55135.08	64864.80	64864.80	64864.80	64864.80	64864.80	64864.80	64864.80	64864.80
Utilities required:										
Steam	489.10	554.31	652.13	652.13	652.13	652.13	652.13	652.13	652.13	652.13
Power	1361.25	1542.75	1815.00	1815.00	1815.00	1815.00	1815.00	1815.00	1815.00	1815.00
Water										
All others										
Total utilities cost	1850.35	2097.06	2467.13	2467.13	2467.13	2467.13	2467.13	2467.13	2467.13	2467.13
Plant wages and salaries										
Plant wages	486.97	512.60	539.58	566.56	594.89	624.63	655.86	688.66	723.09	759.24
Supervision salaries										
Total wages and salaries	486.97	512.60	539.58	566.56	594.89	624.63	655.86	688.66	723.09	759.24
Plant overheads:										
Repairs and maintenance (%)	2.00%	190.87	190.87	190.87	190.87	190.87	190.87	190.87	190.87	190.87
Plant insurance (%)	2.50%	251.37	251.37	251.37	251.37	251.37	251.37	251.37	251.37	251.37
Light										
Vehicle expenses										
Miscellaneous plant expenses										
Plant contingencies (%)	1.00	442.24	442.24	442.24	442.24	442.24	442.24	442.24	442.24	442.24
Total plant overheads	884.49	884.49	884.49	884.49	884.49	884.49	884.49	884.49	884.49	884.49
Production cost estimate	51870.40	58629.23	68755.99	68782.97	68811.30	68841.05	68872.28	68905.07	68939.50	68975.66

Cost of production. Still using the AptecApp data. With the press of a command key you can base this and all other schedules on the several worksheets that you are busy refining.



	B	C	D	E	F	G	H	I	J	K	L	M
94	10 ESTIMATES OF WORKING RESULTS											
95	Figures are in INR Millions											
96	YEAR	1	2	3	4	5	6	7	8	9	10	
97	No of working days	365.00	365.00	365.00	365.00	365.00	365.00	365.00	365.00	365.00	365.00	
98	Capacity utilisation (%)	75%	85%	100%	100%	100%	100%	100%	100%	100%	100%	
99	Administrative salaries	48.70	51.26	53.96	56.66	59.49	62.46	65.59	68.87	72.31	75.92	
100	Remuneration to directors											
101	Legal & professional fees											
102	Travelling expenses											
103	Administrative o/h (%)											
104	Total administrative expenses	48.70	51.26	53.96	56.66	59.49	62.46	65.59	68.87	72.31	75.92	
105	Packing expenses	563.36	638.48	751.15	751.15	751.15	751.15	751.15	751.15	751.15	751.15	
106	Selling expenses (%)	0	1231.58	1395.79	1642.10	1642.10	1642.10	1642.10	1642.10	1642.10	1642.10	
107	Royalty & knowhow fees payable											
108	Total cost of production	53714.04	60714.75	71203.20	71232.88	71264.04	71296.76	71331.11	71367.19	71405.06	71444.83	
109	Total expected sales	61578.85	69789.36	82105.13	82105.13	82105.13	82105.13	82105.13	82105.13	82105.13	82105.13	
110	Gross profit before interest	7864.81	9074.61	10901.92	10872.25	10841.09	10808.37	10774.01	10737.94	10700.06	10660.29	
111	Interest on term loan	791.87	593.90	277.16	19.80							
112	Interest on working capital	722.04	818.31	962.72	962.72	962.72	962.72	962.72	962.72	962.72	962.72	
113	Total financial expenses	1513.91	1412.21	1239.87	982.51	962.72	962.72	962.72	962.72	962.72	962.72	
114	Less depreciation by SLM	968.16	968.16	968.16	968.16	968.16	968.16	968.16	968.16	968.16	968.16	
115	Operating profit	5382.73	6694.23	8693.89	8921.57	8910.21	8877.49	8843.13	8807.06	9298.38	9610.89	
116	Other income if any											
117	Preliminary expenses written off	46.03	46.03	46.03	46.03	46.03	46.03	46.03	46.03	46.03	46.03	
118	Profit/loss before tax	5336.71	6648.20	8647.86	8875.54	8864.18	8831.46	8797.11	8761.03	9252.36	9564.87	
119	Provision for Tax	667.41	1095.34	1599.78	1723.19	1774.85	1805.28	1823.88	1850.93	1858.90	1853.30	
120	Profit after tax	4669.29	5552.86	7048.08	7152.35	7089.33	7026.18	6973.23	6910.11	7393.46	7711.56	
121	Less: dividend	395.94	659.89	791.87	791.87	791.87	791.87	791.87	791.87	791.87	791.87	
122	Retained profits	4273.36	4892.97	6256.21	6360.48	6297.45	6234.31	6181.35	6118.23	6601.58	6919.69	
123	Add: depreciation by SLM	968.16	968.16	968.16	968.16	968.16	968.16	968.16	968.16	968.16	968.16	
124	Add: preliminary expenses	46.03	46.03	46.03	46.03	46.03	46.03	46.03	46.03	46.03	46.03	
125	Net cash accruals	5287.55	5907.16	7270.40	7374.67	7311.64	7248.50	7195.54	7132.43	7086.57	7052.40	
126	Cumulative cash accruals	5287.55	11194.71	18465.10	25839.77	33151.42	40399.92	47595.46	54727.89	61814.46	68866.86	
127	Repayment of term loans		2639.57	2639.57	1319.79							

Figure 12 Estimates of Working Results

134	11 ALLOCATION OF COSTS FOR DEPRECIATION									
135	Figures are in INR Millions									
136		Direct cost	Direct Allocation Heads			Sub Total	Allocation of preli & preop exp	Total Allocation	Total After Allocation	
137			Land Development	Technical services	Contingency					
138	Land	125.98			5.02	131.00	2.27	7.29	133.2	
139	Buildings	1174.37			46.78	1221.15	21.17	67.96	1242.3	
140	Plant and machinery	7495.23			298.58	7793.81	135.14	433.73	7928.9	
141	Misc. fixed assets	874.05			34.82	908.87	15.76	50.58	924.6	
142	Preliminary & preoperative expenses	167.67			6.68	174.35				
143	Pre-operative interest	274.96			10.95	285.91	(Not Allocated)		285.9	
144	Margin money	2580.00	(Not Allocated)		102.78	2682.78	(Not Allocated)		2682.7	
145	Direct allocation heads	505.61								
146	Total	13197.87			505.61	13197.87	174.35	559.55	13197.8	

Allocating contingency to different major project cost components to allow detailing depreciation schedules

148	12 DEPRECIATION SCHEDULES											
149	12.1 DEPRECIATION BY STRAIGHT LINE METHOD											
150	Figures are in INR Millions											
151		Dep rate	Year ->1	2	3	4	5	6	7	8	9	10
152	BUILDINGS											
153	Value at beginning of the year		1221.15	1180.37	1139.58	1098.79	1058.01	1017.22	976.43	935.65	894.86	854.07
154	Depreciation @	3.34%	40.79	40.79	40.79	40.79	40.79	40.79	40.79	40.79	40.79	40.79
155	Year end value		1180.37	1139.58	1098.79	1058.01	1017.22	976.43	935.65	894.86	854.07	813.29
156	PLANT & MACHINERY											
157	Value at beginning of the year		7793.81	6912.33	6030.85	5149.37	4267.89	3386.41	2504.93	1623.45	741.97	389.69
158	Depreciation @	11.31%	881.48	881.48	881.48	881.48	881.48	881.48	881.48	881.48	352.28	
159	Year end value		6912.33	6030.85	5149.37	4267.89	3386.41	2504.93	1623.45	741.97	389.69	389.69
160	MISC FIXED ASSETS											
161	Value at beginning of the year		908.87	862.97	817.08	771.18	725.28	679.38	633.48	587.59	541.69	495.79
162	Depreciation @	5.05%	45.90	45.90	45.90	45.90	45.90	45.90	45.90	45.90	45.90	45.90
163	Year end value		862.97	817.08	771.18	725.28	679.38	633.48	587.59	541.69	495.79	449.89
164	DEPRECIATION SLM		968.16	968.16	968.16	968.16	968.16	968.16	968.16	968.16	438.96	86.68
165	12.2 DEPRECIATION BY WRITTEN DOWN VALUE METHOD											
166	BUILDINGS											
167	Value at beginning of the year		1221.15	1099.04	989.13	890.22	801.20	721.08	648.97	584.07	525.67	473.10
168	Depreciation @	10.00%	122.12	109.90	98.91	89.02	80.12	72.11	64.90	58.41	52.57	47.31
169	Year end value		1099.04	989.13	890.22	801.20	721.08	648.97	584.07	525.67	473.10	425.79
170	PLANT & MACHINERY											
171	Value at beginning of the year		7793.81	5196.13	3464.26	2309.62	1539.83	1026.60	684.44	456.31	389.69	389.69
172	Depreciation @	33.33%	2597.68	1731.87	1154.64	769.80	513.22	342.17	228.12	166.62		
173	Year end value		5196.13	3464.26	2309.62	1539.83	1026.60	684.44	456.31	389.69	389.69	389.69
174	MISC FIXED ASSETS											
175	Value at beginning of the year		908.87	771.18	654.34	555.21	471.10	399.73	339.17	287.78	244.18	207.19
176	Depreciation @	15.15%	137.69	116.83	99.13	84.11	71.37	60.56	51.38	43.60	36.99	31.39
177	Year end value		771.18	654.34	555.21	471.10	399.73	339.17	287.78	244.18	207.19	175.80
178	DEPRECIATION WDV		2857.49	1958.61	1352.68	942.93	664.71	474.83	344.40	168.63	89.56	78.70

Depreciation Schedules Straight Line and Written Down Values



13 CASH FLOW STATEMENT											
Figures are in INR Millions											
Item	Constn	1	2	3	4	5	6	7	8	9	10
Sources of funds:											
Ordinary share issue + capital subsidies	6598.94										
P.B.T. + Int. added		6850.62	8060.42	9887.73	9858.06	9826.90	9794.18	9759.82	9723.75	10215.07	10527.58
Depreciation - SLM		968.16	968.16	968.16	968.16	968.16	968.16	968.16	968.16	438.96	86.68
Increase in term loans	6598.94										
Increase in bank loans		7220.38	962.72	1444.08							
Preliminary expenses		46.03	46.03	46.03	46.03	46.03	46.03	46.03	46.03	46.03	46.03
TOTAL (a)	13197.87	15085.18	10037.33	12346.00	10872.25	10841.09	10808.37	10774.01	10737.94	10700.06	10660.29
Disposal of funds:											
Capital expenditure	10340.75										
Increase in working capital	1929.34	7220.38	1219.96	1829.94							
Decrease in term loans			2639.57	2639.57	1319.79						
Interest on term loan		791.87	593.90	277.16	19.80						
Interest on bank loans		722.04	818.31	962.72	962.72	962.72	962.72	962.72	962.72	962.72	962.72
Tax liability		667.41	1095.34	1599.78	1723.19	1774.85	1805.28	1823.88	1850.93	1858.90	1853.30
Dividends		395.94	659.89	791.87	791.87	791.87	791.87	791.87	791.87	791.87	791.87
Preliminary expenses	174.35										
TOTAL (b)	12444.43	9797.64	7026.99	8101.04	4817.36	3529.44	3559.87	3578.47	3605.52	3613.49	3607.89
Opening balance		753.44	6040.99	9051.33	13296.28	19351.17	26662.81	33911.31	41106.85	48239.28	55325.85
Surplus/deficit	753.44	5287.55	3010.34	4244.96	6054.88	7311.64	7248.50	7195.54	7132.43	7086.57	7052.40
Closing balance	753.44	6040.99	9051.33	13296.28	19351.17	26662.81	33911.31	41106.85	48239.28	55325.85	62378.26

Cash Flow Statement

15 PROJECTED BALANCE SHEET											
Figures are in INR Millions											
Particulars	Constn	1	2	3	4	5	6	7	8	9	10
Liabilities:											
Ordinary share cap + subsidies	6598.94	6598.94	6598.94	6598.94	6598.94	6598.94	6598.94	6598.94	6598.94	6598.94	6598.94
Reserves & surplus		4273.36	9166.32	15422.53	21783.01	28080.47	34314.77	40496.13	46614.36	53215.95	60135.64
Term loans	6598.94	6598.94	3959.36	1319.79							
Bank loans		7220.38	8183.09	9627.17	9627.17	9627.17	9627.17	9627.17	9627.17	9627.17	9627.17
Total Liabilities	13197.87	24691.61	27907.72	32968.42	38009.12	44306.57	50540.88	56722.23	62840.47	69442.05	76361.74
Assets:											
Gross fixed assets	10054.83	10054.83	10054.83	10054.83	10054.83	10054.83	10054.83	10054.83	10054.83	10054.83	10054.83
Less depreciation SLM		968.16	1936.33	2904.49	3872.66	4840.82	5808.99	6777.15	7745.31	8184.28	8270.96
Net fixed assets	10054.83	9086.67	8118.51	7150.34	6182.18	5214.01	4245.85	3277.68	2309.52	1870.55	1783.87
Current assets	1929.34	9149.71	10369.67	12199.62	12199.62	12199.62	12199.62	12199.62	12199.62	12199.62	12199.62
Cash and bank balance	753.44	6040.99	9051.33	13296.28	19351.17	26662.81	33911.31	41106.85	48239.28	55325.85	62378.26
Preliminary expenses	460.26	414.23	368.21	322.18	276.16	230.13	184.10	138.08	92.05	46.03	0.00
Total Assets	13197.87	24691.61	27907.72	32968.42	38009.12	44306.57	50540.88	56722.23	62840.47	69442.05	76361.74

Projected Balance Sheet. Since the taxation laws vary from country to country (and within any country from time to time), space is available for tax deductions in the taxation calculation table, and it has been made possible for the user to compute his own taxation add-on sheet and link its results to that table. The additional sheets included in the App also allow the user to carry out detailed calculations for determining costs of machinery, building, and others and link them to the App



7 OPTIMISATION OF FUND FLOW DURING CONSTRUCTION														Figures are in INR Millions	
Month ending last day of >>	Sep-22	Oct-22	Nov-22	Dec-22	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	Total	
Column 2 to 12 are at 2 month intervals >>	1	2	3	4	5	6	7	8	9	10	11	12			
DISPOSITION OF FUNDS															
Land and development	19.98	1.14	1.00	1.98	12.00									15.86	19.98
Building and civil work	19.90		6.00	5.00					3.00	1.90				-8.00	19.90
Plant and machinery	35.00		15.00											20.00	35.00
Technical services & knowhow	5.00	5.00													5.00
Misc. fixed assets	14.00													14.00	14.00
Prelim & cap issue expenses	16.00	4.00												12.00	16.00
Preoperative interest	376.32	62.14	56.46	50.96	45.28	39.59	34.46	28.78	23.28	17.60	12.10	6.42		-0.73	376.32
Preoperative expenses	12.67		1.00	4.00	4.00	1.00	0.67							2.00	12.67
Margin money	1929.34													1929.34	1929.34
Contingency provision	-0.01													-0.01	-0.01
Fund spent/required	2428.20	72.28	79.46	61.94	61.28	40.59	35.13	28.78	26.28	19.50	12.10	6.42	1984.45	2428.20	2428.20
Cumulative fund required		72.28	151.74	213.68	274.95	315.55	350.68	379.46	405.74	425.23	437.33	443.75	2428.20	2428.20	2428.20
Column 2 to 12 are at 2 month intervals >>		Oct-22	Nov-22	Dec-22	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	Total	
SOURCES OF FUNDS															
Promoters' equity	6598.94	73.00	79.00	11.00	3.80			1800.00						4632.14	6598.94
Term loan (debt)	6598.94								4.00		3.00	20.00	6571.94	6598.94	6598.94
Public issue															
Capital subsidy															
Funds available	13197.87	73.00	79.00	11.00	3.80			1800.00	4.00		3.00	20.00	11204.07	13197.87	13197.87
Cumulative funds available		73.00	152.00	163.00	166.80	166.80	166.80	1966.80	1970.80	1970.80	1973.80	1993.80	13197.87	13197.87	13197.87
		0.72	0.28	-50.68	-106.15	-149.75	-183.88	1567.34	1566.06	1545.57	1536.47	1560.05			
		A	A	A	A	A	A	A	A	A	A	A			
		Excess	Excess	Shortfall	Shortfall	Shortfall	Shortfall	Excess	Excess	Excess	Excess	Excess			

Figure 20 The Schedules page, showing how you can optimize drawdown of loans during the project construction period. A command button allows you to toggle between equated drawdown and optimized drawdown

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Users are welcome to send their comments, critiques, observations and suggestions to the author.

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