

## **OUTSOURCING DECISION EXAMPLE WITH EXPENSES ONLY COMPARISON**

### **Example Canada**

#### **INTRODUCTION**

This example shows how to compare two investments that;

Involves an investment in equipment

Incurs operating costs

Uses the “Make Expenses Only Yearly” and “Outsource Expenses Only Yearly” templates and the “Incremental Cash Flow Report” because revenues are not relevant to the investment decisions.

#### **EXAMPLE**

A manufacturer is introducing a new line of “Excel” pumps has to decide whether to;

1. Purchase and install the equipment for \$10,000,000 and manufacture the pump casing or:
2. Outsource the manufacturing of the pump casing which will require an investment of \$350,000 for material handlings equipment

#### **General Information**

Analysis Period: 9 Years

Corporate Marginal Tax Rate: 33.00%

% of Capital Gain: 50.00%

Discount Rate (Before Tax): 15.00%

#### **MAKE ANALYSIS**

##### **Project Info Folder**

Project Name: Pump Casing. Make Analysis

Project Description: Casing for the Excel Pumps

Analysis Period: 9 years

##### **Investor Folder**

Marginal Tax Rate: 33.00%

% of Capital Gain: 50.00%

Discount Rate (Before Tax): 15.00%

##### **Investment Folder**

Description: Plant and Equipment

Amount: \$10,000,000

CCA Class: Equipment/Machinery

CCA Rate: 30.00%

##### **Working Capital Folder**

Working Capital: Year 1 \$400,000

**Expenses Folder**

**Labor:** \$160,000 per month for one year increasing at 3.00% per year compounded for 2 years then 5.00% compounding per year

**Materials:**

**Price:** Year 1. \$300 per Unit for the first year then increasing at 5.00% per year compounding

**Quantity:** Year 1: 1000 per year for 1 year then increasing at 5.00% per year compounded for 2 years then 3.00% compounding per year

**Repair & Maintenance:** \$20,000 per month increasing at 3.00% compounding

**Utilities:** \$7,000 per month increasing at 4.00% compounding

**Insurance:** \$100,000 per year increasing at 3.00% compounding

**Incremental Overhead:** \$40,000 per month increasing at 3.00% compounding

**Rent:** 3 Terms. 15,000 Sq. Ft.

Term 1: 3 Years at \$10 per Sq. Ft per year

Term 2: 3 Years at \$12 per Sq. Ft per year

Term 3: 3 Years at \$16 per Sq. Ft per year

**Financing Folder**

Start Date: Year 1 January

Type: Interest Only Mortgage

Amount: \$4,000,000

Time Period: 6 years

Interest Rate: 7.00% per year

Payments: Monthly

Compounding Period: Monthly

**Salvage Value Folder**

Disposition Costs

Selling Expenses: 3.00% of Salvage Value

Removal Costs: \$600,000

Salvage Value:

Plant and Equipment: \$1,500,000

## **OUTSOURCE ANALYSIS**

### **Project Info Folder**

Project Name: Pump Casing. Outsource Analysis  
Project Description: Casing for Excel Pump Line  
Analysis Period: 9 years

### **Investor Folder**

Marginal Tax Rate: 33.00%  
% of Capital Gain: 50.00%  
Discount Rate (Before Tax): 15.00%

### **Investment Folder**

Description: Equipment & Facilities  
Amount: \$350,000  
CCA Class: Equipment/Machinery  
CCA Rate: 30.00%

### **Working Capital Folder**

Working Capital: Year 1 \$250,000

### **Expenses Folder**

#### **Product Cost (China):**

##### **Price:** 3 Term Stepped Projection

Term 1: 3 years at \$3,000 per Unit  
Term 2: 3 years at \$5,000 per Unit  
Term 3: 3 years at \$7,000 per Unit

**Quantity:** Year 1: 1000 per year for 1 year then increasing at 5.00% per year compounded for 2 years then 3.00% compounding per year

**Additional Labor:** \$6,000 per month for 1 year increasing at 3.00% per year compounded for 2 years then 5.00% compounding per year

**Insurance:** \$4,000 per year increasing at 3.00% compounding

**Incremental Overhead:** \$5,000 per year increasing at 3.00% compounding

##### **Rent:** 3 Terms. 4,000 Sq. Ft.

Term 1: 3 Years at \$10 per Sq. Ft per year  
Term 2: 3 Years at \$12 per Sq. Ft per year  
Term 3: 3 Years at \$16 per Sq. Ft per year

**Transportation & Handling:** 10.00% of Product Cost (China)

### **Financing Folder**

No financing

### **Salvage Value Folder**

Disposition Costs:  
Removal Costs: \$45,000  
Salvage Value:  
Plant and Equipment: \$70,000

## TEMPLATE SELECTION

The selection of the appropriate template is based on the following;

1. The analysis is not impacted by the revenues, which is the same for both options
2. Projections are Yearly
3. The analysis is comparing whether it is more cost effective to make pump casing themselves or outsourcing to a company in China

Templates: 'Make Expenses Only Yearly' projections and 'Outsource Expenses Only Yearly' projections

## STEPS

Using the Make and Outsource Expenses Only Yearly projections templates;

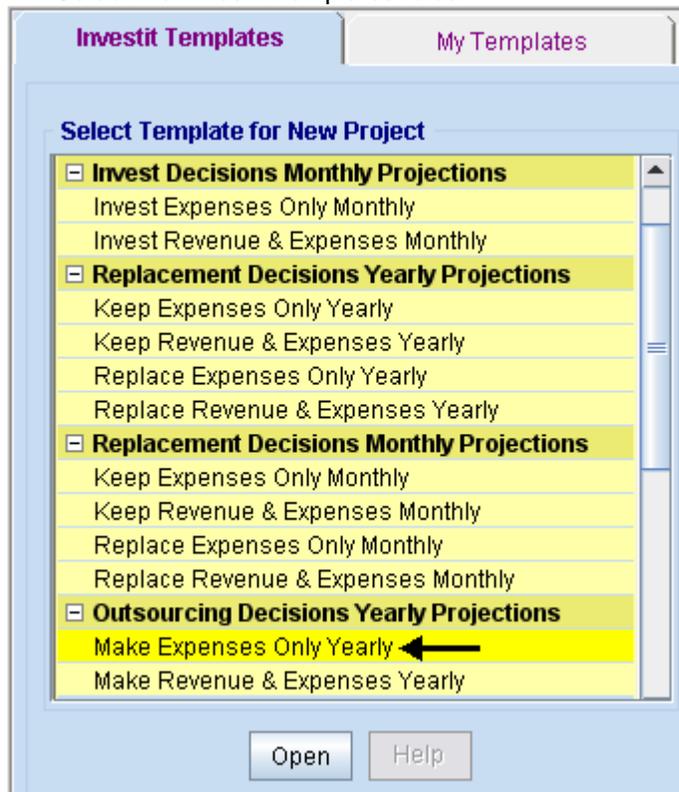
1. Enter the analysis for making the pump casings
2. Enter the analysis for outsourcing the pump casings
3. Use the "Project Comparison Report" or the "Incremental Cash Flow Report" to compare the two options

## INSTRUCTIONS FOR ENTERING the MAKE ANALYSIS

### Getting started

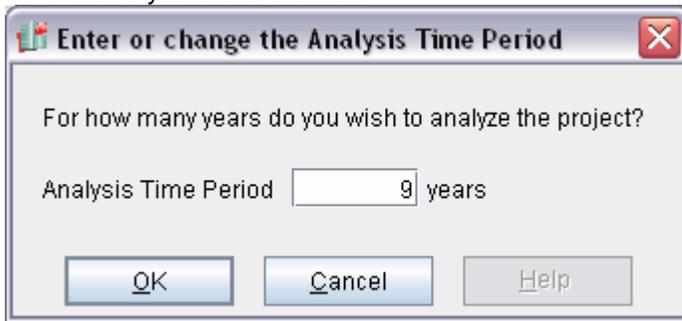
The first step is to open the Investit Decisions Template "Make Expenses Only Yearly" as follows:

1. Open Investit Decisions.
2. Select the Investit Templates folder



3. Select and open the Investit template "Make Expenses Only Yearly". The analysis period dialog will open at this point.

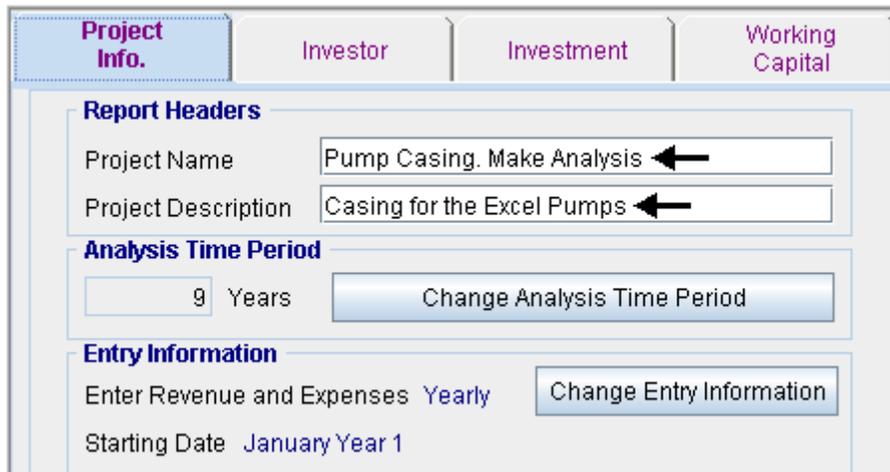
4. Enter 9 years and click OK



## Entering the project data and information

### Project Info Folder

Project Name: Pump Casing. Make Analysis  
Project Description: Casing for the Excel Pumps  
Analysis Period: 9 years



### Investor Folder

Investor's Marginal Tax Rate: 33.00%

Discount Rate (Before Tax): 15.00%

The Investor folder will look like this;

Project Info.	Investor	Investment
<input type="checkbox"/> Turn off Tax Calculations		
Investor's Marginal Tax Rate		→ 33.00%
<b>Tax Calculation on Sale based on</b>		
<input checked="" type="radio"/> Percentage of Capital Gain		50.00%
<input type="radio"/> Income Tax		
<b>Discount Rate or Desired Return on Investment</b>		
Before Tax		→ 15.00%
After Tax		9.75%

### Investment Folder

Description: Plant and Equipment

Amount: \$10,000,000

Depreciation Method: Equipment/Machinery

CCA Rate: 30.00%

Instructions for setting up the Investment folder

1. Delete rows 1 and 2 with description 'Land' and 'Building'
2. Change 'Equipment & Machinery' to 'Plant and Equipment'

Fill out the folder with the following entries;

Project Info.	Investor	Investment	Working Capital	Expenses	Financing		
CCA Claim Option: Full CCA Claim							
<b>Investments</b>							
Inflate			CCA Claim Setting				
Description	Amount	Year	Month	CCA Class	CCA Rate	First Year	Claim CCA in Last Year
Plant and Equipment	\$ 10,000,000	Year 1	Jan	Equipment/Machinery	30.00%	50.00%	<input checked="" type="checkbox"/>

### Working Capital Folder

Working Capital: Year 1 \$400,000

Project Info.	Investor	Investment	Working Capital	Expenses
<b>Working Capital</b>				
Description	Entry Choice	Year 1 Jan...	Year 2 Jan...	
Working Capital	Add or Subtract (-) Working Capital	\$ 400,000	\$ 0	

### Expenses Folder

**Labor:** \$160,000 per month for one year increasing at 3.00% per year compounded for 2 years then 5.00% compounding per year

**Materials:**

**Price:** Year 1. \$300 per Unit for the first year then increasing at 5.00% per year compounding

**Quantity:** Year 1: 1000 per year for 1 year then increasing at 5.00% per year compounded for 2 years then 3.00% compounding per year

**Repair & Maintenance:** \$20,000 per month increasing at 3.00% compounding

**Utilities:** \$7,000 per month increasing at 4.00% compounding

**Insurance:** \$100,000 per year increasing at 3.00% compounding

**Incremental Overhead:** \$400,000 per month increasing at 3.00% compounding

**Rent:** 3 Terms. 15,000 Sq. Ft.

Term 1: 3 Years at \$10 per Sq. Ft per year

Term 2: 3 Years at \$12 per Sq. Ft per year

Term 3: 3 Years at \$16 per Sq. Ft per year

Setting up the Expenses folder

1. Press the Add button to add the Building Rent row
2. Make the following entry choice changes

Project Info.	Investor	Investment	Working Capital	Expenses
<b>Expenses</b>				
Description	Entry Choice	Qty	Category	
Labor	\$ per Mo ←	—	Common ↓	
Materials	\$ per Unit and Quantity ←	—	Common ↓	
	Quantity	—		
Repairs & Maintenance	\$ per Mo ←	—	Common ↓	
Utilities	\$ per Mo ←	—	Common ↓	
Insurance	\$ per Yr	—	Common ↓	
Incremental Overhead	\$ per Mo ←	—	Common ↓	
Rent	\$ per Sq. Ft per Yr	15,000	Common ↓	

Setting up Labor

1. Select row 1 'Labor'
2. Click on the Projection Wizard button and enter the following entries

**Projection Wizard**

**Entry Information**

Description: Labor

Entry Choice: \$ per Mo

**Projection**

Entry	Project Entry Using...	Increase	Starting Year	Time Period		Cont. Proj.
				To End	Yrs	
\$160,000	Annual Compounding	3.00%	Year 1	3		<input checked="" type="checkbox"/>
	Annual Compounding	5.00%	Year 4	<input checked="" type="checkbox"/>	6	<input checked="" type="checkbox"/>

**Projection Description**

Labor

Entry Choice: \$ per Month

Year 1 \$160,000 per Month for 1 year

Compounding at 3.00% per year for next 2 years

then Compounding at 5.00% per year for next 6 years

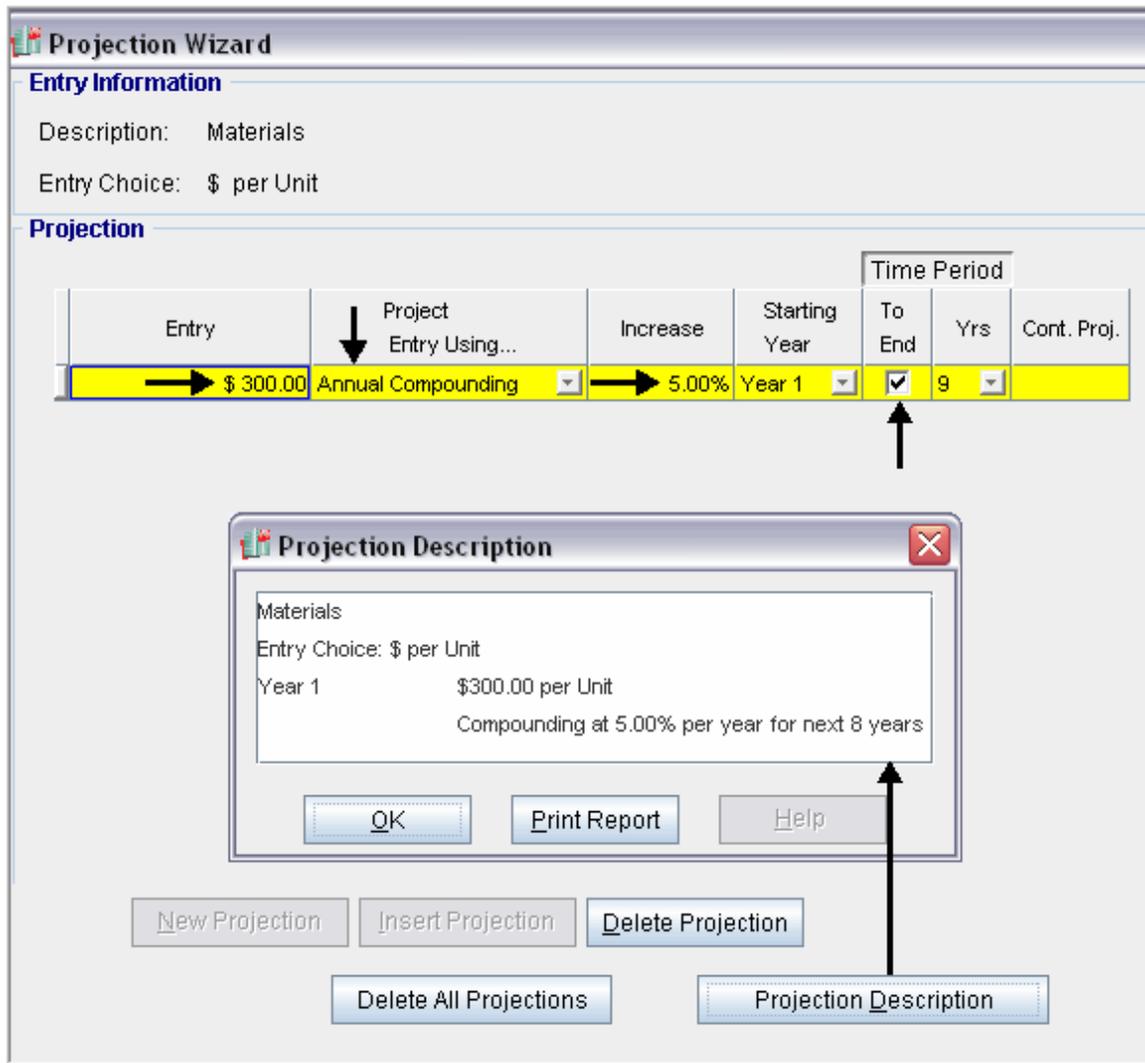
OK Print Report Help

New Projection Insert Projection Delete Projection

Delete All Projections Projection Description

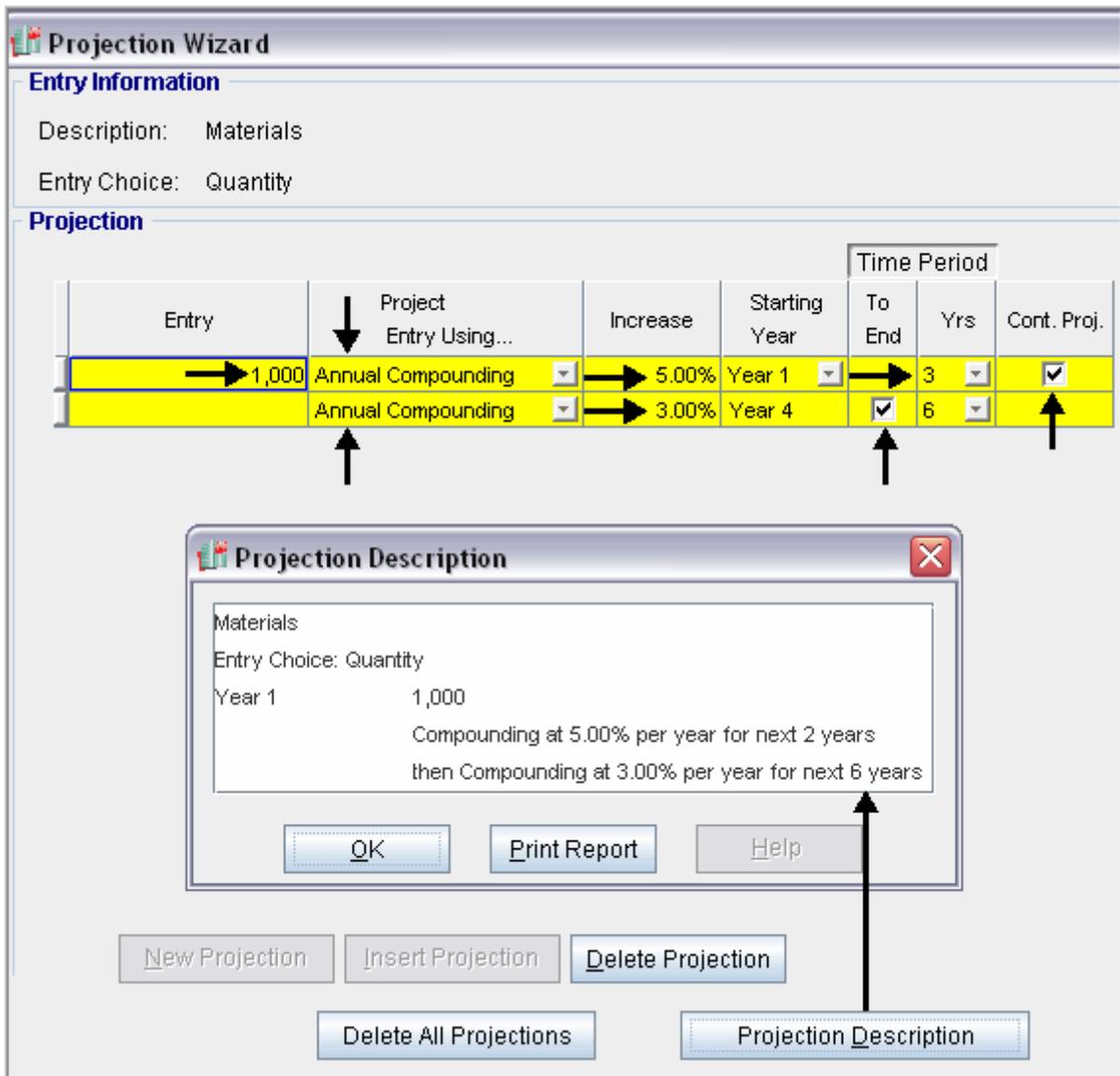
### Setting up Materials

1. Select row 2 'Materials'
2. Click on the Projection Wizard button and enter the following entries



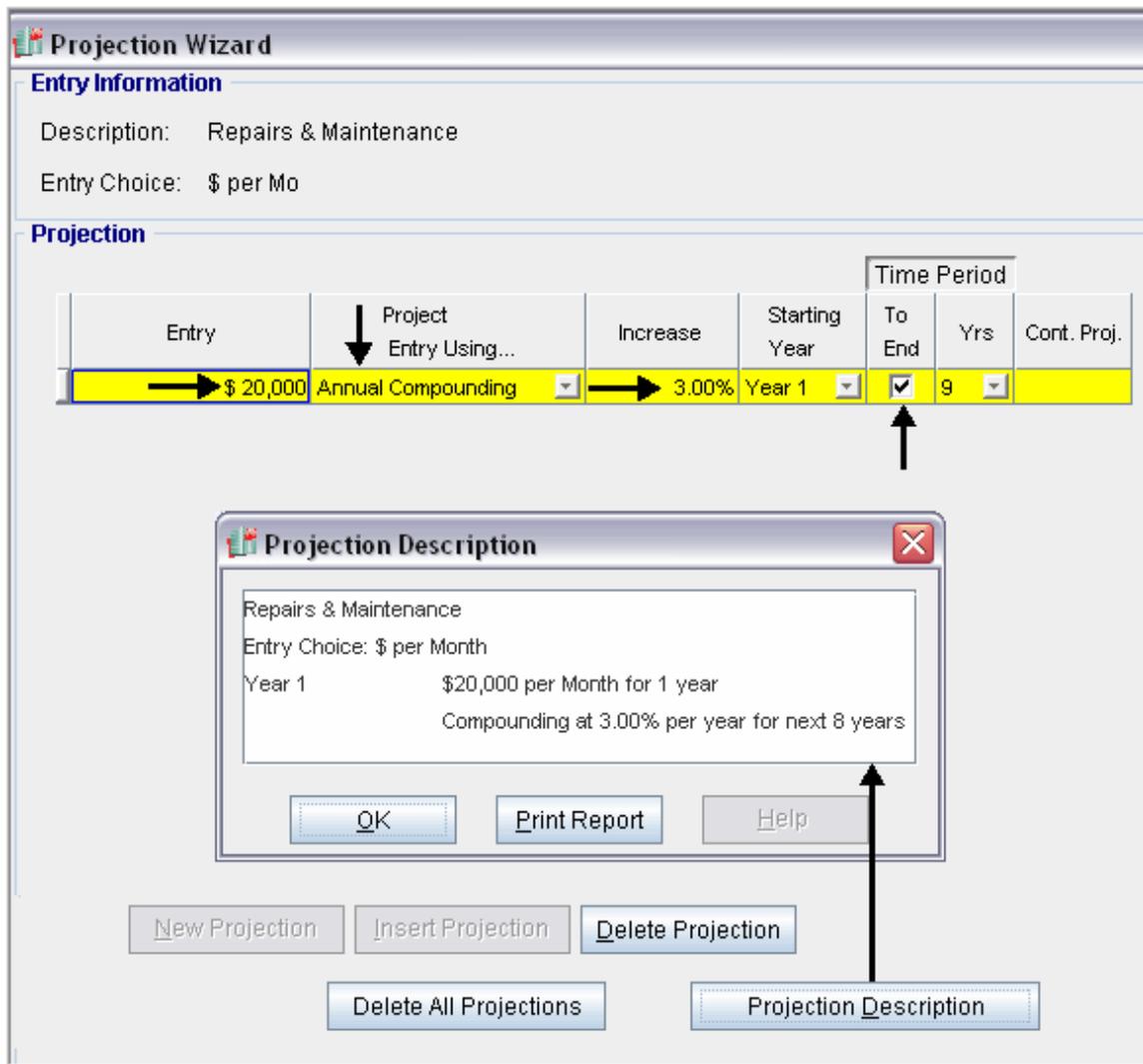
### Setting up the Quantity for Materials

1. Select the Quantity row and click on the Projection Wizard button
2. Enter the following entries into the Projection Wizard



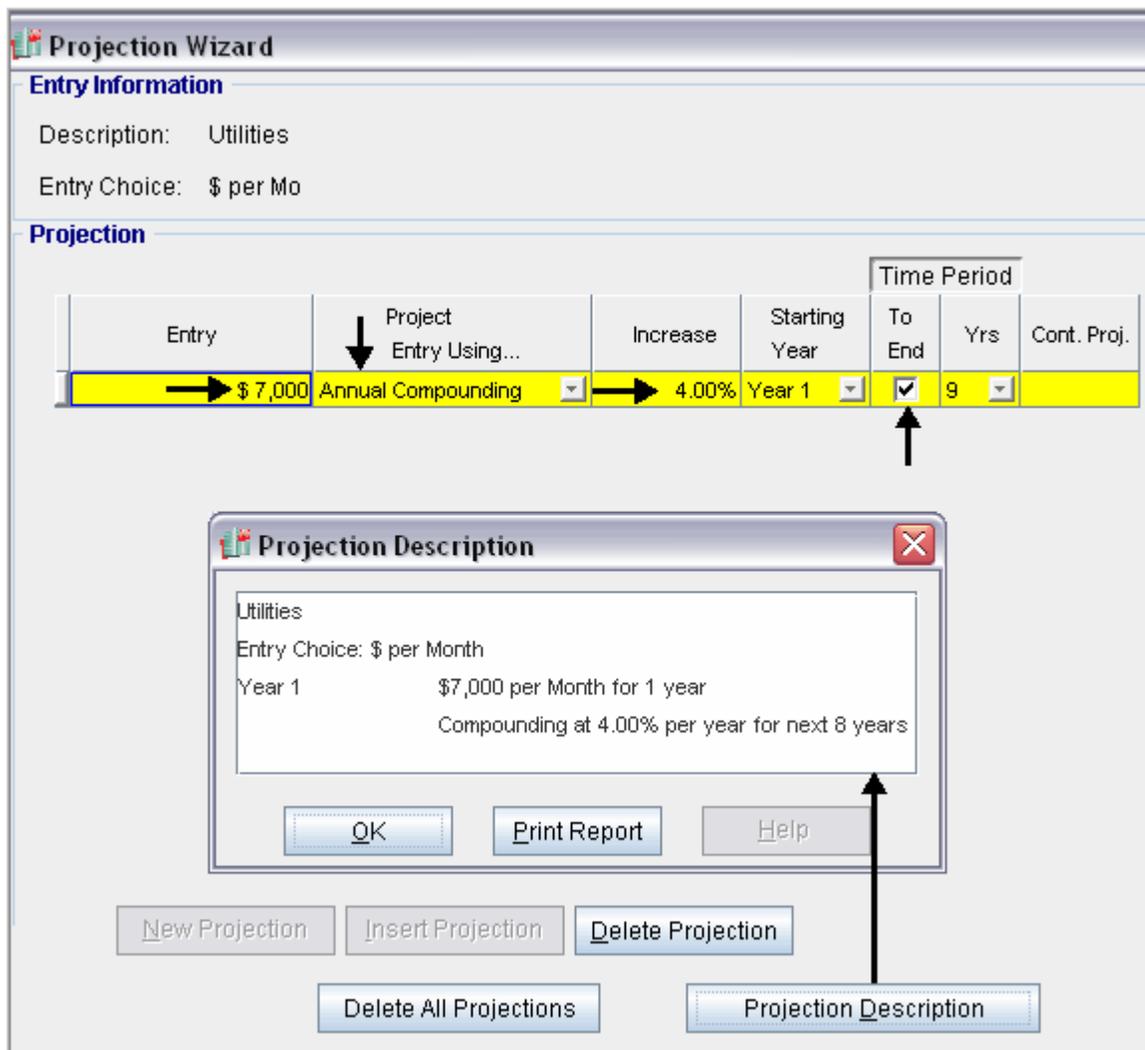
#### Steps for entering Repairs & Maintenance

1. Select the Repairs & Maintenance row
2. Click on the Projection Wizard button and enter the following entries



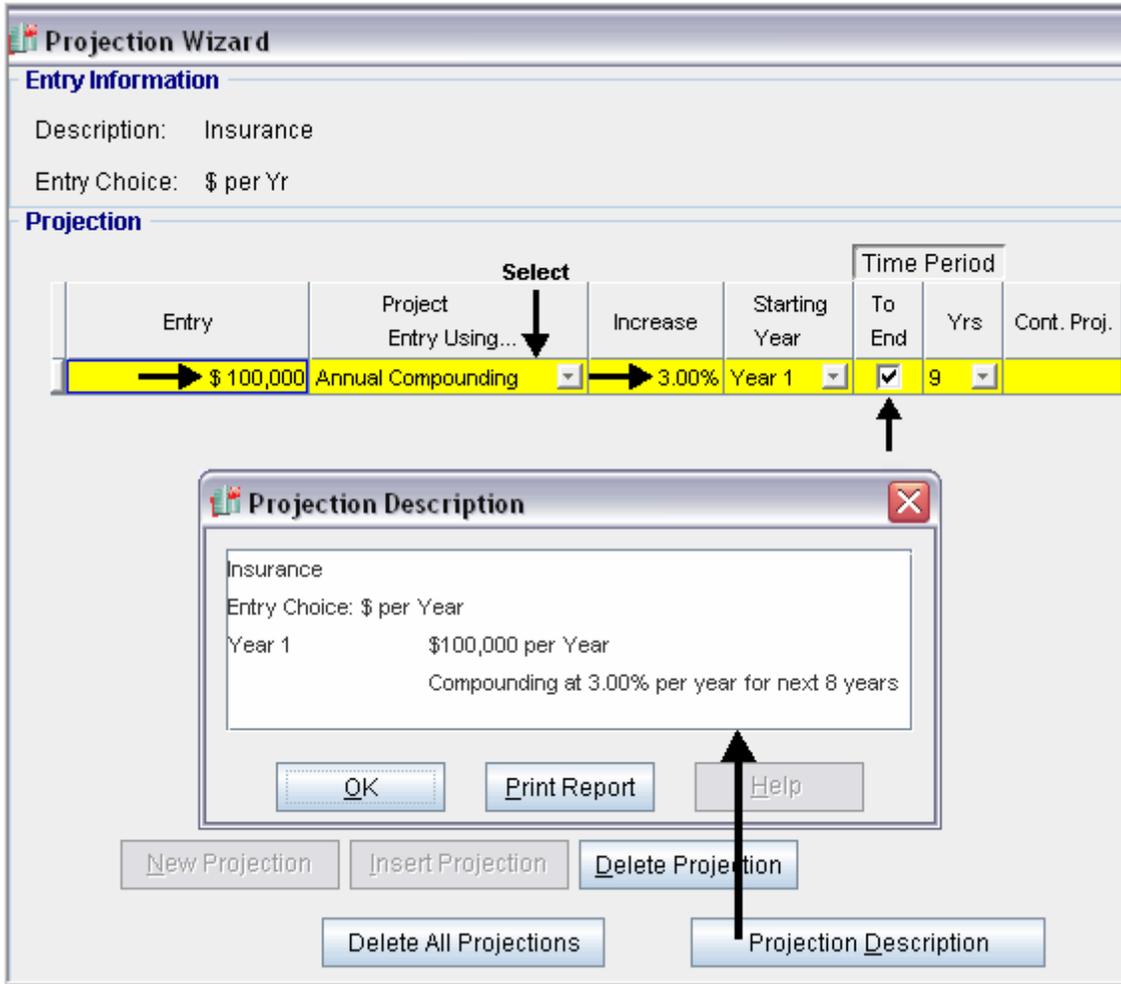
Steps for entering Utilities

1. Select the Utilities row
2. Click on the Projection Wizard button and enter the following entries



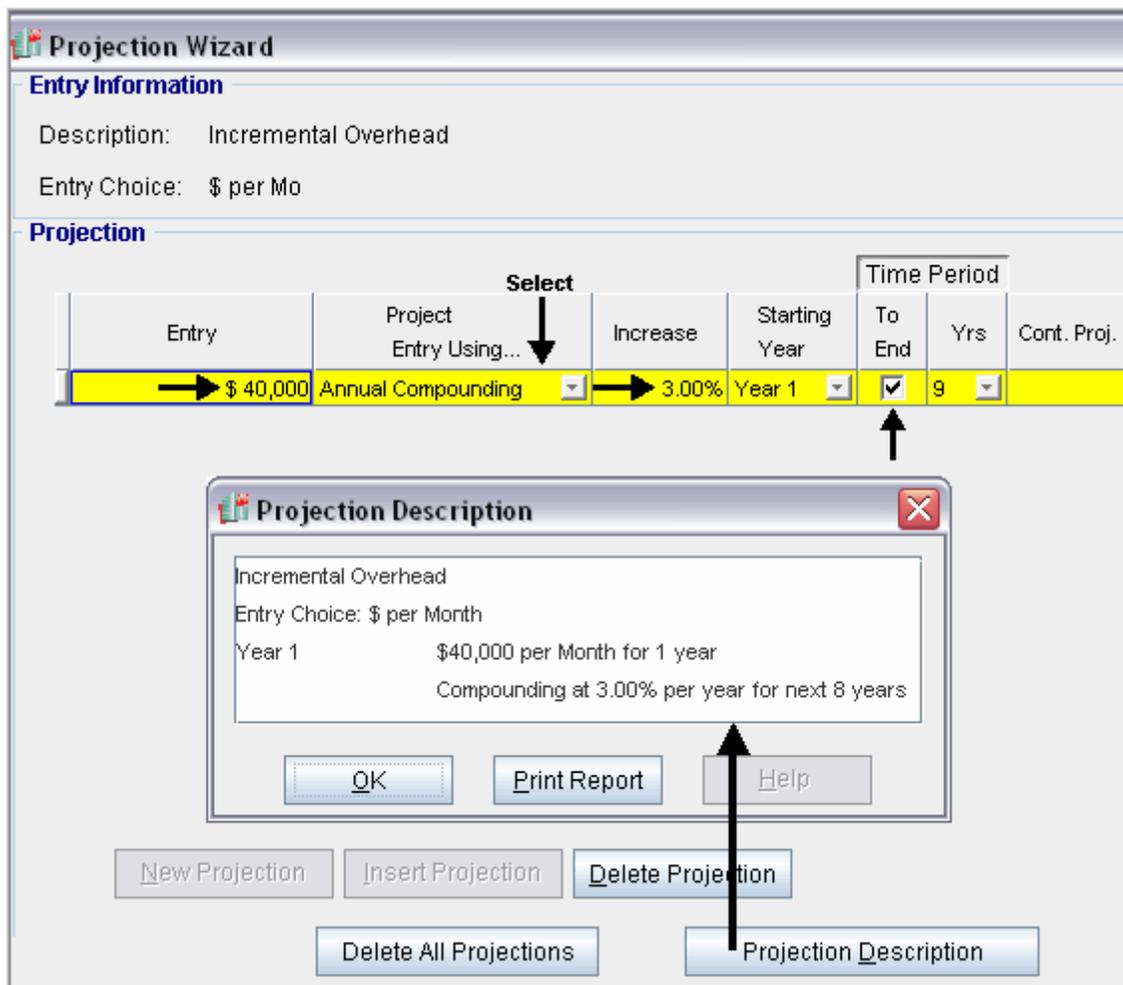
Steps for entering Insurance

1. Select the Insurance row
2. Click on the Projection Wizard button and enter the following entries



Steps for entering Incremental Overhead

1. Select the Incremental Overhead row
2. Click on the Projection Wizard button and enter the following entries



Steps for entering Rent

1. Select the Rent row
2. Click on the Projection Wizard button and enter the following entries

**Projection Wizard**

**Entry Information**  
 Description: Rent  
 Entry Choice: \$ per Sq. Ft per Yr

**Projection**

Entry	Project Entry Using...	Increase	Term	Starting Year	Time Period		Cont. Proj.
					To End	Yrs	
\$ 10.00	Stepped Projection	\$ 12.00	1	Year 1	3	3	
\$ 16.00		\$ 16.00	2	Year 4	3	3	
			3	Year 7	<input checked="" type="checkbox"/>	3	

**Stepped Projection**

New value at "End of Term" based on:

- Annual Compounding Rate Increase
- Enter Value
- \$ Increase
- % Increase

No. of Terms:

Show E

**Projection Description**

Rent  
 Entry Choice: \$ per Sq. Ft per Year  
 Quantity: 15,000  
 Year 1 Jan Stepped Projection  
 Term 1: \$10.00 per Sq. Ft per Year for 3 years  
 Term 2: Changed to \$12.00 per Sq. Ft per Year for 3 years  
 Term 3: Changed to \$16.00 per Sq. Ft per Year for 3 years

Buttons: OK, Print Report, Help

Buttons: New Projection, Insert Projection, Delete Projection

Buttons: Edit Stepped Projection, Delete All Projections, Projection Description

### Financing Folder

Start Date: Year 1 January  
Type: Interest Only Mortgage  
Amount: \$4,000,000  
Time Period: 6 years  
Interest Rate: 7.00% per year  
Payments: Monthly  
Compounding: Monthly

Make the following entries into the Mortgage window

**Mortgage**

**Mortgage Details**

Analysis Period: Year 1 Jan to Year 9 Dec

Commencing Year 1 Month January

Type Interest Only Payment

Amount \$ 4,000,000 Interest Rate Fixed

Description Equipment & Improvements

**Mortgage Settings**

Payment Frequency Monthly

Additional Payments/Borrowing

Payment Rounded Up to Nearest Cent

Compounding Frequency Monthly

**Terms and Amortization Details**

No of (Balloon) Terms 1

Time Period			
Term No	Years	Months	Nominal Interest Rate
1	6	0	7.000%

Make the entries and then click on the Compute button

OK Compute Fill Down Cancel Help

**Salvage Value Folder**

Disposition Costs:

Selling Expenses: 3.00%

Removal Costs: \$600,000

Salvage Value:

Plant and Equipment: \$1,500,000

Make the following entries in the Salvage Value folder

Working Capital	Expenses	Financing	Salvage Value
<b>Disposition Costs</b>			
	Description	Entry Choice	Expense
	Selling Expenses	% of Salvage Value	3.00%
	Legal	% of Salvage Value	0.00%
	Removal Costs	Amount	\$ 600,000
<input type="button" value="Add"/> <input type="button" value="Insert"/> <input type="button" value="Delete"/> <input type="button" value="Move"/>			
<b>Salvage Value</b>			
	Description	Capital Investment	Salvage Value
	Plant and Equipment	\$ 10,000,000	\$ 1,500,000

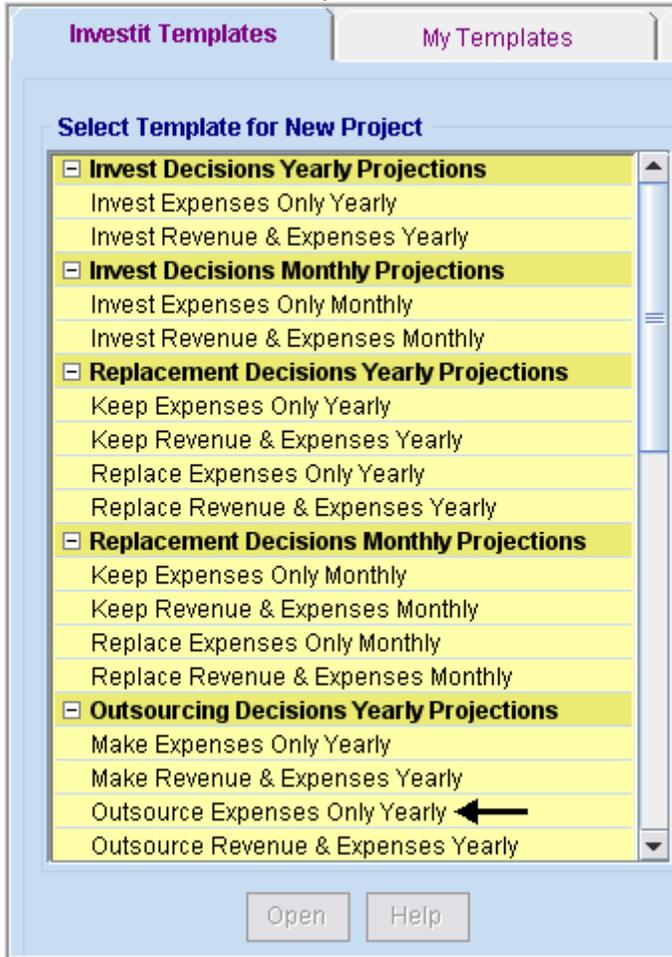
**SAVE YOUR PROJECT**

## INSTRUCTIONS FOR ENTERING the OUTSOURCE ANALYSIS

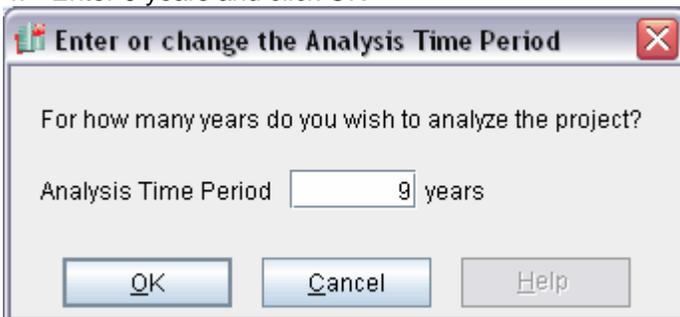
### Getting started

The first step is to open the Investit Decisions Template “Outsource Expenses Only Yearly” as follows:

1. Open Investit Decisions.
2. Select the Investit Template folder



3. Select and open the Investit template “Outsource Expenses Only Yearly”. The analysis period dialog will open at this point.
4. Enter 9 years and click OK



## Entering the project data and information

### Project Info Folder

Project Name: Pump Casing. Outsource Analysis  
Project Description: Casing for Excel Pump Line  
Analysis Period: 9 years

Project Info.	Investor	Investment	Working Capital
<b>Report Headers</b>			
Project Name	Pump Casing. Outsource Analysis ←		
Project Description	Casing for Excel Pump Line ←		
<b>Analysis Time Period</b>			
	9	Years	Change Analysis Time Period
<b>Entry Information</b>			
Enter Revenue and Expenses	Yearly		Change Entry Information
Starting Date	January Year 1		

### Investor Folder

Investor's Marginal Tax Rate: 33.00%  
Discount Rate (Before Tax): 15.00%

The Investor folder will look like this;

Project Info.	Investor	Investment
<input type="checkbox"/> Turn off Tax Calculations		
Investor's Marginal Tax Rate	→ 33.00%	
<b>Tax Calculation on Sale based on</b>		
<input checked="" type="radio"/> Percentage of Capital Gain	50.00%	
<input type="radio"/> Income Tax		
<b>Discount Rate or Desired Return on Investment</b>		
Before Tax	→ 15.00%	
After Tax	9.75%	

**Investment Folder**

Description: Equipment & Facilities  
 Amount: \$350,000  
 CCA Class: Equipment/Machinery  
 CCA 30%

Instructions for setting up the Investment folder

1. Enter the following data to complete the Investment folder;

Fill out the folder with the following entries;

Project Info.	Investor	Investment	Working Capital	Expenses	Financing		
CCA Claim Option: Full CCA Claim							
<b>Investments</b>							
Inflate				CCA Claim Setting			
Description	Amount	Year	Month	CCA Class	CCA Rate	First Year	Claim CCA in Last Year
Equipment & Facilities	\$ 350,000	Year 1	Jan	Equipment/Machinery	30.00%	50.00%	<input checked="" type="checkbox"/>

**Working Capital Folder**

Working Capital: Year 1 \$250,000

Project Info.	Investor	Investment	Working Capital	Expenses
<b>Working Capital</b>				
Description	Entry Choice	Year 1 Jan...	Year 2 Jan...	
Working Capital	Add or Subtract (-) Working Capital	\$ 250,000	\$ 0	

**Expenses Folder**

**Product Cost (China):**

**Price:** 3 Term Stepped Projection

Term 1: 3 years at \$3,000 per Unit

Term 2: 3 years at \$5,000 per Unit

Term 3: 3 years at \$7,000 per Unit

**Quantity:** Year 1: 1000 per year for 1 year then increasing at 5.00% per year compounded for 2 years then 3.00% compounding per year

**Additional Labor:** \$6,000 per month for 1 year increasing at 3.00% per year compounded for 2 years then 5.00% compounding per year

**Insurance:** \$4,000 per year increasing at 3.00% compounding

**Incremental Overhead:** \$5,000 per year increasing at 3.00% compounding

**Rent:** 3 Terms. 4,000 Sq. Ft.

Term 1: 3 Years at \$10 per Sq. Ft per year

Term 2: 3 Years at \$12 per Sq. Ft per year

Term 3: 3 Years at \$16 per Sq. Ft per year

**Transportation & Handling: 10.00% of Product Cost (China)**

Setting up the Expenses folder

1. Press the Add button twice to add the Rent and Transportation rows
2. Select the Incremental Overhead and press the Insert button to add the Insurance row
3. Make the following entry choice changes

Project Info.		Investor		Investment		Working Capital		Expenses	
<b>Expenses</b>									
Description	Entry Choice	Qty	Category						
Product Cost (China) ←	\$ per Unit and Quantity	—	Common						
	Quantity	—							
Additional Labor	\$ per Mo ←	—	Common						
Insurance ←	\$ per Yr	—	Common						
Incremental Overhead ←	\$ per Mo ←	—	Common						
Rent ←	\$ per Sq. Ft per Yr ←	4,000	Common						
Transportation & Handling ←	% of Expense(s) ←	—	Common						

4. When selecting the Entry Choice “% of Expense(s)” for Transportation & Handling a window will pop up. Select the following

**Expenses** ✖

**Select**

	Description
<input checked="" type="checkbox"/>	Product Cost (China)
<input type="checkbox"/>	Additional Labor
<input type="checkbox"/>	Insurance
<input type="checkbox"/>	Incremental Overhead
<input type="checkbox"/>	Rent

Setting up Product Cost (China)

1. Select row 1 'Product Cost (China)
2. Click on the Projection Wizard button and enter the following entries

**Projection Wizard**

**Entry Information**

Description: Product Cost (China)  
Entry Choice: \$ per Unit

**Projection**

Entry	Project Entry Using...	Increase	Term	Starting Year	Time Period		
					To End	Yrs	Cont. Proj.
\$ 3,000	Stepped Projection	\$ 5,000	1	Year 1	3		
		\$ 7,000	2	Year 4	3		
			3	Year 7	<input checked="" type="checkbox"/>	3	

**Projection Description**

Product Cost (China)  
Entry Choice: \$ per Unit  
Year 1 Jan Stepped Projection  
Term 1: \$3,000 per Unit for 3 years  
Term 2: Changed to \$5,000 per Unit for 3 years  
Term 3: Changed to \$7,000 per Unit for 3 years

Buttons: OK, Print Report, Help

Buttons: New Projection, Insert Projection, Delete Projection

Buttons: Edit Stepped Projection, Delete All Projections, Projection Description

Setting up the Quantity for 'Product Cost (China)'

3. Select the Quantity row for 'Product Cost (China)'
4. Click on the Projection Wizard button and enter the following entries

**Projection Wizard**

**Entry Information**

Description: Product Cost (China)  
Entry Choice: Quantity

**Projection**

Entry	Project Entry Using...	Increase	Starting Year	Time Period			Cont. Proj.
				To End	Yrs		
→ 1,000	Annual Compounding	→ 5.00%	Year 1	→ 3	→	<input checked="" type="checkbox"/>	
	Annual Compounding	→ 3.00%	Year 4	→	6	<input checked="" type="checkbox"/>	

**Projection Description**

Product Cost (China)  
Entry Choice: Quantity  
Year 1            1,000  
                         Compounding at 5.00% per year for next 2 years  
                         then Compounding at 3.00% per year for next 6 years

Buttons: OK, Print Report, Help, New Projection, Insert Projection, Delete Projection, Delete All Projections, Projection Description

Setting up Additional Labor

1. Select row 'Additional Labor'
2. Click on the Projection Wizard button and enter the following entries

The screenshot displays the 'Projection Wizard' application window. It is divided into two main sections: 'Entry Information' and 'Projection'.

**Entry Information:**

- Description: Additional Labor
- Entry Choice: \$ per Mo

**Projection Table:**

Entry	Project Entry Using...	Increase	Starting Year	Time Period		Cont. Proj.
				To End	Yrs	
\$ 6,000	Annual Compounding	3.00%	Year 1	3		<input checked="" type="checkbox"/>
	Annual Compounding	5.00%	Year 4	6		<input checked="" type="checkbox"/>

**Projection Description Dialog Box:**

Additional Labor  
 Entry Choice: \$ per Month  
 Year 1 \$6,000 per Month for 1 year  
 Compounding at 3.00% per year for next 2 years  
 then Compounding at 5.00% per year for next 6 years

Buttons: OK, Print Report, Help

Bottom Buttons: New Projection, Insert Projection, Delete Projection, Delete All Projections, Projection Description

### Setting up the Insurance

1. Select the Insurance row
2. Click on the Projection Wizard button and enter the following entries

The screenshot displays the 'Projection Wizard' application window. It is divided into two main sections: 'Entry Information' and 'Projection'.

**Entry Information:**  
Description: Insurance  
Entry Choice: \$ per Yr

**Projection:**  
A table with columns: Entry, Project Entry Using..., Increase, Starting Year, Time Period (To End, Yrs), and Cont. Proj. The first row is highlighted in yellow and contains the following data:  
Entry: \$ 4,000  
Project Entry Using...: Annual Compounding  
Increase: 3.00%  
Starting Year: Year 1  
Time Period (To End): [checked]  
Yrs: 9  
Cont. Proj.: [unchecked]

Below the table is a 'Projection Description' dialog box with the following text:  
Insurance  
Entry Choice: \$ per Year  
Year 1 \$4,000 per Year  
Compounding at 3.00% per year for next 8 years  
Buttons: OK, Print Report, Help

At the bottom of the main window are several buttons: New Projection, Insert Projection, Delete Projection, Delete All Projections, and Projection Description. Arrows in the image indicate the flow of information: from the 'Projection Description' dialog to the 'To End' checkbox in the table, and from the 'Projection Description' dialog to the 'Projection Description' button at the bottom.

### Steps for entering Incremental Overhead

1. Select the Incremental Overhead row
2. Click on the Projection Wizard button and enter the following entries

The screenshot displays the 'Projection Wizard' application window. It is divided into two main sections: 'Entry Information' and 'Projection'.

**Entry Information:**  
Description: Incremental Overhead  
Entry Choice: \$ per Mo

**Projection:**

Entry	Project Entry Using...	Increase	Starting Year	Time Period		Cont. Proj.
				To End	Yrs	
\$ 5,000	Annual Compounding	3.00%	Year 1	<input checked="" type="checkbox"/>	9	

A 'Projection Description' dialog box is open, showing the following details:

Incremental Overhead  
Entry Choice: \$ per Month  
Year 1 \$5,000 per Month for 1 year  
Compounding at 3.00% per year for next 8 years

The dialog box includes buttons for 'OK', 'Print Report', and 'Help'. Below the dialog box, there are several control buttons: 'New Projection', 'Insert Projection', 'Delete Projection', 'Delete All Projections', and 'Projection Description'. Arrows in the original image point from the 'Projection Description' button to the dialog box and from the 'To End' checkbox in the table to the dialog box.

Steps for entering Rent

1. Select the Rent row
2. Click on the Projection Wizard button and enter the following entries

**Projection Wizard**

**Entry Information**

Description: Rent  
Entry Choice: \$ per Sq. Ft per Yr

**Projection**

Entry	Project Entry Using...	Increase	Term	Time Period			Cont. Proj.
				Starting Year	To End	Yrs	
\$ 10.00	Stepped Projection	\$ 12.00	1	Year 1	3		
\$ 16.00		\$ 16.00	2	Year 4	3		
			3	Year 7	3	<input checked="" type="checkbox"/>	

**Stepped Projection**

New value at "End of Term" based on:

Annual Compounding Rate Increase

Enter Value

\$ Increase

% Increase

No. of Terms: 3

Show Example ->

**Projection Description**

Rent  
Entry Choice: \$ per Sq. Ft per Year  
Quantity: 4,000  
Year 1 Jan Stepped Projection  
Term 1: \$10.00 per Sq. Ft per Year for 3 years  
Term 2: Changed to \$12.00 per Sq. Ft per Year for 3 years  
Term 3: Changed to \$16.00 per Sq. Ft per Year for 3 years

Buttons: OK, Print Report, Help

Buttons: New Projection, Insert Projection, Delete Projection

Buttons: Edit Stepped Projection, Delete All Projections, Projection Description

Steps for entering Transportation & Handling

1. Select the Transportation & Handling row
2. Click on the Projection Wizard button and enter the following entries

The screenshot displays the 'Projection Wizard' window. Under the 'Entry Information' section, the 'Description' is 'Transportation & Handling' and the 'Entry Choice' is '% of Expense(s)'. The 'Projection' section contains a table with the following data:

%	Project Entry Using...	Increase	Starting Year	To End	Yrs	Cont. Proj.
10.00%	Constant (Fill Right)		Year 1	<input checked="" type="checkbox"/>	9	

An arrow points from the '10.00%' value to the 'Projection Description' dialog box. This dialog box shows the following details:

Transportation & Handling  
 Entry Choice: % of Expense(s)  
 Product Cost (China)  
 Year 1 10.00% of Expense(s)  
 Constant per year for next 8 years

Buttons for 'OK' and 'Print Report' are visible at the bottom of the dialog. At the bottom of the main window, there are buttons for 'New Projection', 'Insert Projection', 'Delete Projection', 'Delete All Projections', and 'Projection Description'. An arrow points from the 'Projection Description' button to the dialog box.

**Financing Folder**

No Financing

**Salvage Value Folder**

Disposition Costs:

Removal Costs: \$45,000

Salvage Value:

Plant and Equipment: \$70,000

Make the following entries in the Salvage Value folder

Working Capital	Expenses	Financing	Salvage Value
<b>Disposition Costs</b>			
	Description	Entry Choice	Expense
	Selling Expenses	% of Salvage Value	0.00%
	Legal Fees	% of Salvage Value	0.00%
	Removal Costs	Amount	→ \$ 45,000
<input type="button" value="Add"/> <input type="button" value="Insert"/> <input type="button" value="Delete"/> <input type="button" value="Move"/>			
<b>Salvage Value</b>			
	Description	Capital Investment	Salvage Value
	Equipment & Facilities	\$ 350,000	→ \$ 70,000

**SAVE YOUR PROJECT**

## DECIDING BETWEEN THE “MAKE” or “BUY”

To decide between the two options use the;

- a) The Project Comparison Report and
- b) The Incremental Cash Flow Report

### Project Comparison Report

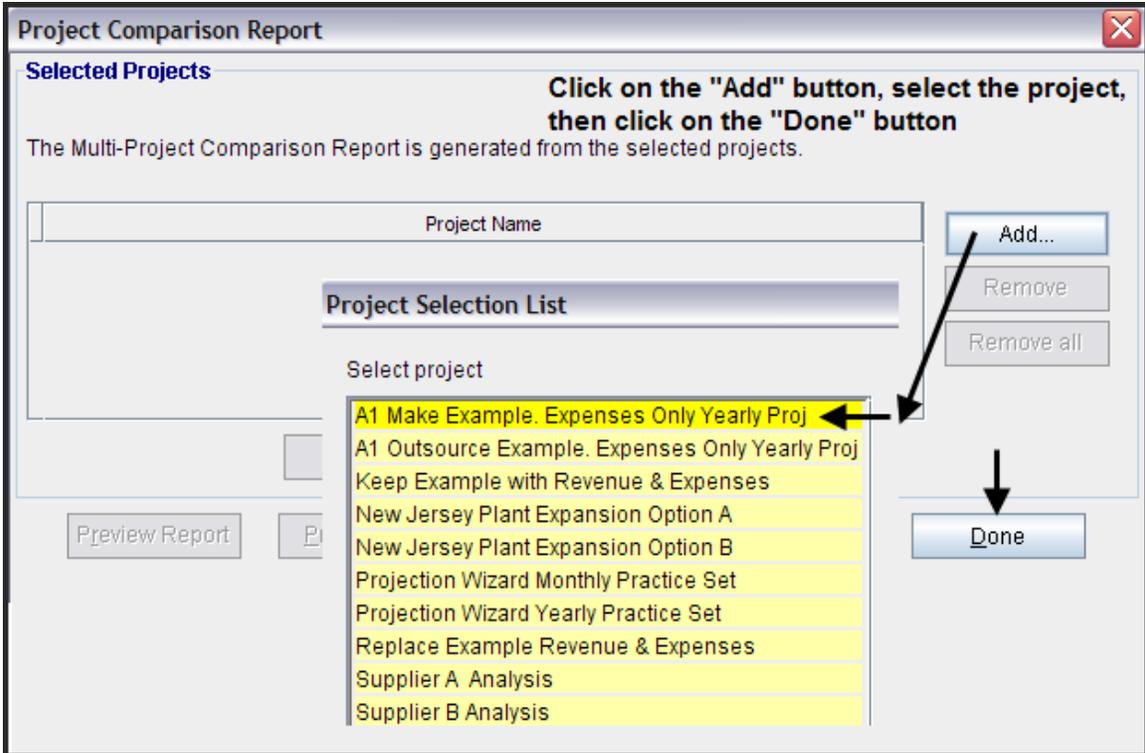
Up to four projects can be compared side by side.

Steps involved in selecting the projects for the Project Comparison Report.

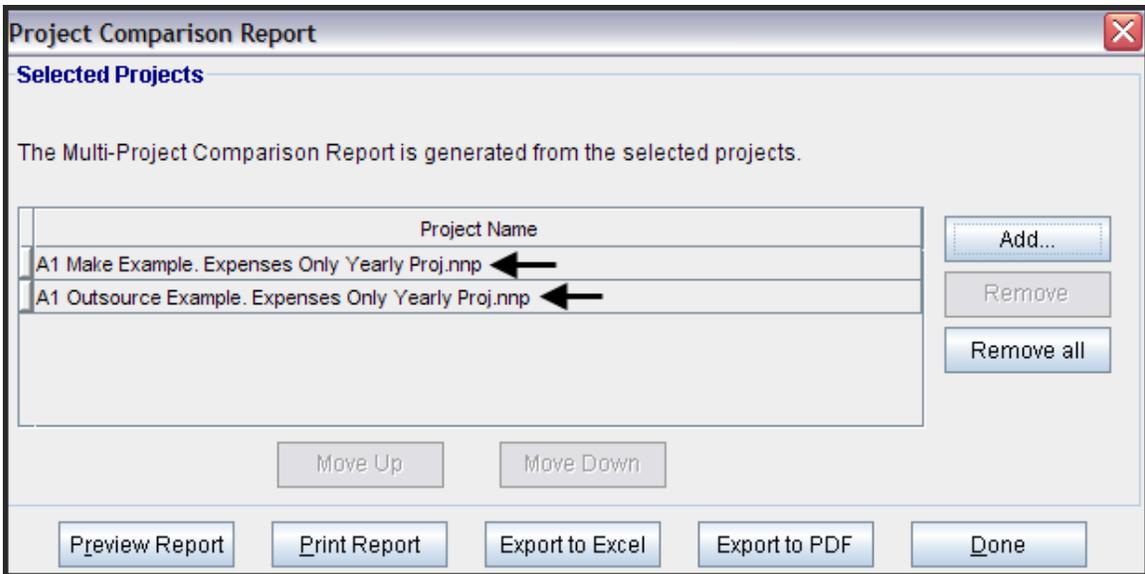
1. Select the Project Comparison Report on the Report menu



2. On the Project Comparison Report dialog click on the “Add” button to display the Report Selection List. Select the Project and click ‘Ok’. Repeat the process to add another project(s).



3. The diagram below shows selected projects to be displayed in the "Project Comparison Report"



**Project Comparison Report**

<b>Project Comparison Report (Before Tax)</b>			
Net Cash Flow( Before Tax)			
		A1 Make Example. Expenses Only Yearly Proj	A1 Outsource Example. Expenses Only Yearly Proj
Year	0	(6,400,000)	(600,000)
	1	(3,954,000)	(3,726,000)
	2	(3,670,310)	(3,645,080)
	3	(3,792,535)	(3,824,184)
	4	(3,983,822)	(6,446,135)
	5	(4,153,535)	(6,639,242)
	6	(8,332,173)	(6,838,105)
	7	(4,300,224)	(9,788,960)
	8	(4,498,631)	(10,088,495)
	9	(3,052,132)	(9,863,335)
	<b>Total</b>	<b>(46,137,364)</b>	<b>(61,469,536)</b>
Financial Return Before Tax			
Internal Rate of Return ( IRR)		N/A	N/A
MIRR		N/A	N/A
Short term financing rate			
Short term reinvestment rate			
Net Present Value (NPV)	➔	\$ 27,007,060) at 15.00%	➔ \$ 28,835,199) at 15.00%
Annual Equivalency	➔	(\$ 5,659,978) at 15.00%	➔ (\$ 6,043,108) at 15.00%
Benefit to Cost Ratio		N/A	N/A
Payback Period (Years)		N/A	N/A
Discounted Pay Back Period (Years)		N/A	N/A
Note Unable to calculate the IRR and MIRR because all the Cash Flows are negative.			

**Interpretation and Decision**

Financial Results

Option	Net Present Value (NV) at 15.00%	Annual Equivalency at 15.00%
<b>Make</b>	(\$27,007,060)	(\$5,659,987)
<b>Outsource</b>	(\$28,835,199)	(\$6,043,108)

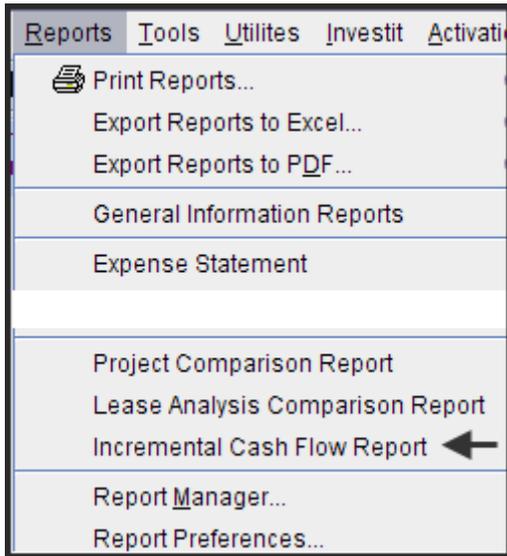
The company should choose the option that provides the lowest Net Present Value (NPV), which is to “Make” the pumps rather than “Outsource” them.

## Incremental Cash Flow Report

Can be used to show the differences in the cash for “Make” versus “Outsource”

Steps

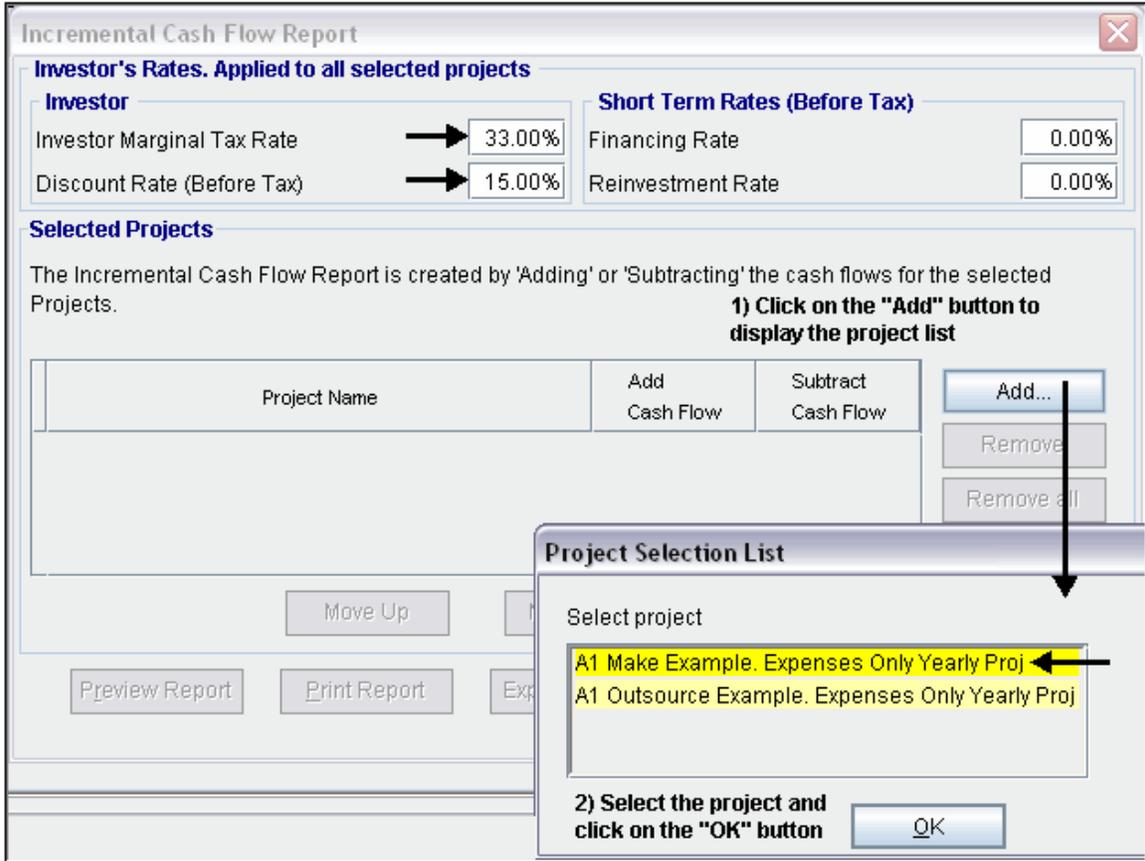
Select the Incremental Cash Flow on the Report menu



Enter;

Investor's Marginal Tax Rate  
Discount Rate  
Short Term Rates

On the "Incremental Cash Flow Report" dialog click on the "Add" button to display the Report Selection List. Select the Project and click 'Ok'. Repeat the process to add another project(s).



The selected projects for the Incremental Cash Flow Report are;

**Incremental Cash Flow Report**

**Investor's Rates. Applied to all selected projects**

Investor		Short Term Rates (Before Tax)	
Investor Marginal Tax Rate	→ 33.00%	Financing Rate	0.00%
Discount Rate (Before Tax)	→ 15.00%	Reinvestment Rate	0.00%

**Selected Projects**

The Incremental Cash Flow Report is created by 'Adding' or 'Subtracting' the cash flows for the selected Projects.

Project Name	Add Cash Flow	Subtract Cash Flow
A1 Make Example. Expenses Only Yearly Proj.nnp	→ <input checked="" type="radio"/>	<input type="radio"/>
A1 Outsource Example. Expenses Only Yearly Proj.nnp	<input type="radio"/>	→ <input checked="" type="radio"/>

**The Cash Flow for 'Outsource' will be subtracted from the Cash Flow for 'Make'**

↓

Move Up    Move Down

Preview Report    Print Report    Export to Excel    Export to PDF    Done

Click on the "Preview Report" button to display the "Incremental Cash Flow Report"

				<b>Incremental Cash Flow Report (Before Tax)</b>		
Net Cash Flow( Before Tax)						
		Plus	Minus		Incremental	
		A1 Make Example.	A1 Outsource Example.		Net Cash Flow	
		Expenses Only Yearly Proj	Expenses Only Yearly Proj		(Before Tax)	
Year						
	0	(6,400,000)		(600,000)	(5,800,000)	
	1	(3,954,000)		(3,726,000)	(228,000)	
	2	(3,670,310)		(3,645,080)	(25,230)	
	3	(3,792,535)		(3,824,184)	31,649	
	4	(3,983,822)		(6,446,135)	2,462,313	
	5	(4,153,535)		(6,639,242)	2,485,707	
	6	(8,332,173)		(6,838,105)	(1,494,068)	
	7	(4,300,224)		(9,788,960)	5,488,736	
	8	(4,488,631)		( 10,088,495)	5,599,864	
	9	(3,052,132)		(9,863,335)	6,811,203	
	<b>Total</b>	<b>(46,137,364)</b>		<b>(61,459,536)</b>	<b>15,322,172</b>	
Before Tax Financial Return						
Internal Rate of Return ( IRR)		N/A		N/A	→ 19.55%	
Net Present Value (NPV) at 15.00%	→	(\$ 27,007,060)	→	(\$ 28,835,199)	→ \$ 1,828,139	
Modified Internal Rate of Return (MIRR)		N/A		N/A	13.11%	
Short term financing rate		-		-	-	
Short term reinvestment rate		-		-	-	
Annual Equivalency at 15.00%		(\$ 5,659,978)		(\$ 6,043,108)	\$ 383,131	
Benefit to Cost Ratio at 15.00%		N/A		N/A	N/A	
Payback Period		N/A		N/A	6.47 years	
Discounted Pay Back Period at 15.00%		N/A		N/A	8.06 years	

### Interpretation and conclusion

Making the pumps will save \$1,828,139 when discounted at 15.00% and provide an Internal Rate of Return (IRR) of 19.55%