

FEETA

The Funding Energy-Efficient Technology model (FEET)



Introduction

This type of model employs a discounted cashflow technique, which is a tried and tested methodology, used by financial managers in many organisations as a method of evaluating alternative investment strategies. It incorporates the investment criteria specific to the organization's requirements, which can be varied as required. Output is expressed as the net effect on the cashflow of the organisation, expressed in today's monetary value and the resultant return on the capital invested.

In the "energy-efficient" context, this model can be used to calculate the net cost of investing in a more energy efficient product, which may well have a higher initial acquisition value, but could result in long term cost advantages in terms of energy saving. It can therefore be used as a tool that presents the outcomes of different strategies so that they can be considered together by the purchasers' engineers and commercial personnel together. The outputs from this specific model aim to show what savings can be made from selecting an energy efficient product. These outputs are shown in various ways including the variation that they will cause on the Profit and Loss Accounts for the following years.

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Terms and conventions used in the Model

ASSUMPTIONS WORKSHEET

The Assumptions worksheet contains the variables specific to the client, which need to be completed when using the model.

- Cost of capital - the % return that the organisation expects to achieve from an investment.
- Tax rate - this is the simplified Corporation Tax rate applicable to most organizations, currently 30%.
- Interest rate - the cost of borrowing or the expected return on invested funds over the life of the project.
- Discounted payback period - the period in which the investment is required to achieve a positive cashflow.

CAPITAL INVESTMENT WORKSHEET

In the example shown in Year 1, the costs of the recommended products are shown as a positive and the corresponding competitor's products are shown as a negative for each depreciation period. The resulting total capital investment value at the foot of the table is thus the net additional cost of selecting the recommended product.

PROFIT AND LOSS WORKSHEET

The annual revenue benefits in the example are principally the value of anticipated energy savings which will accrue as a result of using the recommended product. There may be other net savings that can also be included, for example greater intervals between component replacement and servicing requirements. The annual revenue costs are the net savings in cost resulting from the choice of the recommended product. The resulting net profit/loss after tax is therefore the incremental effect of using the recommended product.

CASH FLOW AND DEPRECIATION WORKSHEETS

These are calculation sheets only and require no completion by the user of the model.

EXECUTIVE SUMMARY WORKSHEET

The executive summary sheet shows the actual net result of the investment compared with the hurdle rate required by the client, as follows:

- Net Present Value - the NPV is the present value of the difference between the cash inflows and outflows for the project. If the NPV is positive, the investment has generated a net cash surplus, expressed in today's monetary value.
- Internal Rate of Return - the IRR is the average rate of return on the money invested in the project. This should be compared with the hurdle rate required by the organisation.
- Discounted Payback - this is the point in the project at which the discounted net cashflow becomes positive.

SUMMARY

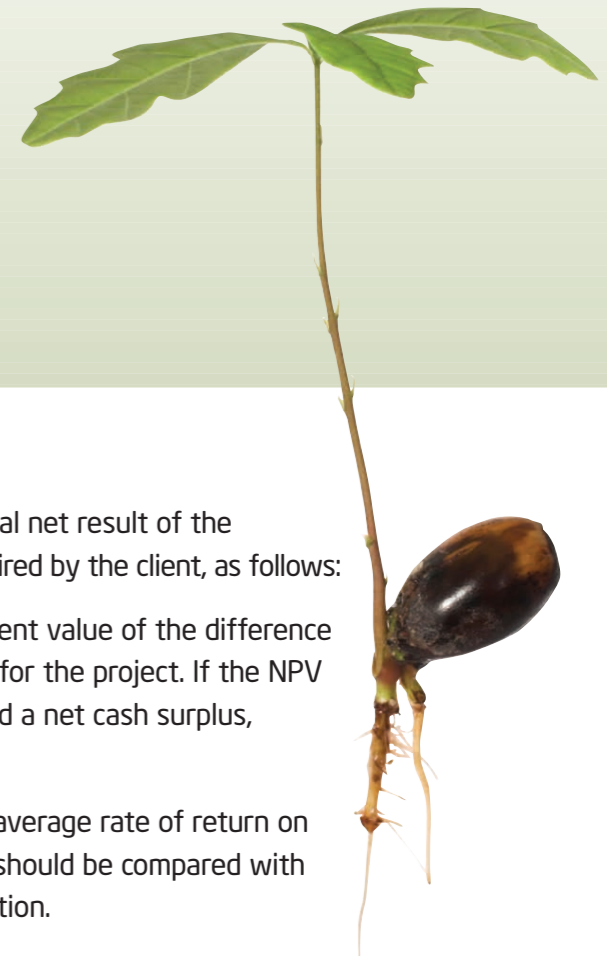
Where potential savings are indicated by the model, these may be sufficient to convince a potential client that the initial cost of a product is not the only factor worth considering when making an investment decision. The whole life cost of the selected product, in conjunction with other benefits, such as superior product quality and the reduced impact on the environment, may offer a less expensive overall benefit.

ACKNOWLEDGEMENT

FETA wishes to express its thanks to ebm-papst (UK) Ltd for developing the initial draft of this model and permitting its use in this general form.

DISCLAIMER

FETA accepts no responsibility for the output from this model or any decisions which may result from its use.



User Guide to Completion of the Worksheets

GENERAL

The user of this model need only complete those cells in the worksheets which are highlighted in yellow. The turquoise cells are calculated from these by macros and will be recalculated automatically as data in the yellow cells is changed. The worked example will permit users to familiarise themselves with the way in which the model works and can be adapted for use by their own organisation. References given below refer to the simplified worked example. A "blank" model is provided for use in the preparation of live data.

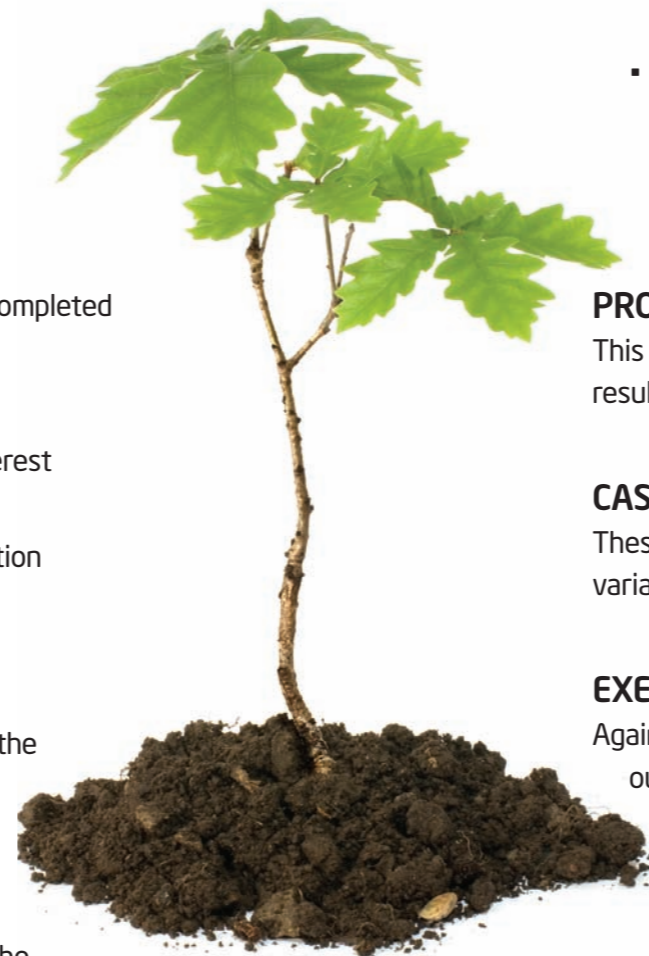
ASSUMPTIONS WORKSHEET

This worksheet sets out the various investment parameters specific to the organisation making the capital investment decision.

- Cell C4 –the organisation's required minimum return on an investment project, expressed as a percentage.
- Cells E9-N9 –the actual calendar years covering the life of the project.
- Cell E11 and Cells E11-N11 – the percentage of investment expenditure completed in each year.
- Cell C14 – the rate of Corporation Tax applicable to the organisation.
- Cell C14 –the cost of borrowing to finance the project or the return in interest if the same amount of money is saved.
- Cell C18 – this is the point in time in the project life at which the organisation requires a positive cashflow to be achieved.

CAPITAL INVESTMENT WORKSHEET

The capital costs of the recommended products are completed as a positive for the years in which the expenditure will take place. The comparable capital costs of the competing products are completed as a negative. In the example, the service lives of the various products are indicated by the corresponding depreciation periods. Replacement components for products with a 5 year life are thus shown at cells J38 and J43 in year 6 of the model. Cells E65-N65 give the total net additional capital costs or savings in each year of the life of the project.



NET REVENUE BENEFITS AND COSTS WORKSHEET

This worksheet analyses the revenue savings and costs of the comparable products over the life of the project.

- In the Revenue Saving part of the table at column E, the example for Product A gives an annual energy cost of £2000 per year for the recommended product, shown as a positive value. The corresponding energy cost of £5000 for the competing product is shown as a negative value. The resultant net saving is therefore a positive £3000, which is automatically carried to the Profit and Loss worksheet as a net benefit, for each year of the life of the project.
- The lower part of the table compares the periodic Revenue Costs of e.g. maintenance. Cells H40-H42, using the same sign convention as above, show a net saving of £3000 in maintenance costs in Year 4 of the project life. This saving is carried to the Profit and Loss worksheet, as above.

PROFIT AND LOSS WORKSHEET

This worksheet shows the net annual Profit and Loss impact over the life of the project resulting from the choice of products. It requires no input from the user.

CASHFLOW AND TAX AND DEPRECIATION WORKSHEETS

These two worksheets require no input from the user as the figures are derived from the variables used in the model.

EXECUTIVE SUMMARY

Again this worksheet requires no input from the user. It compares the calculated outcomes of the project with the investment parameters (hurdle rate) required by the investor.

FEET worked example

Click below to view the worked example in Excel:

The screenshot displays the 'Executive Summary' and 'Capital Investment' sections of the worked example. The 'Executive Summary' table includes the following data:

Project	Actual	Hurdle rate	Year 6	Year 7	Year 8	Year 9	Year 10
Net Present Value	€23,861	C					
IRR	102%	8%	3,000				3,000
Discounted Payback	3 years	3 years	347	(1,247)	(1,247)	(1,247)	(1,247)
Operating Profit/(Loss)	C 3,753		753	3,753	753	3,753	6,753
(First full year)			751	800	821	961	1,121
			913	(495)	229	(795)	(904)
			692	4,097	1,803	3,919	3,970
							6,081

The 'Capital Investment' section shows a total investment of €11,800 over 10 years, with a total of 5,500 depreciated over 3 years. It also lists capital costs for various products and a competitive product F.

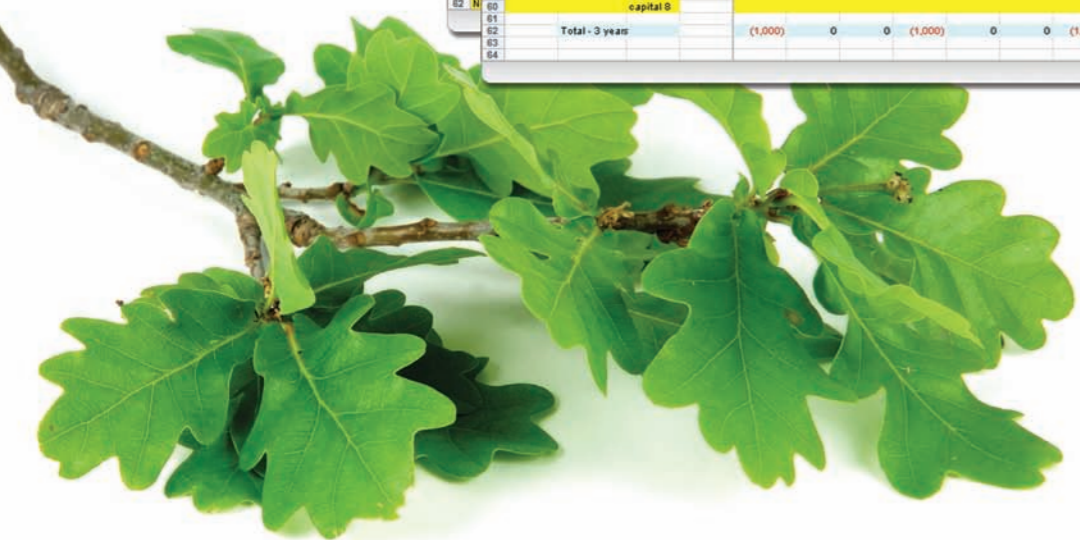
FEET blank version

Click below to view the blank example in Excel:

The screenshot displays the 'Executive Summary' and 'Capital Investment' sections of the blank example. The 'Executive Summary' table includes the following data:

Project	Actual	Hurdle rate	Year 6	Year 7	Year 8	Year 9	Year 10
Net Present Value	00	C					
IRR	n/a	0%	00%	100%	100%	100%	100%
Discounted Payback	11 years	0 years					
Operating Profit/(Loss)	#N/A						
(First full year)							

The 'Capital Investment' section shows a total investment of 00 over 10 years, with a total of 00 depreciated over 3 years. It also lists capital costs for various products and a competitive product F.





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