MES Implementation Budget and Payback

How-to guide: what the workbook does, how to use it and what every number means. mfgcalcs.com

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Budget an MES project line by line, list its benefits, and see investment, payback, ROI and NPV for the first phase and the full rollout.

For: Operations, IT/OT and plant managers, project managers and finance building or checking an MES business case.

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Quick start

1. On Setup, type your company, currency, the lines in the plant and in the first phase, the contingency, horizon and discount rate.
2. On Costs, list every budget line: per production line or once for the site, one-time or yearly, quantity and unit cost.
3. On Benefits, list every saving per line or for the site, with the share of each estimate you will count.
4. Open the Dashboard: investment, yearly net benefit, payback, ROI and NPV for the first phase and the full rollout.

What is in the workbook

Start Here	Read this first: what the workbook does and how to use it.
Setup	Your company and currency, the lines in the plant and the first phase, and the evaluation rules.
Costs	One row per budget line: per production line or for the site, one-time or yearly.
Benefits	One row per yearly benefit: per production line or for the site, with the share you count.
Dashboard	Investment, yearly net benefit, payback, ROI and NPV for the first phase and the full rollout.
Method	How every number is calculated, with assumptions, limits and sources.
Verify	Self-check: the workbook's formulas recomputed on fixed inputs against an independent reference.
About MFG Calcs	Everything MFG Calcs offers, free: calculators, templates, tariff tools, data and the Calkee AI helper.

What each number means

Quantity	How it is calculated	Units
Amount	Quantity x unit cost, per production line or once for the site.	currency

Quantity	How it is calculated	Units
First phase and full rollout	Per-line amounts x the lines in the first phase (or in the plant); site amounts once.	currency
One-time investment	Sum of one-time amounts x (1 + contingency).	currency
Yearly support cost	Sum of yearly amounts (no contingency).	currency/yr
Yearly benefit counted	Sum of yearly value x share counted, scaled like the costs.	currency/yr
Net yearly benefit and payback	Benefit counted - support; payback = investment / net yearly benefit (Never when it is not positive).	currency/yr, years
Net value and ROI over the horizon	Horizon x net yearly benefit - investment; ROI = net value / investment.	currency, %
Net present value	-investment + net yearly benefit x (1 - (1 + r)^-n) / r, with r the discount rate and n the horizon (x n when r is 0).	currency
Cumulative cash by year	-investment + year x net yearly benefit, undiscounted, years 0 to 10.	currency

Assumptions, limitations, sources and the self-check (the Verify sheet, which recomputes the workbook's formulas on fixed test inputs) are in the workbook. The last page shows the Dashboard with the example data for Kelderwick Components, a fictional business.

Free from MFG Calcs - keep this credit when you share it.

Engineering estimates for planning and improvement work. Verify the results against your own process, data and standards before you rely on them.

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Investment, yearly net benefit, payback, ROI and NPV for the first phase and the full rollout.

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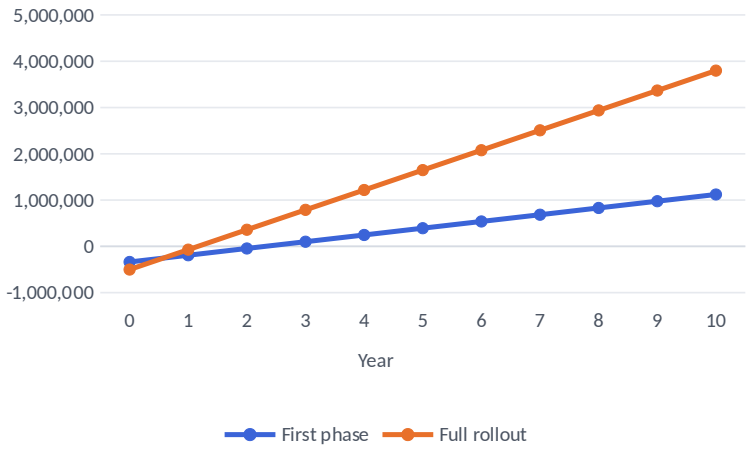
First phase: 3 of 8 lines. 5-year horizon, 10.0% discount rate, 10% contingency on one-time costs. Money in USD.

FIRST PHASE INVESTMENT (USD)	FIRST PHASE NET BENEFIT (USD/YR)	FIRST PHASE PAYBACK (YEARS)	FIRST PHASE NPV (USD)
338,360	**145,900**	**2.32**	**214,716**
One-time costs with contingency	Benefits counted - yearly support	Investment / net yearly benefit	Worth doing at or above 0
			On target

Cumulative cash by year



One-time cost by category

