

# BME financial modelling guidelines

The financial models BME creates aim to develop, forecast, optimize, and / or transfer business insights in a structured manner. These insights can be used to support the valuation of a project or business. However, on a more day-to-day basis, technical-economic simulation & optimization, can also be used to optimize performance, explore different business-models, identify optimal process parameters, estimate the viability of certain services or products, or to investigate & mitigate business risk. Whatever our Clients purpose may be, it is essential the result is **clear, reproducible, and verifiable**. BME develops generic models that are transparent and based on best practice principles BME recognizes. These principles are accommodated into a framework of model development and model structure guidelines described in this document. The guidelines are prepared for the development of financial models in Microsoft Excel.

## Model development guidelines

When developing business cases or financial models BME recommends the following practices:

- Keep it simple
- Avoid using long formulas and avoid circular references
- Separate inputs from calculations & results and do not hard code any inputs within formulas
- Develop everything in print ready format from the start & create models that are as generic as possible (i.e. make sure that if a key input is changed, everything else changes with it)
- Build in error checks while developing the model to continually check the (latest) work
- Include sensitivity & scenario analyses – To expose errors & maximize business case insights
- Insert summary charts & tables – Important to expose errors & maximize business case insights
- Do not be selfish: Give credit those that deliver inputs used in the model by listing their initials & date inputs are provided. This provides opportunity to revisit inputs with experts when necessary
- Use color codes – BME uses red for inputs, red inputs with a light blue background for key inputs, black for calculations, and dark blue for calculations that refer to cells on a different page
- Aside from providing a clear & structured overview, it is also important to make the overview look good using soft colors that are easy on the eyes. A financial model always sells something: Insights. When selling yourself, most people understand it pays to look your best for multiple reasons; Irrespective of if you are selling or investing in a 100M+ USD project, or investigating the influence of certain process parameters, the additional effort to structure, format, and clarify a model can have a particularly short payback time. It can also be a pre-requisite to being successful...

In addition to the above model development guidelines, guidelines with respect to the structure of financial models that BME develops are provided on the next page.



## Model structure guidelines

To provide a comprehensible financial models it is important use as little tabs as possible, but as many as are needed to appropriately structure work carried out. Generally speaking BME uses the following tabs:

- **Cover tab:** General project information, 1 page
- **Disclaimer tab:** Addresses confidentiality, copyright, forward-looking statements, 1 page
- **Notes tab:** Lists key assumptions, model conditions & exclusions, to do's, and other considerations
- **Summary tab:** Key results only, 1 page
- **Analysis tab:** Different 1 page graphs that provide visual confirmation of key model outcomes
- **Financial Statements tab:** Includes KPI's and financial statement outputs
- **Cash flow tab:** Forecast model cash flow outputs (real time)
- **Inputs – fixed tab:** All non-time based model inputs, categorized
- **Inputs – time based tab:** All time based model inputs, categorized
- **Calculations tab:** Main calculations to determine revenues, operational cost, and capital cost
- **Other calculation, engineering & design tabs:** The use of additional calculation tabs is minimized
- **Database tab:** Lookup tables that enable, for instance, generic equipment selection
- **Dropdown lists tab:** Dropdown lists provide users with generic drop down menu selection options in the inputs tab. This allows for quick and user friendly comparison between different scenarios

