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Thesis graduation assignment – Real Options in energy sector

Grontmij is a sustainable design and management consulting company with leading expertise in Transportation & Mobility, Water & Energy and Planning & Design.

General market conditions prove the need for advanced valuation methods as investors demand a profound insight in risk and return given the low liquid and high volatile markets, overleveraged balance sheets and fundamental changes in markets. Also debt providers, such as banks and institutional investors, are increasingly reluctant to commit long-term (project) finance agreements.

Grontmij Business Solutions offers a unique proposition for investors by combining high end engineering expertise with quantitative and corporate finance for risk assessment and valuation purposes. It enables Grontmij to position itself in a niche market by bridging the gap between Finance and Engineering. Business Solutions developed a project decision and valuation model based on the Real Options methodology. Real Option Analysis is of great added value to projects which are characterized by their size, complexity, large capital expenses and long-term horizon under severe uncertainty.

The objective of this thesis is to analyse the development opportunities of the Real Options valuation methodology for the energy production and energy infrastructure sector. The thesis should give direction and content to further development of the methodology in order to increase applicability and effectiveness.

The thesis should at least answer the following questions:

- What are the sector's main strategic developments and challenges?
- What is the current most applied method to assess investments?
- What are the main reasons for profits and losses on complex projects; how does ex ante project valuation relate to total project result?
- What valuation method would fit at best to overcome these estimation/valuation biases; how does Real Option valuation answer these improvements?

For additional information or inquiries on this topic please contact Coos van Buuren
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