MONGOLIA – A FINANCIAL MODEL FOR ENERGY PROJECT ASSESSMENTS

MONGOLIA	
FINANCING INSTITUTION	GIZ
PROJECT DURATION	05/2018 – 12/2018

GFA introduced a model to perform financial analyses of investment projects that is not only financial grade but also bankable. The assignment was part of GIZ's Energy Efficiency Project (ENEV 3+) to advise the Mongolian Energy Regulatory Commission (ERC) and the Ministry of Energy (MoE) on the transition of the Mongolian heat and power market towards a more competitive, efficient and effective market model.

Additionally, the model can handle all levels of a business case's complexity and allows for sensitivity analyses and comparison of up to 100 projects within one file. The model was developed for and adjusted to the needs of ERC and the MoE in Mongolia. It can be used as a 'shadow'-model which re-models a sponsor's proposition by using the assumptions of a business case from the original model to derive independent forecasted financial statements. This way, propositions are independently standardized. ERC can use it similarly in determining options for least cost energy supply ("LCOE") but can as well decide to turn the process around and make the model available as the standard to be filled-out by those seeking licenses for energy generation projects in Mongolia. This can potentially create a levelled ground among all stakeholders in energy supply in the country.

OBJECTIVES

The financial evaluation of energy projects usually relies on information provided by project developers or the project's investors. As such, the provided data very often reflect idiosyncratic assumptions – often favourably – in terms of the project's profitability and the resulting debt ratio. On the one hand, this calls for a unified and standardised assessment capability of evaluating projects based on common market assumptions and techniques. On the other hand, there is the need for a comparison among projects in the sense of a portfolio approach in order to derive adequate tariffs for each project and to justify the promotion of e.g. renewable energy sources instead of other conventional energy sources. The objective of the financial model therefore was to allow for a state-of-the-art evaluation of complex project proposals, the possibility of scenario analyses and the comparison of projects.

FINANCIAL MODEL

The tool allows for the appraisal of investment projects in terms of their financial grade, bankability and for the derivation of feed-in tariffs by estimating the Levelized Cost of Energy (LCOE). The excel-based model is applicable for all sorts of energy generation (incl. coal, gas, RE, etc.) usage and business plan concepts at every phase of project development and implementation.

DEBT SERVICE CAPACITY	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
NET PROFIT	1.0	2.0	2.2	2.4	2.6	2.8	3.0	3.2	3.5	3.7	4.0	4.1	4.1	4.1
INTEREST & PREFERRED DIVIDEND	1.5	2.8	2.6	2.3	2.0	1.8	1.5	1.2	0.9	0.5	0.2	0.0	0.0	0.0
DEPRECIATION	2.1	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2
CHANGE IN WORKING CAPITAL [PRE-DIVIDENDS]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CHANGE IN WORKING CAPITAL [POST-DIVIDENDS]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ADDITIONAL CASH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ANNUAL INVESTMENT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL CASHFLOW FOR DSCR CALCULATION	4.5	9.0	9.0	8.9	8.8	8.8	8.7	8.6	8.5	8.4	8.3	8.3	8.3	
	4.5	9.0	9.0	8.9	8.8	8.8	8.7	8.6	8.5	8.4	8.3	8.3	8.3	
TERM DEBT REPAYMENT	1.5	6.0	6.2	6.5	6.7	7.0	7.3	7.6	7.9	8.2	8.6	0.0	0.0	0.0
SHORT TERM DEBT REPAYMENT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SUB DEBT REPAYMENT / SHARE REDEMPTION	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
INTEREST TERM LOAN(S)	1.5	2.8	2.6	2.3	2.0	1.8	1.5	1.2	0.9	0.5	0.2	0.0	0.0	0.0
INTEREST SUBORDINATED LOAN(S) / PREF DIVIDEND	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
INTEREST SHORT TERM LOAN(S)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL DEBT SERVICE	2.9	8.8	8.8	8.8	8.8	8.8	8.8	8.8	8.8	8.8	8.8	0.0	0.0	0.0
DEBT SERVICE COVERAGE RATIO TERM DEBT	1.55	1.03	1.02	1.01	1.01	1.00	0.99	0.98	0.97	0.96	0.95			
DEBT SERVICE COVERAGE RATIO ALL DEBT	1.55	1.03	1.02	1.01	1.01	1.00	0.99	0.98	0.97	0.96	0.95			

GFA Consulting Group GmbH ▪ info@gfa-group.de
www.gfa-group.de