

Techno-economic analysis (TEA) of Tigyit coal gasification process in Myanmar

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Coal is a natural resource available in many countries worldwide. It is a carbon source used mainly for energy generation. Much attention has been paid to syngas ($H_2 + CO$) from coal gasification as clean energy. The objective of this study is to evaluate the economic feasibility of two entrained-bed gasification processes from Tigyit coal in Myanmar: Case 1: coal to liquid (CTL), Case 2: synthesis natural gas (SNG). A hierarchical 4-level economic potential approach was employed to perform the preliminary techno economic analysis (TEA) for the two processes. The economic potential of the two cases was compared at each level. It was found that Case 1 showed better economic potentials than Case 2 due to high economic potential and payback period (PBP), and low total capital investment (TCI) and total production cost (TPC). The minimum plant size showing over 30% of return on investment (ROI) was estimated to 400 t/d for the two cases.