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### EXERGY ANALYSIS OF A CO-GENERATION PLANT

#### ABSTRACT

Limitations of traditional first-law analysis, based upon thermodynamic performance of process unit coupled with mass and energy balances, are not a serious limitation when dealing with familiar systems. However, when dealing with more uncongenial, complex ones, it provides incomplete insight for such evaluation. These limitations came from the fact that first-law analysis does not indicate the sources or magnitudes of entropy production, which is, by the second law, essential criterion for scaling losses. An evaluation of plant performance will usually require a comparison of the thermodynamic performance of process units with available data from existing plants. Therefore, exergy analysis is more than useful, providing information about magnitudes of losses and their distribution throughout the system as well. Such analysis is very thankful at the level of process units but applied on higher system levels e.g. the comparison of overall plant performance (total system) or the performance of subsystems, represents the valuable method for indicating where research resources can be directed to best advantage.

#### KEYWORDS

[co-generation plant](#), [exergy](#), [efficiency](#), [losses](#)

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