



NETL UNIT PROCESS LIBRARY

Biomass gasification operations

LIFE CYCLE ANALYSIS (LCA) OF ENERGY TECHNOLOGY AND PATHWAYS

Life Cycle Analysis (LCA) is a comprehensive form of analysis that utilizes the principles of Life Cycle Assessment, Life Cycle Cost Analysis, and various other methods to evaluate the environmental, economic, and social attributes of energy systems ranging from the extraction of raw materials from the ground to the use of the energy carrier to perform work (commonly referred to as the “life cycle” of a product). Results are used to inform research at NETL and evaluate energy options from a National perspective.

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A unit process is the smallest building block in a life cycle model. Each unit process contains qualified input and output data including resource requirements and emissions. The NETL Unit Process Library is available to increase the public's understanding of the tools used to inform energy policy and guide energy research.

Each NETL unit process contains a DS and DF file. The DS file (Detailed Spreadsheet Documentation) is an Excel file that contains all the parameters, inputs, and outputs for a given system as well as background data, calculations, and quality scores. The DF file (Process Documentation File) is a PDF document that contains major assumptions and data sources that are the basis for each unit process.

Name/Date	Description	DS Link	DF Link
Biomass gasification operations 1/1/2022	Hydrogen production through biomass gasification	Excel	PDF