GOAL & SCOPE DEFINITION
Define reasons for study
Define intended applications
Define target audience
Define the function of tested product
Define the functional unit
Establish initial system boundaries
Extraction
Manufacturing
Transportation
Use
End of Life
Establish data categories
Data categories to be collected;
Quantification of energy inputs & outputs;
Assumptions about electricity production;
Inclusion of fugitive emissions
Establish criteria for initial inclusion of inputs & outputs
In accordance with established international protocols (ie. ISO 14040, 14044)
Define data quality requirements
robustness of data sources
INVENTORY
IMPACT ASSESSMENT
IMPROVEMENT ASSESSMENT
INTERPRETATION

GOAL & SCOPE DEFINITION
INVENTORY
Assumptions
Limitations of LCI
Identify sources of published literature
US LCI database
ISO 14040
Athena Institute
World Resources Institute
Journal of Industrial Ecology
International Journal of Life Cycle Assessment
Journal of Environmental Management
Prepare for data collection
Determine calculation procedures
Define allocation principles and procedures
Refine system boundaries
Collect and validate data
Sensitivity analysis
IMPACT ASSESSMENT
IMPROVEMENT ASSESSMENT
INTERPRETATION

GOAL & SCOPE DEFINITION
INVENTORY
IMPACT ASSESSMENT
Define impact categories
ISO 14042
an impact category is an environmental impact that can be measured in an LCA [ie. global warming potential (GWP)]
Method of characterization
determine the contribution of an inventory material to an impact category by assessing the behavior of that item on the environment, typically converted into CO2 equivalent
Method of normalization
calculate the impacts of each process relative to a reference, typically based on a world total
Method of weighting
determine a weighting factor for each impact category since they are not equally significant
Limitation of impact assessment
IMPROVEMENT ASSESSMENT
INTERPRETATION

GOAL & SCOPE DEFINITION
INVENTORY
IMPACT ASSESSMENT
IMPROVEMEET ASSESSMENT
Identify processes/products with greatest environmental impact
Identify processes that must be addressed in order to most effectively reduce environmental footprint
define criteria for selection (typically determined by weighting factors)
Invest in strategies to reduce environmental emissions, footprint
extend product life
evaluate substitute materials
enhance use/maintenance
reduce energy consumption
improve processes
improve waste management
INTERPRETATION

GOAL & SCOPE DEFINITION
INVENTORY
IMPACT ASSESSMENT
IMPROVEMENT ASSESSMENT
INTERPRETATION
Evaluate LCIA results of completeness
Sensitivity analysis
Evaluate consistency
Identify areas needing improvement
Identify issues regarding data/databases used
Conclusions and recommendations