

**Project: Potential Use of Renewable Diesel for Transportation in Texas and its Environmental Impacts. USDOT- LSU Tran-SET, Kommalapati, Du, and Alam, 08/21-01/23, \$60,000**

Compared to biodiesel, renewable diesel is a relatively new biofuel that can also be used for diesel vehicles. Some advantages of renewable diesel over biodiesel are no special requirements for the vehicle, cold startup, and fuel storage. There is no renewable diesel plant in Texas, and no action is being considered on renewable diesel application for Texas' transportation. The proposed project would address this critical gap and develop environmental life cycle and cost assessments to produce renewable diesel in Texas and its local applications in transportation. A novel and key component of this work would be the development of a decision-making tool that would help determine where the renewable diesel processing plant should be built. Life cycle emissions of renewable diesel used for short-haul and long-haul trucking in Texas will be evaluated with the GREET model, a life cycle assessment (LCA) tool. Life cycle cost analysis (LCCA) of renewable diesel production in Texas will also be carried out with the consideration for some uncertainties of seasonal bioresource availability, transportation, and fuel production. The decision-making tool developed in this study would help the biofuel industry to make the decision on the development of renewable diesel in Texas. Faculty working on this research will integrate LCA as an important focus area for all senior and graduate-level civil and environmental engineering courses. These students will also be introduced to the techniques of well-to-wheel analysis and production cost evaluation for renewable fuels.

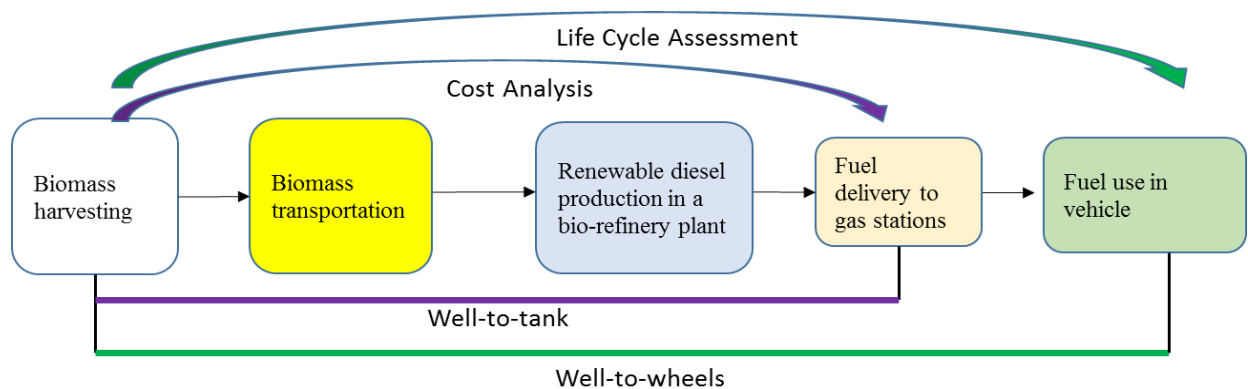


Figure: The system boundary and key stages of renewable diesel used in transportation