SAF Supply Chain Analysis in the Southeastern U.S.

T. Edward Yu & Burton C. English
Professor in Agricultural & Resource Economics
University of Tennessee
Regional Advantage for SAF

• Sizeable forest area (privately held; certified sustainable; RINs approved)
• An acting forest products industry
• Essential infrastructure in place (e.g., refineries, pipelines, etc.)
• Rapid population growth
• Significant end-user presence
• Motivated regional development
Regional Development Analysis

• Site Analysis
  • Identify facility siting and biomass availability
  • Cost and environmental indicators

• Workforce Analysis
  • Assess workforce availability and potentials

• Economic Impact Analysis
  • Project the net impact of SAF development on local economy and employment
Decision Model Portfolio

- A set of modeling tools has been built by a team largely funded by multiple government agencies. To date most of the tools have been used by government policy makers and the research community.
Applications of the Decision Model System

- Using switchgrass and pine residues as feedstock for SAF in the Southeast Region
- 13 biorefineries each with a capacity of 725k dt per year when using 50/50 switchgrass and pine
- Average feedstock cost: $61.48 per dry short ton
Nashville SAF from Pennycress

- Pennycress was produced as winter cover crop
- Three crush facilities are required & are located at
  - Union City, TN
  - Clarksville, TN
  - Huntington, TN
- Total Feedstock Cost Delivered to Crush Facilities $115.7 million
Stakeholder’s Meeting

• Working with the Center for Natural Capital to conduct stakeholder’s meetings for the Central Appalachian region.

• Monthly meetings were held from Dec/2020 through 2021. In January 2022, more than 60 participants joined the first stakeholder’s virtual meeting focused on opportunities in Central Appalachia.

• In April 2022, the Building Awareness of Sustainable Aviation Fuel workshop sponsored by ASCENT in collaboration with CAAFI was held in Knoxville focused on opportunities in Tennessee.

• Planning to have the next virtual Central Appalachian regional meeting later this summer.
Thanks!

Questions or Comments?!
T. Edward Yu

tyu1@utk.edu