

Round Table Discussion

Thermo-chemical Conversion - Moderator: *Janan Balaban, Associate Director, FESC*

Waste to Energy - Moderator: *John N. Kuhn, Assistant Professor, Chemical & Biomedical Engineering, USF*

Participants

- **Total of 16 participants**
 - **9 Graduate Students (7 UF, 2 USF)**
 - **3 Faculty (USF, Florida Polytechnic, Zamorano)**
 - **3 Industry: Trash to Cash, Siemens, Sigarca**
 - **1 FESC**

Challenges

- Availability of sustainable feedstocks
- Limitations due to decentralized facilities (ie, distance to transport feedstocks)
- Partially finished products, training of farmers for initial treating of energy crops to prevent premature decomposition
- Feedstock heterogeneity (food waste, MSW, waste water, sludge, agricultural waste, etc) - flexibility of technology to handle various and varying feedstocks
- Time scales of processes
- Economy of scale

Recommendations for SUS Proposal

- Waste feedstocks - type, amount, characterization, and inventory needed
- Feedstock homogeneity
 - ❑ Torrefaction of biomass to increase shelf life and
 - ❑ Pre-processing waste for consistency
- Life cycle inventory / analysis
- Distributed systems for small farmers
- Include needs of community
- Selection of targeted product (ie, diesel, jet fuel, methanol, etc.)

Proposal Ideas

- Energy and mass integration to balance the economy-of-scale challenge
- Conversion process sensitivity to feedstock heterogeneity
- Decentralized biomass pre-treatment technologies to overcome distance & time limitations.

Benefits to the state of FL

- Diversification of farming /economic development
- Job creation in (bio)chemical processing
- Increased energy independence