CAAFI Biennial General Meeting 2016

R&D Team Breakout Session – Report Out

Walter E. Washington Convention Center Washington, D.C.

R&D Team Tri-Leads:

CAAFI® COMMERCIAL AVIATION ALTERNATIVE FUELS INITIATIVE Gurhan Andac (GE) Stephen Kramer (P&W) Michael Lakeman (Boeing)



R&D Team: What we do

* Identifying technology gaps

- * Broad range of participants/experts
- * White Paper solicitation/review

* Aligning research focus/funding for future fuel development

- Coordinating efforts with FAA, DOE, DOD, and OEMs to maximize impact
- Ensuring availability of research findings

* Developing Tools and communication frameworks

- * Feedstock Readiness Level (FSRL)
- * Path to Fuel Readiness Guide
- * Fuel Readiness Level (FRL) Exit Criteria
- * Roadmap Tool
- * SOAP-Jet Webinar Series



Breakout Breakout

- Sought input from participants on key R+D challenges/opportunities across the supply chain
- * Sought input on how CAAFI R+D team can be effective in providing value
- * Broke into two groups:
 - * Conversion Technology and Cross-Cutting Analysis
 - * Feedstocks and Supply Chain Logistics



Findings – Conversion and Cross-Cutting

- * Ten years in, 1st round of technology success.
 - * What is the future? What's the NextGen?
- * CAAFI to help community focus on outcomes, not processes.
 - * Advocate programs/policies that are not prescriptive.
 - * Help define challenging, but flexible outcomes environmental and fuel performance
- * CAAFI to promote evaluative tools to explore options/ conversion pathways.
 - * More "physics-based" process agnostic
 - Capable of prioritize prospects of different technologies and likelihood of producing jet fuel



Findings – Conversion and Cross-Cutting

* CAAFI to continue to advocate SAJF supportive policies – "no such thing as a free market"

- * Policies guide types of research
- * Evaluative tools are needed to guide advocacy
- * Policies should not be locked into a certain type or process
- * Evaluative tools can help set outcome goals
- * Policies should be informed by 'systems thinking'



Findings – Feedstocks and Logistics

* CAAFI R&D Team to advocate supply chain adaptations for fuel

- Food practices (high density commodities) don't necessarily fit energy feedstock practices (low density)
- Feedstock consolidation processes
- * Scale out vs scale up / modularity
- * Coordinated supply chain management
- * CAAFI to advocate continued feedstock identification
 - * Initial efforts from USDA/universities require continued funding
 - Continued outreach to farmers
 - * NextGen Feedstocks



R+D Team – Additional Thoughts

* Expand CAAFI networking

- * CAAFI and the alt fuels community outreach
- * Use communication tools more effectively
 - * CAAFI Communications Manager
 - * Website tools/resources
 - * SOAP-Jet
 - * Meetings
 - * Social Media
 - * Etc.
- R&D start dialog with emerging companies/technologies





FUELING SOLUTIONS FOR SECURE & SUSTAINABLE AVIATION