CAAFI Environment Team Report Out

October 27, 2016

Team Co-Leads: Jim Hileman (FAA), Nancy Young (A4A)

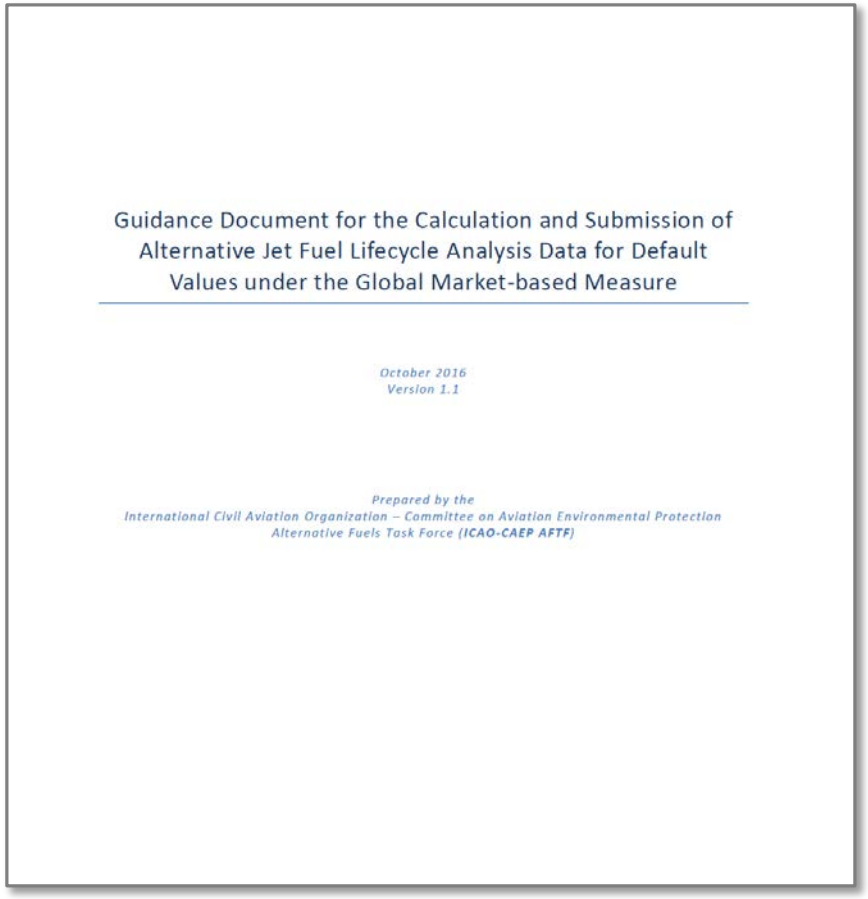
Unconference Sessions and Breakout

* Evaluating Sustainability
* Additional Resource Streams
* California Air Resources Board (CARB) Update
* ICAO Market Based Measure Greenhouse Gas (GHG) Life Cycle Assessment (LCA) Methodology
* Next Steps

Guidance Document for Calculation of LCA Data for Default Values under ICAO GMBM

Scope

- Guidance document is only applicable to biomass and waste-derived "drop-in" jet fuels
- Non-petroleum fossil fuel-derived AJF (e.g. GTL, CTL) are explicitly excluded from guidance document
- Land use change (LUC) emissions are captured using a separate methodology, not covered in guidance document



Guidance Document for the Calculation and Submission of Alternative Jet Fuel Lifecycle Analysis Data for Default Values under the Global Market-based Measure

October 2016
Version 1.1

Prepared by the
International Civil Aviation Organization – Committee on Aviation Environmental Protection
*Alternative Fuels Task Force (**ICAO-CAEP AFTF**)*

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LCA Data Request for GMBM via "Guidance Document"

AJF pathways will be assigned default LCA values under GMBM

LCA studies or values can be submitted to be considered for inclusion under GMBM to aid this process. These must:

* use the methodology described
* use FT, HEFA, SIP/DSHC, or iBuOH-to-jet conversion tech., and ASTM certified
* be transparent and replicable

Requirements for LCA studies or values submitted are outlined in a "Guidance Document", to be circulated via email

Data can be submitted to Core LCA TG Co-Leads:

* Prof. Robert Malina - robert.malina@uhasselt.be
* Ms. María de la Rica Jiménez - mmrica@senasa.es

Note that submission of data is for information purposes only, and does not constitute the discussion or decision-making process of AFTF.

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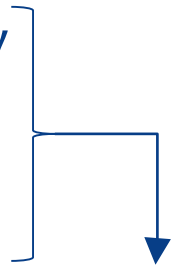
Next Steps…

* Environment team has considered:
  * Life cycle assessment
  * Environmental sustainability
  * Combustion emissions from AJF use
* Want to expand the "Environment Team" to be the "Sustainability Team" covering:
  * Environmental sustainability
  * Social sustainability
  * Economic sustainability



Want to utilize knowledge gained from Supply Chain Analysis, Life Cycle Assessment (LCA), Techno Economic Assessment (TEA), Fuel Production Assessment, etc. to provide a holistic view of sustainability.

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