

Program

CRC WORKSHOP ON LIFE CYCLE ANALYSIS OF TRANSPORTATION FUELS

Argonne National Laboratory

Argonne, IL

October 15-17, 2013



WORKSHOP SPONSORS

API	Renewable Fuels Association
Argonne National Laboratory	South Coast Air Quality Management District
CONCAWE	US Department of Agriculture
Canadian Fuels Association	US Department of Energy
National Biodiesel Board	University of Michigan Energy Institute

WORKSHOP ORGANIZERS

Jim Anderson	Ford Motor Company	Chul Kim	Ford Motor Company
Vincent Camobreco	US Environmental Protection Agency	Robert Larson	US Environmental Protection Agency
Geoff Cooper	Renewable Fuels Association	Derek McCormack	Natural Resources Canada
John Courtis	California Air Resources Board	Heather Maclean	University of Toronto
John DeCicco	University of Michigan	Luisa Marelli	Joint Research Center,
James Duffield	US Department of Agriculture		Institute for Environment and Sustainability
Marvin Duncan	US Department of Agriculture	Jeremy I. Martin	Union of Concerned Scientists
Jeff Farenback-Brateman	ExxonMobil	Mani Natarajan	Marathon Petroleum Company LP
Phil Heirigs	Chevron	Kenneth Rose	CONCAWE
Aaron Katzenstein	South Coast AQMD	Don Scott	National Biodiesel Board
David Lax	API	Michael Wang	Argonne National Laboratory

Specific Workshop Goals

- Outline technical needs arising out of policy actions and ability of LCA analysis to meet those needs.
- Identify research results and activities that have come to light in the past two years that have helped to close data gaps previously outlined as outstanding issues.
- Identify data gaps, areas of uncertainties, validation/verification, model transparency, and data quality issues.
- Establish priorities for directed research to narrow knowledge gaps and gather experts' opinions on where scarce research dollars would best be spent.

Tuesday, October 15, 2013

Argonne House

5:00 - 6:00 PM

Registration

Argonne House

6:00 - 7:00 PM

Welcome Reception

Cocktails and Hors d'Oeuvres at Argonne House

Wednesday, October 16, 2013

Auditorium

7:00 - 8:00 AM

Registration

Continental Breakfast in Gallery

8:00 AM

Welcome: Phil Heirigs (Chevron)

Opening

Background of CRC LCA Workshops

8:05 AM

Chairpersons: Brent Bailey (CRC) and Phil Heirigs (Chevron)

The objective of this session is to bring participants up-to-speed on where we have been and how we have gotten to the 3rd CRC LCA workshop. Will also include some background information on CRC as many of the workshop attendees may not be aware of CRC's history, membership, and charter.

8:05 AM

CRC Background

Brent Bailey

CRC

8:15 AM

Background on the CRC LCA Workshops

Phil Heirigs

Chevron

Session 1

Regulatory Environment/New Policies Driving LCA Pathways and Methodologies

8:30 AM

Chairpersons: Jim Duffield (USDA), Bob Larson (US EPA), David Lax (API), Mani Natarajan (Marathon Petroleum Co.)

This session will examine the effect of recent and proposed regulations on LCA modeling as well as issues for future action. Speakers will provide insights into changes made to LCA over the last few years in order to evaluate additional pathways and update the models to reflect the current regulatory environment. The session will focus on LCAs conducted for EPA, CARB, Canada, and the EU-27.

8:35 AM

US EPA Update on RFS2 Life Cycle Assessment
(20 min + 5 Q&A)

Bob Larson

US EPA

9:00 AM

California LCFS (20 min + 5 Q&A)

John Courtis

CARB

9:25 AM

British Columbia Low Carbon Fuel Requirements
(20 min + 5 Q&A)

Michael Rensing

British Columbia, Ministry of Energy and Mines

9:50 AM

Updates in EU-27 Regulation on Biofuels
(20 min + 5 Q&A)

Luisa Marelli

JRC

10:15 AM

General Discussion (15 min)

10:30 AM - 10:50 AM BREAK

Session 2

LCA Methodology Development, Gaps and Uncertainties

10:50 AM

Chairpersons: John DeCicco (University of Michigan), Chul Kim (Ford), Ken Rose (CONCAWE), Geoff Cooper (RFA)

The objectives of this session are to identify: the current status of LCA models and structure, key differences among models and model output, and major gaps and uncertainties in current assessments. In addition, the status of integrated assessment models for LCA will be addressed as will issues related to the selection of baselines.

10:55 AM

Model Differences and Variability
(20 min + 5 Q&A)

Don O'Connor

(S&T)²

11:20 AM

LCA and Uncertainty: Implications for Decision
Making (20 min + 5 Q&A)

Mike Griffin

Carnegie Mellon University

11:45 AM

European LCA Methodology Development,
Including ILUC Effects (20 min + 5 Q&A)

Bo Weidema

2.0 LCA Consultants

12:10 PM - 1:30 PM LUNCH in Gallery			
1:30 PM	Using Geographically Broad Commodity and Land-Use Modeling to Enhance Life Cycle Assessment of Greenhouse Emissions from US Biofuel Policy (20 min + 5 Q&A)	Brian Murray	Duke University
1:55 PM	Critical Issues in the Updated GREET Version Affecting Transportation Fuel LCA Results (20 min + 5 Q&A)	Michael Wang	Argonne National Laboratory
2:20 PM	General Discussion (15 min)		
Session 3 2:35 PM	Advances in LCA of Biofuels (Part 1) <i>Chairpersons: Jim Anderson (Ford), Jeff Farenback-Brateman (ExxonMobil), Luisa Marelli (JRC), Mani Natarajan (Marathon Petroleum Co.), Don Scott (NBB)</i> <i>This session will examine recent efforts to improve and revise land use change modeling, including the application of improved data sets and changes to model structure. In addition to the agro-economic models used in these assessments, updates to carbon and N2O emission factors will be presented and discussed.</i>		
2:40 PM	Recent Updates to GTAP (20 min + 5 Q&A)	Wally Tyner	Purdue
3:05 PM	Dynamics of the ILUC Effects of Biofuel Policy (20 min + 5 Q&A)	Debo Oladosu	ORNL
3:30 PM	Estimating Land Use Changes of EU Biofuel Policies with the MIRAGE Biof Model: Recent Sensitivity Analysis and Extension to the Second Generation Pathways (20 min + 5 Q&A)	David Laborde	IFPRI
3:55 - 4:15 PM	BREAK		
4:15 PM	Open Forum Discussion <i>Chairpersons: John DeCicco (University of Michigan), Jeremy Martin (UCS), Ken Rose (CONCAWE)</i> Discussion (45 min) Moderator: Kent Hoekman DRI <i>This session will provide a moderated discussion of the high-priority questions and issues related to the workshop and identified by participants as warranting additional discussion.</i>		
6:00 PM	Reception in Argonne House		
6:30 PM	Dinner in Argonne House		

Thursday, October 17, 2013

Auditorium

7:30 - 8:00 AM

Registration

Continental Breakfast in Gallery

Session 3	Advances in LCA of Biofuels (Part 2)
8:00 AM	<i>Chairpersons: Jim Anderson (Ford), Jeff Farenback-Brateman (ExxonMobil), Luisa Marelli (JRC), Mani Natarajan (Marathon Petroleum), Don Scott (NBB)</i>
	<i>This session will examine recent efforts to improve and revise land use change modeling, including the application of improved data sets and changes to model structure. In addition to the agro-economic models used in these assessments, updates to carbon and N₂O emission factors will be presented and discussed.</i>

8:00 AM	Opportunities and Limitations of Model Collaboration for the Assessment of Biomass Supplies and Impacts (20 min + 5 Q&A)	Sonia Yeh	UC-Davis
8:25 AM	Report on CRC E-88-3: Review and Comparison of Agro-Economic Models Used for ILUC Estimates (20 min + 5 Q&A)	Stefan Unnasch	Life Cycle Associates
8:50 AM	Status of Efforts to Develop an International Standard on "Sustainability Criteria for Bioenergy" (20 min + 5 Q&A)	Keith Kline	ORNL
9:15 AM	Recent Updates to CO₂ Emissions Modeling for ILUC Analysis (20 min + 5 Q&A)	Richard Plevin	UC-Davis

9:40 - 10:00 AM	BREAK
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10:00 AM	Soil N₂O Emissions: Basic Research and Data Collection) (20 min + 5 Q&A)	Jerry Hatfield	USDA
10:25 AM	Exploiting RC's Global Nitrous Oxide Calculator for Biofuels LCA (20 min + 5 Q&A)	Robert Edwards	JRC
10:50 AM	General Discussion (15 min)		

11:05 AM	Open Forum Discussion
	<i>Chairpersons: John DeCicco (University of Michigan), Jeremy Martin (UCS), Ken Rose (CONCAWE)</i>
	Discussion (45 min) Moderator: Kent Hoekman DRI
	<i>This session will provide a moderated discussion of the high-priority questions and issues related to the workshop and identified by participants as warranting additional discussion.</i>

11:50 AM - 1:00 PM	LUNCH in Gallery
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Session 4	Advances in LCA of Petroleum/Alternatives		
1:00 PM	<i>Chairpersons: Phil Heirigs (Chevron), David Lax (API), Heather MacLean (University of Toronto), Michael Wang (Argonne)</i> <i>This session will explore the current state of knowledge and the most critical data needs to improve LCA estimates for petroleum-based fuels and non-biofuel alternatives. Topics to be discussed in this session include improvements in LCA of conventional petroleum, recent efforts to improve LCA estimates of oil sands extraction, issues related to natural gas extraction and implications for LCA, and an EU perspective on vehicle technology improvements.</i>		
1:05 PM	Greenhouse Gas Emissions from Oil Production - Insights from an Open-Source Modeling Effort (20 min + 5 Q&A)	Adam Brandt	Stanford University
1:35 PM	Advances in Oil Sands LCA (20 min + 5 Q&A)	Joule Bergerson	University of Calgary
2:05 PM	Atmospheric Emissions from Natural Gas Extraction and Implications for Life Cycle Assessments (20 min + 5 Q&A)	David Allen	University of Texas at Austin
2:35 PM	JEC WTW Version 4: EU Perspective on Advances in Vehicle Technology (20 min + 5 Q&A)	Heiko Maas	Ford Motor Company
3:05 PM	General Discussion (15 min)		
3:20 PM	End of Workshop		

Notes

