

FINAL Minutes of August 10, 2023 Ethylene Producers' Environmental and Sustainability Sub-Committee Meeting

Following are the minutes of the August 10, 2023 Ethylene Producers' Environmental and Sustainability Sub-Committee Meeting, held via Zoom.

Present:

Troy Boley, Spectrum Environmental Solutions, LLC
Ralph Crivello, LyondellBassell
Jacob Hilbrich, Chevron Phillips
James Kendall, ExxonMobil Engineering and Technology Company
Dan Lutz, Ineos
Robert Sams, Shin-Tech
Mark Ulrich, Linde Engineering Americas

Absent:

Shelby Browning, Eastman Chemical
Ted Heron, The Catalyst Group
Allyson Ledet, NOVA Chemicals
Patti Long, Eastman
Isa Mbaraka, Dow
Andrés Muñoz Gandarillas, Neste
Arijit Pakrasi, Edge Engineering and Science
Nicole Roper, Shell Oil Products Company
Gerardo Ruiz-Mercado, US EPA (AIChE Environmental Division)
Jeffrey Seay, University of Kentucky (AIChE Environmental Division)
Dick Siegel, R&B Consulting Services (AIChE Environmental Division)
David Smalley, BASF
Jason Trembly, Ohio University (AIChE Environmental Division)

Anti-Trust Statement

The meeting began at 9:05 am with James Kendall reading the Ethylene Producers' Committee (EPC) anti-trust statement:

No activity of the committee shall involve the exchange, collection, or dissemination of information among competitors for the purpose of bringing about or attempting to bring about an understanding or agreement, written or oral, formal or informal, express or implied, among competitors, with regard to costs, prices, pricing methods, terms or conditions of sale, distribution, production quotas or other limitations on either the timing or volume of production or sales, or allocation of territories or customers.

Sub-Committee Membership

Robert Sams from Shin-Tech has joined the subcommittee. Robert introduced himself to the subcommittee with a brief review of his background.

Agenda

The meeting agenda was published in advance and is included below:

1. Reading of Anti-Trust Statement [9:02 AM]

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2. Chair/Co-Chair for 2024 session [9:04 AM]
 - James Kendall (chair 2024) and Isa Mbaraka (co-chair 2024, chair 2025)
3. Review of Jun 15, 2023 meeting action items [9:10 AM]
4. Operations Subcommittee proposal for a joint session on flare operation under EMACT – request for co-chair [9:20 AM]
5. Discussion of Potential Topics for 2024 Environmental and Sustainability Session [9:25 AM]
 - Inflation Reduction Act: Navigating Murky Waters of Compliance and Incentives
 - ALG paper on accuracy of GHG emissions data reporting
 - Fenceline monitoring in context of multiple companies operating within same large fenceline
6. Date for Potential Face to Face [9:45 AM]
 - Oct 12 or Dec 7 - TBD
7. Review of Action Items [9:50 AM]
8. Important Date Reminders
 - Jun 20, 2023 – Session and Session Charis Due in Confex
 - Jun 22, 2023 – Call for abstracts opens
 - Oct 25, 2023 – Call for abstracts closes
 - Dec, 2023 – Papers accepted or rejected
 - Jan, 2024 – Program goes live
 - Mar, 2024 – Paper submission closes
 - Mar 24-28, 2024 – Spring Meeting – New Orleans, LA
9. Adjourn [10:00 AM]

Chair/Co-Chair for the 2024 Session

The subcommittee reconfirmed the plan for James Kendall to chair the 2024 session with Isa Mbaraka serving as co-chair, planning for Isa to chair the 2025 session.

Review of the Jun 15, 2023 meeting action items

Action items from the June 15 meeting were reviewed in detail.

Mark Ulrich shared that Adam Greene, Carbon Policy Advisor, Worley was enthusiastic on presenting a paper and had committed to follow-up with Shawn Daray, Associate, Jones Walker LLP on generating an abstract. To facilitate abstract submission Mark requested guidance on submissions that could be shared. After the June 15 session some guidance was received from the EPC main committee. James Kendall took an action to send guidance to the entire EPC subcommittee, which Mark would then forward to Adam Greene.

The subcommittee Scope Statement was read aloud and all members present supported the revised wording without additional comment.

While Michael Smith is currently acting as our subcommittee's representative on the Main Committee, ideally a member of the sub-committee would also be on the main committee. Depending on retirement plans, Mark Ulrich may move into that role in 2024.

On the topic of redundancy in papers in EPC and AIChE programming, the sub-committee suggested that authors (and programming chairs) be conscious of a specific message for the ethylene industry vs. industry at large. If possible, broad topics should be tailored to the ethylene industry. If a topic is

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generic enough to present at AIChE in general, consider pushing that paper out to AIChE programming.

James Kendall and Andrés Muñoz Gandarillas have open action items on identifying internal papers that may be presented at EPC next year.

Post Meeting Note: Andrés confirmed that Neste and Linde plan to submit an abstract for consideration. The leading author from Linde will be Dr. Torben Hoefel.

Ralph Crivello updated the subcommittee on a paper that LyondellBassell may submit for this cycle. The potential paper might present commercial work done on hydrogen firing with regard to emissions sensitivity. The team discussed and agreed the paper would be a good fit for sub-committee's session, but if the technology subcommittee has an entire session on H2 firing the right location for the paper in EPC programming may shift.

Discussion of Potential Topics for 2024 Environmental and Sustainability Session

The subcommittee discussed papers that had been solicited.

The ALG paper on GHG emissions data reporting was discussed. James Kendall shared feedback from Ev Ashworth that detailed discussion on European rule application (vs. ALG's broader experience with regulations in California and the US) would require bringing in a co-author with that expertise. Ev had suggested a paper on the pitfalls they have seen. The sub-committee discussed and agreed that the paper will provide significant value independent of any particular regulatory framework and that ALG should proceed with their planned submission.

Fenceline monitoring was also discussed. Troy Boley suggested that the proposed rule has requirements worthy of its own 20 minute paper. A second paper could then be presented on how the proposed rule could impact the specific situation where multiple companies are operating within the same larger fenceline. Troy believed his company may be able to present a paper with actual data (anonymized). The team discussed and agreed to seek two separate abstracts (1) Tricord on regulatory impact within the proposed rule and (2) from Spectrum on application with near neighbors. Dan Lutz shared that the proposed date for finalizing the proposed rule is Mar 29, 2024. The EPC conference is the week before this date. The sub-committee believed this two-paper approach was the most helpful offering we could provide to EPC.

Further discussion of "Inflation Reduction Act: Navigating Murky Waters of Compliance and Incentives" was not discussed further awaiting an abstract.

The potential paper on H2 firing from LyondellBassell was not discussed further.

Due to technical challenges, James Kendall dropped off the call for 10 minutes before rejoining by audio only.

Combined Operations Subcommittee Session on Flare Operation

James Kendall shared that Dan Euhus from the Operations Subcommittee clarified that the ask from our sub-committee is a co-chair for the session.

James Kendall asked if anyone on the subcommittee would like to volunteer to co-chair the session. None present volunteered. James took an action to send a request to the entire subcommittee.

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Date for Potential Face to Face

Oct 12 or Dec 7 are the lead cases. Subcommittee members that have not yet responded are requested to email James Kendall any preferences.

Post Meeting Note: October 10 was selected as the date for F2F discussion.

Review of Action Items

James Kendall: Send the entire subcommittee guidance on abstract submissions. **DONE**

Mark Ulrich: After receiving guidance on abstract submissions from James Kendall reconnect with Adam Greene and provide this guidance copying both James Kendall and Isa Mbaraka as session chair and co-chair. **DONE**

James Kendall: Investigate if ExxonMobil could present a paper on developing projects. **DONE**

Andrés Muñoz Gandarillas: Investigate if Neste could present a paper on developing project. **DONE**

Ralph Crivello: Continue to progress an abstract for the potential LyondellBassell on H2 firing.

Troy Boley: Contact Joe at Tricord about submitting an abstract on fenceline monitoring under the new proposed rule.

James Kendall: Send a request to the subcommittee for a co-chair volunteer for the proposed combined session with the operations subcommittee on flare operation. **DONE**

All Subcommittee: Subcommittee members that have not yet responded are requested to email James Kendall any preferences. **DONE**

James Kendall: Select a date for the F2F and update the meeting notices for a lunch meeting. **DONE**

Important Date Reminders

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Adjourn

The meeting was adjourned at 9:58 am.