

FINAL Minutes of October 14, 2021 Ethylene Producers' Environmental Sub-Committee Meeting
(October 14, 2021, Rev. 0)

Following are the minutes of the October 14, 2021 Ethylene Producers' Environmental Sub-Committee Meeting, held via MS Teams with Walter Postula, Shell Global Solutions (US) Inc., as host.

Present: Rick Beleutz, LyondellBasell
Ahmad Hamad, Siemens-Energy
Jacob Hilbrich, Chevron Phillips
Brandon Lithgoe, Ashworth Leininger Group
Andrés Muñoz Gandarillas, Neste
Jennifer Port, ExxonMobil Chemicals
Walter Postula, Shell Global Solutions (US) Inc.
Gerardo Ruiz-Mercado, US EPA (AIChE Environmental Division)
Mark Ulrich, Linde Engineering Americas
Gary Wojnowski, BASF

Absent: Troy Boley, Spectrum Environmental Solutions, LLC
Benjamin Burns, LyondellBasell?
Ted Heron, The Catalyst Group
Patti Long, Eastman
Dan Lutz, Ineos
Arijit Pakrasi, Edge Engineering and Science
Mark Schmidt, Dow
Jeffrey Seay, University of Kentucky (AIChE Environmental Division)
Edward Soliz Jr., LyondellBasell
Jason Trembly, Ohio University (AIChE Environmental Division)

The meeting began at 9:03am with Walter Postula 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.

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

- 1) Reading of Anti-Trust Statement [9:02 AM]
- 2) Follow-up on Action Items (see Minutes of August 12th meeting) [9:05 AM]
- 3) Discussion of Potential Topics (List from 8/12 Minutes below) for 2021 Environmental Session [9:05 AM]
 - CO₂ reduction by existing (through 2035) versus emerging (through 2050) technologies [Rick]
 - Water treatment, reuse/recycling [Gerardo]
 - CO₂ industrial engineering and R&D approaches [Gerardo]
 - Carbon capture (design/optimization) [Gerardo]
 - Plastics recycle, how to close the loop [Gerardo, and is willing to organize]
 - Technology and Sustainability [Themes suggested by Andrés]
 - Decarbonization [Mark S., also AIChE keynote themes]

- Compliance with waste-water discharge (microplastics) [Dan]
 - Topics from Academia? [Andrés, e.g. Ghent University]
- 4) Date for Potential Face to Face [9:45 AM]
 - 5) Review of Action Items [9:50 AM]
 - 6) Important Date Reminders
 - June 28, 2021 – Call for abstracts opens
 - November 1, 2021 – Call for abstracts closes
 - December 6, 2021 – Papers accepted or rejected
 - January 10, 2022 – Draft Program for Review
 - January 24, 2022 – Final Acceptance/Rejection letters
 - March ??, 2022 – Paper submission closes
 - April 10-14, 2022 – Spring Meeting – San Antonio, TX
 - 7) Adjourn [10:00 AM]

Follow-up on Action Items: Action items from August 12th meeting and follow-up are listed below (those completed as noted in the August 12th minutes are not included).

- **Andrés:** Reach out to ISCC and/or RSB contacts about presenting on certification process *Andres has discussed with RSB and they are interested in presenting. Has not received input from ISCC. Jake mentioned that he had some ISCC contacts that could be pursued. Jennifer suggested it may be worthwhile to hear from both ISCC and RSB as they serve (at the moment) different markets.*
- **Andrés:** (Re)Connect with Ghent on their willingness to present *Ghent has indicated interest but nothing specific.*
- **Rick:** Talk with Steve Smith about EMACT update (basis list from All4)
- **Rick:** Contact Eric Swisher (All4) about presenting *Both Steve Smith and Eric Swisher are willing to present an update to EMACT/flare monitoring. The approach could be a “double length” presentation.*
- **Producers:** Check internally on appetite to present on experience with processing pyrolysis oils or Bio-based feeds (includes **Rick, Jennifer, Jacob, Mark S., Walter, Dan, and Gary**) *Walter indicated that Shell agreed to develop abstract and present on their approach to the plastic circularity value chain. Jake stated that Chevron Phillips is interested as well, though more specifics on what they would present are yet to be determined. Jennifer feedback that ExxonMobil is not ready to present on this topic.*

Discussion of Potential Topics for 2021 Environmental Session: In addition to the more firmed up paper/presentation topics mentioned in the action item follow-up, the following were proposed (and thought to have some traction in finding a author/presenter): [1] Regulatory landscape for new feeds (i.e. maintaining processing of pyrolysis oil as a non-waste handling activity); [2] Green house gas inventory/quantification; and [3] Specific company experience with processing renewable feedstock (CO₂ reduction perspective).

There was still support for pursuing both a joint session with Technology and a stand-alone Environmental session. With the current confirmed and semi-confirmed papers it could be a stretch. Discussion around desire/need for joint session will be taken up at Main Committee meeting. The table below is a potential distribution of papers (developed post Environmental telecon, more tentative papers indicated with italics).

| Joint Session | Environmental Session |
|--|---|
| ISCC and RSB perspectives | EMACT/flare monitoring (double length) |
| Shell and/or Chevron Phillips “perspective” on plastic circularity | <i>Regulatory landscape for new feeds</i> |

| | |
|--|--|
| | <i>Topic from Ghent</i> |
| | <i>Experience with renewable feedstock</i> |
| | <i>GHG inventory/quantification</i> |

Date for Potential Face to Face: It was decided to hold the December 9th meeting face-to-face (with capability to join virtually) at the Linde, Woodlands, office (Mark Ulrich as host). Rick suggested moving the start time to 10:00 AM to avoid traffic issues for those traveling to Woodlands. The Linde policy is that masks are not required if all are (COVID) vaccinated, physical distancing is still practiced. Individual companies may have different requirement of employees when attending meetings. Mark Ulrich has asked each person planning on attending face-to-face to contact him to discuss (confidentially) individual circumstances (vaccine status – if you desire, company policy).

Review of Action Items: Below are the action items (responsible in **bold**)

- **Andrés:** Reach out to ISCC again regarding interest in presenting on certification. Keep Jake Hilbrich in loop.
- **Andrés:** (Re)Connect with Ghent on their willingness (and topic) to present
- **Jake:** Reach out to his ISCC contacts regarding presenting on certification. Keep Andrés in loop.
- **Jake:** Inquire about Chevron Phillips intent with potential paper/presentation on plastic circularity. Communicate with Walter about need/desire for two talks.
- **Brandon:** Check interest of potential authors/presenters (that he has in mind) on Regulatory Landscape for New Feeds and GHG Inventory/Quantification topics
- **Andrés:** Follow up with potential for company to present on renewable feedstock processing
- **Mark U.:** Send Linde office address to Walter for inclusion in updated (12/9) meeting notice (**DONE**)
- **Walter:** Send updated (12/9) meeting notice with change of start time and Linde office address (**DONE**)
- **Rick/Walter:** Discuss joint + single vs. single session during Main Committee meeting (**DONE**)
Post telecon note: Rick presented Environmental subcommittee status to Main Committee. Stated that “full” Environmental session is less certain if some papers are dedicated to the joint session. Technology subcommittee shared that Decarbonization/Circular Economy session was receiving enough interest/submissions that they were likely okay without it being a joint session.

Important Date Reminders: The dates listed in item 6 of the agenda were reviewed. Some are still to be finalized. With lack of firm commitment on all papers, it is likely that some abstracts will come after the November 1st date. They will still be entered into Confex either by the EPC Program Chair or AIChE.

Adjourn: The meeting/teleconference was closed at 10:01 am.