



MEMORANDUM

DATE: 7 June 2018

TO: **MI Board of Directors**

FROM: Greg Dolan

RE: *Methanol Institute Board of Directors Meeting – Como, Italy*

Attached are materials for the Methanol Institute's Como Board of Directors Meeting. The Board Meeting will be held on **Thursday 14 June from 09:00 to 12:00** in the Sala Venezia Meeting room of the Albergo Terminus Hotel located at Piazza Cavour 24. Following the BOD meeting, there will be a light lunch served at 12:30 on the Terrace lake view

On the evening of Wednesday 13 June, Ecofuel will be hosting a dinner for Board Members at 20:00 at the La Colombetta restaurant located at Via Armando Diaz 40. If you have not already RSVPed for the dinner and would like to attend, please contact me directly (*Note: George and Amal Clooney have dined at this restaurant.*)

The meeting will be held preceding the IMPCA European Mini-Conference, being held at the Hilton Hotel, Como.

MI has moved to a paperless Board pack, using the Diligent Boards software/application. MI Board members who are on Diligent can access the electronic Board Books via their electronic devices and sync the Diligent app to find the latest Board Book. Non-Board members will receive the Board Books in Acrobat PDF format.

If any Board members need additional assistance with accessing the Diligent e-Board Books, please let us know.

Dress code for the Board Meeting and reception: business casual (jacket and no tie).

Please do not hesitate to contact me through my mobile phone at +1 202 421 5267 if you have any questions or need assistance.

We look forward to seeing you in Como. Thank you.



DRAFT MINUTES
MI Board of Directors Meeting
Mitsui USA Offices, Houston -- March 23, 2018

I. CALL TO ORDER

Mr. Ben Iosefa, Chairman of the Methanol Institute (MI)'s Board of Directors called the MI Board of Directors Meeting to order at 9:00 AM and welcomed all present.

Board Members Attending:

Ben Iosefa	Methanex Corporation (Chairman)
Olga Sessions	SABIC (Vice-Chair)
Dennis Patrick	MHTL (Treasurer)
Norbert Baum	HELM AG
Abdullah Al-Qunaibet	SABIC
John Carley	Mitsui & Co.
Paul Moschell	AMPCO
Kevin Struve	OCI
Shahrom Muhammad Bin Yusuf	Petronas
Wade Wiggins	Methanex (<i>in person proxy</i>)
Sandy Duncan	Oman Methanol Company (<i>by written proxy</i>)
Mark Vassar	MGC (<i>by written proxy</i>)
Khalid Al-Kuwari	QAFAC (<i>by written proxy</i>)

Other MI Members in Attendance:

Steffen Erler	SABIC
Sue Appleton	Johnson Matthey
Jean-Pierre Pelchat	Azelis
Mauro Risi	Ecofuel SpA
Fabian Tai	Methanex
Rich Sumner	Methanex
Keiichi (Ken) Nakano	Mitsubishi International Corporation
Masataka Takahashi	Mitsui & Co.
Eiichi Ishiyama	MOL
Mohd Azman Bin Kamaldin	Petronas
Shahrom Muhammad Bin Yusuf	Petronas
Mari Veldekens	SCC
Mater Al Dhafeeri	Sipchem

Other MI Members by written Proxy:

Jan W. Spin	Southern Chemical
Richard Courtney	IMTT

Staff and Guests:

Greg Dolan	MI
Larry Navin	MI

Mr. Navin acted as Secretary in recording the minutes of this Board meeting.

II. VERIFICATION OF A QUORUM

Mr. Iosefa noted that for the Board of Directors meeting, we require that a simple majority of Board Members be present, represented in person, or by written proxy. Mr. Dolan noted that we had nine of thirteen Board members present, one represented in person by proxy and three represented by written proxy.

III. ANTITRUST GUIDELINES

The Antitrust Guidelines were reviewed. Audio recordings of the meeting will be retained by MI to help clarify any questions that may arise in the future.

IV. APPROVAL OF DRAFT MINUTES OF 10 NOVEMBER 2017 BOARD MEETING

Mr. Iosefa directed meeting attendees to the minutes which were included in their Board packets and asked for a motion to approve the minutes.

ACTION 2018-01-01: *The Draft Minutes of the 10 November 2017 Board meeting were approved unanimously, on a motion by Mr. Dennis Patrick, seconded by Ms. Olga Sessions.*

V. REVIEW OF 2018 MI VISION AND MISSION STATEMENT

Mr. Iosefa led a review of the Vision and Mission statement for the association, which ensures that MI is focused on those areas that are identified as priorities by the members and noted that, at the last Board meeting in Singapore, members approved the 2018 MI Vision and Mission as a more concise identification of our priorities.

VI. COMMITTEE REPORTS

A. Global Fuel Blending Committee (GFBC)

Mr. Dolan presented the GFBC report on behalf of Committee Chairman Jason Chesko of Methanex, who was unable to participate in the meeting. He updated the Board on a number of activities being undertaken by the GFBC, including: MI's plan to release a Sample Safety Data Sheet on M15 Gasoline Methanol Blends, the development of which was led by Methanex; an update on the U.S. Department of Energy's (DOE) Co-Optima Stakeholder group, where MI is preparing to file a Freedom of Information Act request to access the projects data on methanol assessment; MI participation in an ASTM Task Force to remove a methanol prohibition from a new specification for High Octane Number Test Fuel; and recent methanol fuel blending developments in New Zealand, India, China, Canada and the EU.

The Board discussed these subjects in greater detail, including the politics surrounding the Co-Optima program and the US ethanol industry, and Mr. Mauro Risi of ENI/Ecofuel providing an update to the Board on their ongoing demonstration program in Italy featuring 5 Fiat 500 vehicles running on a 15%

methanol and 5% bioethanol fuel blend. Mr. Iosefa noted that the Board would certainly be interested in any new data that ENI could share publicly that arises from the demonstration program.

Board Directors and MI members can view the full GFBC presentation [here](#).

B. Legislative & Regulatory Affairs Committee

The Legislative/Regulatory Committee presentation was given by Committee Chairman Steffen Erler of SABIC. Mr. Erler provide an overview of the committee's activities with regard to the ongoing Health Canada and Environment Canada risk assessments of methanol, noting a recent meeting held with Health Canada officials, and efforts to contract a consultant to undertake PBPK modeling, data from which can be shared with Health Canada. Another key Committee focus has been on EU proposals to limit the amount of methanol in windshield wiper fluid (WWF) and denatured alcohol to 0.6% by volume. MI has submitted comments to the ECHA, contacted EU-REACH representatives at the member state level, the EU Commissioner for Better Regulation and others. It appears that despite MI's best efforts the proposal may be adopted. If so, there will be a one-year grace period before the restrictions take effect. Also included in the presentation were updates on: MI's efforts to create a Government and Regulatory Affairs matrix for the Asia Pacific/Middle East region; the US EPA IRIS program; ASTM Standard D5983 on MTBE; regional updates; and the Leg/Reg Committee's efforts to support other MI committees on issues that cut across committee lines of jurisdiction.

Board Directors and MI members can view the full Leg/Reg Committee presentation [here](#).

C. Product Stewardship Committee (PSC)

Committee Chair Sue Appleton of Johnson Matthey presented the PSC and Bootleg Alcohol Prevention Subcommittee (BAPS) report. Ms. Appleton shared an update on the Committee's project to update MI's Safe Handling Video, noting that MI has submitted US\$16,500 of a projected total cost of US\$30,000 to Hadron Films who have been contracted to produce the video. The video's scope has been increased slightly over what was originally proposed to include additional safe handling information and consequently the shooting date has been pushed back. The video is planned to be shot at Methanex's Geismar, LA facility in the coming months. Ms. Appleton also noted that a new issue of MI's *Safety Snapshot* newsletter focusing on safety accomplishments by member company AMPCO was released, and that a new edition highlighting the full range of MI's safe handling materials will be produced in the near future.

Ms. Appleton also discussed areas where the PSC Committee is working with other MI Committees, including on the EU Reach restriction on methanol in windshield wash fluid, and on the Asia Pacific/Middle East Government and Regulatory Affairs Matrix.

Bootleg Alcohol Prevention Subcommittee (BAPS) topics of discussion included: an update on MI's work with Orphan Diagnostics, who are seeking to market a methanol detection test strip; a possible visit to Apothecon Pharmaceuticals by MI COO Chris Chatterton; and on ongoing exploration of ways to collaborate with institutions such as Doctors Without Borders (MSF) to help MI leverage their global reach and expertise.

Board Directors and MI members can view the full PSC/BAPS presentation [here](#).

D. Market Development Committee (MDC)

Mr. Dolan presented the Committee report as MDC Chairman Zameer Zahur Hussain was unable to participate in the meeting. Mr. Dolan noted that the MDC has appointed a new Committee Vice Chairman, Deepak Devendrappa of Methanex and that the Committee has proposed holding an in-person, 2018 MDC strategic planning meeting later in the year.

The MDC leadership held a strategic planning call on January 23rd of this year to assess the Committee's priorities and objectives. As a result of that call, MI's Dom LaVigne is currently developing a sub-strategy/matrix which will be completed in May. In order to raise member involvement, it has been proposed to have ad-hoc presentations by outside experts and to allow non-members to participate in the MDC.

Mr. Dolan presented updates on committee priorities, which have been grouped into High Priority Engagement items: Industrial Boilers; Renewable Methanol; Small-scale Methanol Technology (SSMT); Methanol-to-Power, and Lower Priority Engagement items: Cooking Applications; Methanol Fuel Cells; Wastewater Treatment; and the newly added Methanol-to-Hydrogen.

Board Directors and MI members can view the full MDC presentation [here](#).

E. Marine Fuels Committee (MFC)

Committee Vice Chairman Fabian Tai of Methanex presented the MFC Committee report as Chairman John Livorness of SABIC was unable to participate in the meeting. Mr. Tai presented an update on the Committee's full-range of activities, including on IMO IGF Codes and MI's engagement through the International Bunker Industry Association (IBIA).

Mr. Tai also updated the Board on the Committee's work to create a Fuel Choice Calculator undertaken with Lloyd's Register. This valuable new tool can be accessed at: <http://quiits.com/fuel-choice-calculator/>. Other updates included: the expansion of the Committee's communications initiatives, including the co-hosting of a workshop with MAN on March 20th at MAN's facilities in Copenhagen; and the hiring of consultants in Europe and Asia to help promote methanol as a marine fuel and focus on key messaging around priority events.

Lastly, Mr. Tai also provided the Board with updates on a number of key pilot projects, including: Summeth Martec II (Finland/Sweden); MethaShip (Germany); Billion Miles (Singapore); GreenPilot (Sweden) and others.

Mr. Kevin Struve of OCI noted that there have been recent media reports about the proposed IGP Methanol facility and IGP's partnership with COSCO. Mr. Dolan noted the IGP has recently joined MI at the Tier 4 level and that MI will continue to engage with IGP and COSCO to explore marine methanol possibilities.

Mr. Iosefa noted that Methanex has ordered 4 additional methanol dual fuel vessels in addition to the 7 already in service, and that MAN has stated that they expect the cost of such dual-fuel vessels to eventually be the same as for a current vessel without dual-fuel capability. Mr. Iosefa noted that other

methanol producers in addition to Methanex also need to support this technology and that more such vessels need to be ordered and operated. Mr. Norbert Baum asked if Mr. Iosefa could share their real life experiences with the vessels and Mr. Tai noted that Methanex is currently burning methanol in all of their dual-fuel ships, not because it is currently economical to do so, but to prove that the technology is feasible and to be ready for tighter regulations in 2020.

The Board conducted a discussion on the relatively low costs of methanol marine infrastructure as compared to LNG, and Mr. Shahrom Bin Yusuf noted that as Petronas is already involved in the LNG space, any data that could be provided on the operation of vessels on methanol would be very helpful in making the case internally that methanol is a viable competitor to LNG. Mr. Dolan noted that all of the materials from the recent MAN Workshop will be available on MI's website, and that a full video of the event will be available shortly on MI's YouTube page.

Board Directors and MI members can view the full MFC presentation [here](#).

VIII. TREASURER'S REPORT

Mr. Patrick and Mr. Dolan gave the Treasurer's Report. Mr. Dolan noted that MI's 2017 year-end surplus was \$45,821.

The \$45,821 year-end surplus puts MI's cash reserve at just over \$1 million (\$1,004,134), which is 51% of 2017 annual operating costs, and meeting the Board target to have a cash reserve at 50% of annual operating costs.

Some highlights of 2017 year-end review:

Income -- \$2,003,392

With regard to dues revenues, Mr. Dolan explained that MI reached 95% of budgeted dues revenues for 2017 (\$1,937,587). The association did lose a couple of members. BP did not pay dues last year, but has not officially left the association. BP's Bob Niedjielski explained that BP does not currently have anybody actively engaged in methanol. MI continues to list BP as a member and continues to try and engage with them to secure dues payments for this year. Other companies to drop-out of the association included Lanxess, Oberon, Oorja, SCC Distribution and Vitol (total revenue loss of - \$125,000). However, the association did add four new members; Lebzi Halal, Muntajat, UCC and NFP (total revenue gain of +\$41,250). Other sources of revenue included the Washington Methanol Policy Forum held in June, which brought in revenue of \$55,000, minus \$45,000 in expenses and thus contributed a net gain of \$10,000 to the association. MI also received a tax refund from the Singapore Government of \$27,035, and interest of \$2,561. In total, the association reached total revenue of \$2,003,392, or 100% of budgeted revenue for 2017.

Total expenses for 2017 were \$1,977,180 (98% Actual-to-Budget)

Program Expenses – \$402,464

Program expenses of \$402,464 for 2017 are 94% Actual-to-Budget and now include a separate budget section for regional representatives (Eelco Dekker and Kai Zhao) which had previously been included

in the GFBC budget. There was also a reduced spend in China due to the suspension of MI's agreement with Peking University. Other major expenses included the no interest loan of \$30,000 provided to Orphan Diagnostics, and the Mercer KPI Workshop's cost of \$32,303.

Operating Expenses -- \$351,194

Operating Expenses were \$351,194, 91% of Actual-to-Budget. The MI Singapore office move to a new location provides significant rental savings over the three-year term of the lease.

Payroll -- \$1,039,897

Payroll came in right at 100% of budget at \$1,039,897. Payroll includes the payment of 2016 staff bonuses to employees.

Travel -- \$183,625

Year-end travel expenses were slightly over the allocated budget at 112% of Actual-to-Budget, with the overage being due to year-end travel to China that was necessitated by our need to register the association in that country. While staff worked diligently to control travel expenses, MI staff still presented or participated in more than 60 global industry conferences during the year, and numerous meetings.

2018 Board-Approved Budget

The Board-Approved 2018 Budget includes total projected income of \$2,018,000, expenses of \$2,017,830 and a projected surplus of \$170. Expenses include: Program expenses of \$435,280; Operating Expenses of \$344,750; Payroll of \$1,080,300; and Travel of \$157,500.

2018 Revenue

2018 actual revenue as of March 16th is \$1,437,474 (not including just received payment from Sipchem). With Sipchem's payment 29 of 38 companies have now made their dues payment and our collected revenue is roughly 75% of total projected income, which is ahead of where we have traditionally been at this point in the year. Additionally, we have already signed up a new member this year, IGP Methanol.

2018 Expenses

As of February 28, total expenses are \$385,473 (19% Actual-to-Budget). Program expenses are \$17,002 (4% Actual-to-Budget), Operating Expenses are \$84,232 (24% Actual-to-Budget), Payroll is \$274,133 (25% Actual-to-Budget), which includes 2017 staff performance bonuses, and Travel expenses are \$10,106 (6% Actual-to-Budget). These numbers are all in line with usual spending at this time of the year and reflect the front-loading of certain costs such as subscriptions and audits.

Board Directors and MI members can view the full Treasurer's Report/presentation [here](#).

IX. MEMBERSHIP REPORT

Mr. Dolan presented the Membership Report highlighting principle recruitment targets including Yuhuang, Geely Automotive and Fiat Chrysler Automotive, MAN, a number of ship operators and other companies. Mr. Dolan noted that many successful new memberships are “closed” with the assistance of current members who have relationships with the targeted companies. MI has provided a membership recruitment package on our website, and we have recently completed our 2018 *Methanol Milestones* annual newsletter and also a new short brochure which can be used in member recruitment, both of which were distributed at the meeting.

Board Directors and MI members can view the full Membership Report Presentation [here](#).

X. CURRENT BUSINESS

A. Revenue Task Force

Mr. Iosefa noted that MI has developed a Revenue Task Force (RTF) to determine unfunded program needs based on the strategic objectives of the association. The RTF is considering revenue targets for the Proposed 2019 Operating Budget and will provide recommendations on revisions to MI’s dues structure, which has not changed since 2007. Mr. Iosefa noted that today’s discussion would be an important part of the decision making of the RTF which is scheduled to provide final recommendations to the Board in advance of the next BOD meeting.

The Board held a wide-ranging discussion on revenue increases, particularly dues increases. There was discussion of the need to increase revenue while not alienating, and possibly losing, member companies. Both Mauro Risi of ENI and Mater Al Dhafeeri of Sipchem indicated plans to upgrade their companies’ memberships from Tier 3 to Tier 2, for which Mr. Iosefa and Mr. Dolan thanked them.

Mr. Moschell of AMPCO noted that, aside from voting privileges, there was not a lot of differentiation between Tier 3 and Tier 2, and that MI should explore ways of further distinguishing the revenue tiers. Mr. Erler inquired as to whether MI had considered adding a Tier 5 at a low dues level to attract additional members. Mr. Dolan stated that that idea has been considered, as have other ways to increase revenue, such as organizing conferences or providing industry analytics, but noted that all have been rejected for various reasons.

Following discussion, there was broad support for an across the board 25% dues increase to provide the association with additional revenue for important unfunded program activities. Mr. Dolan noted that MI will conduct a member survey to gauge the reaction of Tier 3 and Tier 4 members to an increase.

Board Directors and MI members can view the full SCTF presentation [here](#).

B. MI China Entity and NGO Law Update

Mr. Iosefa noted that on 1 January 2017 a new law impacting how domestic and foreign NGO’s do business in China went into effect. Mr. Dolan provided an overview of the law noting that the complex law requires outside NGO’s to partner with an existing entity under the umbrella of a Chinese

government ministry, and to have all in-country expenses routed through their Chinese partner's bank accounts. MI is currently exploring options for compliance with the NGO law. While the law went into effect in January 2017, only 400 or so of the 7000 affected NGO's operating in China had registered at the time of this meeting.

Mr. Dolan noted that MI has signed a contract with MCI, a Swiss-based international advisor for Chinese NGO registrations and administration, and that MI continues to hold discussions with the China Petroleum & Chemical Industry Federation (CPCIF) on the potential to secure a relationship with them as MI's host. MI expects to submit all needed documents in the first half of the year and hopes to have final approval by the end of 2018.

Board Directors and MI members can view the MI China Entity and NGO Law presentation [here](#).

XI. NEW BUSINESS

A. Election of Officers & Executive Committee

Mr. Iosefa asked that members review and approve the slate of 2018 MI Board Officers and the members of the Executive Committee.

ACTION 2018-01-02: *The Board unanimously approved the MI Board Officers and Executive Committee slate on a motion by Mr. Paul Moschell, seconded by Mr. John Carley.*

Board Directors and MI members can view the full Board Officers and Executive Committee Slate [here](#).

B. Very Connect Member Platform

Mr. Dolan explained that MI has invested in new association software called VeryConnect. This new software will enable MI to more professionally organize Committee materials and to enhance member participation outside of the regularly scheduled quarterly calls. The initial launch of VeryConnect is happening in March, and the full roll-out to members will occur in April.

C. Proposed 2018 Board Meeting Schedule

The timing for the two remaining 2018 Board Meetings was discussed. The suggested timing of the next meeting, alongside the IMPCA European Mini-Conference in Como, Italy on 14 June was noted to be in conflict with the Eid celebration marking the end of Ramadan. A number of alternatives were suggested, including moving the meeting to coincide with APIC in Kuala Lumpur on May 9-10, or keeping the meeting in Italy but moving the date to the following week. MI Staff will work with the Executive Committee to find a suitable time for the Board meeting. There are a number of options for the 3rd Board meeting, traditionally in November. Options include in Singapore alongside the IMPCA Asian Methanol Conference, in Indonesia, in India, or in China. In addition, Mr. Norbert Baum suggested moving the third Board Meeting to October, alongside the EPCA Conference taking place in Vienna. MI Staff will work with the Executive Committee to determine a suitable date and location for the November Board Meeting.

XII. ADJOURNMENT

Mr. Iosefa announced that the day's agenda had been completed and asked for a motion to adjourn the meeting.

ACTION 2018-01-03: *There being no further business, the meeting was adjourned at 12:20 pm on a unanimous vote proposed by Mr. Norbert Baum, and seconded by Mr. Abdullah Al-Qunaibet.*



Global Fuel Blending Committee Draft Minutes

Wednesday 23 May 2018 Conference Call

Jason Chesko, Methanex (Chairman)
Christen Downie, Methanex
Mohammed Al-Sultan, SABIC
Paul Wuebben, CRI
Bill Piel, TEIR Associates
Greg Dolan, MI
Chris Chatterton, MI
Dom LaVigne, MI
Larry Navin, MI

I. REVIEW DRAFT MINUTES 20 FEBRUARY 2018 CONFERENCE CALL

The Committee's minutes from 20 February 2018 conference call were reviewed and approved.

II. M15 SAMPLE SAFETY DATA SHEET

Following the initial posting of the M15 Sample Safety Data Sheet, MI received additional comments from Ecofuel and SABIC largely focused on the characterization of MTBE in the document. Staff will be making those changes in the document, and then will provide to the Methanex contractor that drafted the original SSDS for final review before reposting.

***ACTION:** Staff making additional edits to M15 SSDS.*

III. US DOE PROJECT CO-OPTIMA UPDATE

MI has been participating in a stakeholder group for the US Department of Energy's Project Co-Optima, a multi-national laboratory effort to identify future fuels for high efficiency internal combustion engine vehicles. In June 2017, DOE announced that methanol did not "make the cut" of molecules proceeding from Tier 2 to Tier 3 evaluation. MI send a letter to DOE in August 2017 challenging this decision, and requesting a meeting between MI and DOE officials. A conference call was held between MI and Co-Optima leadership in November 2017, in which MI expressed specific concerns with regards to the assessment of methanol. Following the call, Co-Optima provided a link to a database document that had little information. On April 11th, MI submitted a Freedom of Information Act Request to the DOE asking for all of the data from the methanol assessment, including all internal correspondence. This effectively puts DOE on notice questioning their decision, and may provide MI with useful information on critical issues like materials compatibility.

In related activity, on April 18, MI submitted comments to House Energy and Commerce Subcommittee on the Environment following hearings on High Octane Fuels and High Efficiency Vehicles (April 13) and Future of Transportation Fuels and Vehicles (March 7) urging consideration of methanol as a high octane fuel component and sharing FOIA request. On April 24, MI submitted comments to US EPA on petition by Butamax to register use of up to 16% isobutanol as gasoline blendstock under “Octamix” waiver with MI pointing to benefits of methanol as gasoline component. During the discussion, it was noted that the Butamax petition could serve as guidance for any future registration of methanol under the EPA’s 211 (b) process. Bill Piel noted that isobutanol is a superior co-solvent for methanol fuel blending, dampening the “RVP kick” from the addition of up to 5% methanol as permitted under the “Octamix” waiver. Methanol blends have not yet gone through the 211 (b) registration process, which is complicated and costly.

ACTION ITEMS: (1) MI is awaiting reply from DOE on any cost associated with compliance with our FOIA request; (2) If the DOE fails to respond in a reasonable time period, MI can enlist allies in Congress to push the department for compliance; (3) Staff will closely monitor the docket for the Butamax petition for lessons learned.

IV. EU RENEWABLE ENERGY DIRECTIVE II

The EU’s Renewable Energy Directive establishes overall policy for the production and promotion of energy from renewable resources in Europe. RED I required all EU member states to ensure that at least 10% of transport fuels come from renewable resource by 2020. In November 2016, the EU Commission published a proposal for RED II to ensure the continued use of renewables by 2030. Work under the “trilogue procedure” is expected to be completed by the EU Commission, Parliament and Council on RED II sometime in 2018. Eelco Dekker prepared a position paper for MI, in coordination with ePure, European Fuel Oxygenates Association (EFOA), and European Biodiesel Board (EBB), along with MI members CRI, Enerkem, BioMCN, and Methanex. The paper was distributed to trilogue participants on May 2nd, and MI released the paper publicly on its web sites and social media platforms. The position paper highlights industry recommendations regarding: fuel ethers; biodiesel; biofuel definitions; renewable fuels of non-biological origin; and the use of multipliers.

ACTION ITEM: Staff will continue to track the trilogue discussions, while engaging with key stakeholders to encourage support for MI’s stated positions.

V. METHANOL FUEL BLENDING PRIMER

The committee has noted in the past that concerns expressed regarding methanol fuel blending in gasoline (ie. toxicity, corrosivity, fire safety, etc.) are often misleading and inaccurate. An October 2015 ACEA white paper on methanol was one of the more egregious examples. There is a need for a simple white paper/primer that addresses these concerns. Staff in discussions with Jamie Turner-Bath University and Sebastian Verhelst-Lund University and Mark Graves (tech communications expert) about preparing primer report, along with PPT and infographic. This work can be in part informed by past MI material, including our comments on 5th edition of the Worldwide Fuel Charter. Additionally, based on this primer report, MI staff will look at updating other material posted to MI’s web site to ensure that similar positions are being promoted.

ACTION ITEM: Prepare scope of work, proposal/budget for primer and related tools, targeting September release.

VI. ASTM UPDATE

Greg noted that Bill Piel had flagged a new ASTM specification for a High Octane Number Test Fuel (D8076) that references in its scope the use of fuels broadly containing up to 50% by volume alcohols and ethers, but specifically prohibited any fuels containing methanol. While this is a test fuel specification, there was a concern that such a prohibition could carry over to a commercial standard for high octane fuels. Greg contacted Bob McCormick from the National Renewable Energy Laboratory, who noted that participants considered methanol to be a “complication” as justification for the prohibition. The ASTM task force had a conference call in May 2017 and agreed to issue a new ballot recommending removal of the methanol prohibition. The ballot was submitted at the end of August to ASTM. In December 2017, the first ballot was approved by the ASTM D02 committee, with the second ballot approved in March 2018, and final publication expected shortly. The removal of the methanol prohibition doesn’t obligate the automakers to test methanol as a high octane fuel blendstock, but does keep that option available.

MI staff determined that the standard for MTBE is currently in revision (D5983). In fact, Bill Piel has been a member of the D5983 task force for the past 2 years. In December 2017, a second ballot had negative comments needing to be addressed, including concerns noted by BP regarding the removal of requirements for color and washed gum content. In March 2018, MI contacted ASTM and was added to the task force, and alerted MI GFBC/Leg-Reg Committee. On June 17, MI’s Greg Dolan and SABIC’s Mohammed Ansari participated in Task Force conference call that focused on MTBE industry concerns with the BP push to include color and washed gum content. Greg Dolan noted that the standard by definition is supposed to address the pure product, while color and wash gum content refer to contaminants that might be picked up along the distribution chain. SABIC and Lyondell noted that the ASTM standard was NOT included in industry sales specifications, which questions the relevancy of the ASTM provisions. A second conference call will be scheduled in June, in advance of the June 24th ASTM meeting in Phoenix, where these negatives will need to be resolved. The task force chair encouraged the participation of industry representatives at this upcoming meeting.

ACTION ITEMS: (1) A second conference call for the D5983 task force is being scheduled; (2) MTBE industry representatives have been encouraged to participate in the ASTM meeting being held on June 24 in Phoenix.

VII. ENI/FCA M15 FOR ITALY

In November 2017, in an event with the Italian Prime Minister, the CEOs of Eni and Fiat Chrysler Automobile signed an MOU for joint development of technology reducing CO2 of road transport vehicles. Eni had developed a 15% methanol and 5% bioethanol fuel blend, that is being demonstrated in five FCA Fiat 500 vehicles operating in Eni’s Enjoy car-sharing fleet. At the invitation of MI member Ecofuel (a wholly-owned subsidiary of Eni), Greg Dolan visited the Eni research center in Milan in March, and also meet with FCA. Eni and FCA encouraged MI to help promote a “common vision” around this “A20” fuel blend. They are looking to encourage the adoption of an Italian national standard for M15/E5, and then to pursue an EU-wide CEN standard. FCA has already introduced their work to ACEA without receiving negative comment, and is conducting a “road show” seeking other stakeholder support.

ACTION ITEMS: (1) MI is providing technical and promotional support to Ecofuel/Eni/FCA for this A20 fuel blend; (2) The initial pilot demonstration will be completed in June/July, and Eni/FCA will share results with MI; (3) MI has inquired whether Eni can share any of their initial fuel testing results; and (4) Once the pilot is completed, MI can invite Eni/FCA to report on their work in a future GFBC conference call.

VIII. INDIA UPDATE

There have been continuing press reports emanating from the National Institution for Transforming India (NITI Aayog, former Planning Commission reconstituted by Prime Minister Modi) calling for India to adopt methanol fuel blends. In December 2017, the Government of India published a Gazette notice establishing type approval requirements for emissions from for M15 and M100 light-duty vehicles (including 2- and 3-wheelers) and MD95 heavy-duty vehicles. Complying vehicles would be required to display a clearly visible sticker. Emissions testing is now being undertaken by the Automotive Research Association of India (ARAI). In April, Dom LaVigne visited (trip report posted to Very Connect), and following this meeting ARAI shared with MI a draft M15 national fuel standard for review and comment (the draft had been shared with GFBC members for the call).

Dor Chemicals of Israel is currently negotiating an MOU with the Indian Oil Company to provide support for vehicle standards as well as fueling infrastructure standards. There is a desire to have the first methanol pump operating within the next several months. In addition to our engagement with NITI Aayog, MI has been in direct contact with the Petroleum Ministry and the Society of Indian Automobile Manufacturers.

ACTION ITEMS: (1) Continue to engage with key stakeholders in India, and respond to any information requests, (2) An immediate need to provide comments on the draft M15 standard.

IX. CHINA UPDATE

In September 2017, China state media announced plans to require the use of E10 gasoline blends in the country by 2020. While the E10 mandate could have a negative impact on low-level methanol blending in gasoline – although we have seen “fake” ethanol blends using methanol in the past in China – the bigger impact could be on the ~10 million metric tons of MTBE now blended in gasoline in China. Recently, the Asian Clean Fuels Association and the European Fuel Oxygenates Association held a briefing in Beijing to raise concerns about the E10 mandate, noting that some \$10 billion in investments in MTBE production could be put at risk. ACFA has been urging the retooling of MTBE plants in China to produce ETBE, although this would threaten ~3.5 million metric tons of methanol demand for MTBE production. MI staff has held an initial meeting with ACFA staff, and will discuss MI positioning with key member reps based on China. One suggestion is for MI to encourage the Chinese government to consider GEM (gasoline/ethanol/methanol) blends as a means to implement the E10 mandate while also expanding the market for methanol as a blendstock.

In other updates, Chris Chatterton and Kai Zhao recently met with Wei Anli of the China Internal Combustion Engine Industry Association (CICEIA) who offered several suggestions for joint engagement including: (1) Establish a “Methanol Alliance” of global entities supporting methanol fuel blending, with MI serving as General Secretary; (2) Consider holding a Methanol Policy Forum in Beijing in early 2019; and (3) MIIT/NDRC/MOST submitted a report to the State Council recommending methanol policy formation that has been accepted, and MI was urged to provide support for this effort.

ACTION ITEMS: (1) MI staff will continue to engage with members and other stakeholders in China to develop an action plan in response to the E10 mandate; (2) MI will work with CICEIA on the joint activities noted above; (3) MI to author an article for publication in China that provides support for methanol policy initiatives.

X. ISRAEL UPDATE

Following the 2016 adoption of a national standard in Israel for M15 blending, the commercial sale of M15 is now “operational” with Dor Chemicals reporting consumption of 1,000 metric tons/month. Israel government

has not provided the tax benefits needed to benefit the consumer, and Dor is pushing for same treatment as recent relaxation of taxes for CNG. FCA is also pushing the government to recognize CO2 benefits of using methanol fuel in a Fiat 500, which is a prerequisite for broader commercial introduction. Dor is also looking at M100 light-duty truck conversion based on a spark-ignition natural gas engine. Finally, Dor is providing technical support for India's M15 push.

ACTION ITEM: MI will continue to engage with key stakeholders in Israel.

XI. WORLDWIDE FUEL CHARTER

In September 2013, the Worldwide Fuel Charter 5th edition was released and again noting: ***“Methanol is not permitted. Methanol is an aggressive material that can cause corrosion of metallic components of fuel systems and the degradation of plastics and elastomers.”*** MI had provided comments challenging WWFC prohibition on methanol that went unaddressed. Eelco Dekker reports that WWFC is now working on draft 6th edition. MI has alerted FCA and encouraged them to engage on the WWFC to remove the methanol prohibition.

ACTION ITEMS: (1) Staff to determine timing for 6th edition and who is managing the drafting; (2) Need to find “champions” in automotive industry – like FCA and Geely – to challenge methanol prohibition from inside.



Legislative/Regulatory Affairs Committee Draft Minutes

Tuesday 29 May 2018

Steffen Erler, SABIC (Chairman)
Mari Veldekens, Southern Chemical (Vice Chair)
Meg Mahoney, Methanex
Christen Downie, Methanex
Daphne Ferguson, Enerkem
Joe Rosso, SCC
Greg Dolan, MI
Chris Chatterton, MI
Dom LaVigne, MI
Larry Navin, MI
Kai Zhao, MI

I. REVIEW DRAFT MINUTES OF THE 1 MARCH 2018 CONFERENCE CALL

The Committee reviewed the draft minutes of the 1 March call, which were approved as sent.

II. CANADA ACTIVITIES

The Canadian Government is conducting a two-part risk assessment review of methanol through Environment Canada and Health Canada. The Environment Canada portion of the review has already been concluded and methanol was found to be a substance which causes a “lower relative risk to the environment,” which was the best possible outcome and is the lowest risk category for which methanol could have been assigned. In September 2016, MI prepared and submitted comments to Environment Canada introducing MI to Canadian regulators as the voice of the global methanol industry and a potential partner to them going forward.

The second component of the review is a risk assessment for human health which is being conducted by Health Canada. MI first met with Health Canada in November 2016, and worked to coordinate their access to the REACH Methanol Dossier to aid in their assessment. After some delays on Health Canada’s end in approving the Non-Disclosure Agreement for the REACH materials, Health Canada now has possession of the REACH Methanol Dossier and MI has offered any additional assistance we are able to provide as Health Canada reviews the Dossier.

Through a meeting with Health Canada on February 13, 2018, MI learned that Health Canada’s Draft Methanol Risk Assessment will most likely be published in the third or fourth quarter of 2018 (the methanol assessment is being grouped with 29 other alcohols which will be published together as a group). Also

learned through the meeting is that there is some, though a relatively low risk, of methanol being designated as CEPA Toxic, a definition based on risk assessment, not hazard. Health Canada's use of a REACH DNEL of 8mg/kg bw/d rather than the US IRIS reference dose of 2 mg/kg bw/d is more likely to result in a positive outcome for methanol. Also, meeting participants learned that Health Canada has no overall or specific concerns regarding product misuse in Canada.

Steffen Erler noted that MI has contacted two outside consultants, Summit Toxicology and Santoxar, to provide PBPK modeling scenarios that can be shared with Health Canada to lessen the likelihood of methanol receiving a CEPA Toxic designation. The committee has \$10,000 budgeted for potential consultant resources related to the Health Canada assessment.

The Summit proposal quoted a price of USD23,000, and does not include Formic Acid modelling. The Santoxar proposal at USD8,000 is within budget and includes Formic Acid modelling. Steffen noted that the only potential drawback to selecting Santoxar, is that they use IndusChemFate modelling rather than running the EPA model that Summit uses. However, Santoxar has data to demonstrate reproducibility of the EPA model results with IndusChemFate.

Steffen recommended, and the committee agreed to move forward with the Santoxar proposal. Greg Dolan noted that he would contact Santoxar regarding invoicing MI for the work. Per the proposal, we expect to have a draft report from Santoxar no later than September 15. MI then has up to four weeks to review and comment, and will then receive a final report.

Steffen suggested that MI could reach out to Health Canada, both to let them know that we have PBPK modeling capability, and to see how their review of the REACH dossier is progressing and if they have any questions regarding developmental toxicity, an issue raised during the February meeting.

Action Items: (1) MI to continue to engage with Health Canada; (2) MI to contract Santoxar to provide PBPK modeling data to share with Health Canada.

III. POLISH METHANOL CONSUMER PRODUCT RESTRICTION

The European Chemical Agency's (ECHA) Committees for Risk Assessment (RAC) and Socio-Economic Analysis (SEAC) reviewed the Polish proposal to limit the amount of methanol in windshield wash fluid and denatured alcohol sold in the EU to no more than 3% by volume. Following its initial review, the RAC proposed setting the restriction limit to no more than 0.6% by volume of methanol in both windshield wash fluid and denatured alcohol, and used limited citations in finding that the use of bitterants was not a suitable alternative risk management option. The SEAC supported the lower restriction on windshield wash fluid, but excluded any restriction for denatured alcohol. The Methanol REACH Consortium believed that the restriction was too low and did not adequately reflect the current science. The consortium had a socio-economic analysis prepared by TNO Triskelion which was submitted as part of the public consultation. Methanol Institute also submitted comments to the SEAC public consultation.

Unfortunately, the SEAC adopted an opinion to restrict methanol in windshield wash to 0.6%, though with four member-state representatives dissenting; the United Kingdom, Belgium, Portugal and Slovenia. The RAC and SEAC opinions were forwarded to the European Commission which formalizes the addition of substance restrictions to Annex XV of the EU's REACH law, via a process of review by the EU Council REACH Committee, and then a European Parliament committee. Final text of a restriction has now been agreed upon, and the restriction has been published in the Official Journal of the EU. The date the restriction will take effect is May 9, 2019.

Following publication of the restriction in the Official Journal of the EU, MI was contacted by industry publication *ChemicalWatch* for comment. MI's response was included in a favorable story published by *ChemicalWatch*.

Steffen noted that there are two additional options to further contest the restriction. The first, appealing to the EU Court of Justice, would be extremely costly, as legal representation would need to be secured, and would also have a low likelihood of success. The second, to contact the EU Ombudsman with our concerns about the process by which the restriction was considered and adopted, requires no legal representation, and we can base our arguments off of those we have already made to the EU Commissioner for Better Regulation.

The committee expressed interest in the Ombudsman option, and MI staff will solicit input from member companies who may have dealt with the Ombudsman before, and will research the process of lodging and appeal with the Ombudsman. We will have one year from the date of publication in the EU Official Journal to file with the Ombudsman.

Action Item: MI staff to solicit input from member companies who may have had prior contact with the EU Ombudsman, and to research lodging an appeal with the Ombudsman

IV. AP/ME ACTIVITIES

Government & Regulatory Affairs Matrix

Dom provided an overview of MI's efforts to complete a Government & Regulatory Affairs Matrix for the AP/ME regions. The matrix will allow MI to first map the amount of methanol in trade in various jurisdictions and the legislation and regulations currently in effect in those jurisdictions. With that information MI will be able to more proactively reach out and build effective relationships with decision making entities in the region. This will allow MI to more quickly receive notification of new regulatory or legislative challenges facing methanol, more effectively respond to such challenges, and best decide how to focus our resources. The matrix is expected to be completed and shared with MI members by June 25.

Action Item: Complete and share Government & Regulatory Affairs Matrix with MI members.

V. US EPA IRIS ASSESSMENT OF METHANOL/FORMALDEHYDE

Larry provided an update on the US EPA's IRIS Methanol and Formaldehyde assessments. He noted that there is no update on the IRIS Methanol (Cancer) Assessment which is not listed on the EPA's current work plan.

There have been press reports recently stating that the political leadership at the EPA are 'slow walking' the Formaldehyde Assessment which has not yet undergone its months-long internal (EPA and then additional agencies) review process, which is necessary before it can be issued to the public for comment.

Given the current state of the assessment, it appears unlikely to be released for public comment at any point in the near future, but MI staff will continue to closely monitor the situation.

Steffen noted that the Formic Acid PBPK modeling data that MI is undertaking in relation to the Health Canada Methanol Risk Assessment might also be of use with regard to the IRIS Formaldehyde Assessment. MI will keep the option of sharing that data with either the EPA directly, or the ACC's Formaldehyde Panel, once the modeling is complete.

Larry also provided an update on the debate surrounding the EPA's attempts to introduce a 'Secret Science' rule. Such a rule would preclude the EPA from using research in which the underlying data isn't publicly available for assessments and rule-making. Critics of the proposed rule argue that implementation of the rule would be a political maneuver designed to exclude major health studies which were critical in forming the backbone of the Clean Air Act and other air pollution provisions. MI will continue to monitor this debate closely.

Action Items: 1) MI staff to continue to monitor IRIS developments; 2) MI to continue to monitor the 'Secret Science' debate.

VI. ASTM MONITORING

MI staff determined that the standard for MTBE is currently in revision (D5983). In fact, Bill Piel has been a member of the D5983 task force for the past 2 years. In December 2017, a second ballot had negative comments needing to be addressed, including concerns noted by BP regarding the removal of requirements for color and washed gum content. In March 2018, MI contacted ASTM and was added to the task force, and alerted MI GFBC/Leg-Reg Committee. On June 17, MI's Greg Dolan and SABIC's Mohammed Ansari participated in Task Force conference call that focused on MTBE industry concerns with the BP push to include color and washed gum content. Greg Dolan noted that the standard by definition is supposed to address the pure product, while color and wash gum content refer to contaminants. SABIC and Lyondell noted that the ASTM standard was NOT included in industry sales specifications, which questions the relevancy of the ASTM provisions. A second conference call will be scheduled in June, in advance of the June 24th ASTM meeting in Phoenix, where these negatives will need to be resolved. The task force chair encouraged the participation of industry representatives at this upcoming meeting.

Action Item: MI Staff and member company representatives to continue to work to update ASTM MTBE standard D5983 in a sensible and fair manner.

VII. METHANOL MARINE FUELS UPDATE

Chris Chatterton provided an update to the committee on MI's engagement through the International Bunker Industry Association (IBIA) with the IMO Correspondence Group for low-flash point fuels and MI's creation of an MI IGF Code Task Force. Chris noted that a final report is expected by mid-June.

Steffen asked what countries were potentially the greatest risks to adoption, and Chris noted that Germany held up the process last year, either intentionally or unintentionally, by focusing the discussion on fuel cells and green diesel thus leaving insufficient time to take up methyl/ethyl alcohols. It is expected that this will be rectified at CCF 5 in September.

Action Item: MI to continue to remain active in the process of shaping IMO low-flash point fuels regulations.

VIII. INDIA ENGAGEMENT

Dom LaVigne provide an update on MI's engagement with India. In April, Dom spoke in India at the International Symposium on Fuels and Lubricants conference. Additionally, Dom held meetings with a number of other stakeholders, including the Indian Chemical Council (ICC). MI plans to form a MOU with the ICC and to work on hosting a methanol safety workshop in India in Q3 or 4 of 2018.

Dom has completed a trip report on his visit to India which will be available on MI's new VeryConnect platform. VeryConnect is a closed social media and communication tool which will allow for greater communication and collaboration between MI staff and members. Each committee will have its own section of VeryConnect where ideas can be shared, relevant committee documents will be stored and more. Members will be receiving an invitation to join VeryConnect in the near future.

IX. JAPAN ENGAGEMENT

Dom travelled to Japan in April and had the opportunity to meet with government and private sector stakeholders to discuss potential opportunities for methanol.

Dom met with both the METI and MLIT ministries to discuss their hydrogen energy focus, which includes fuel cell vehicles and CO₂-free hydrogen supply. In meeting with the Japanese and understanding their priorities, Dom noted that there are opportunities for methanol, particularly for methanol fuel cells to help Japan meet their goals.

Dom's trip report from Japan will also be available on MI's VeryConnect platform.

X. PHILIPPINES ENGAGEMENT

Steffen noted that reports that the Philippines has shortlisted methanol on its Priority Chemical List (PCL), a designation which could have impacted methanol import and trade in the Philippines, have turned out not to be the case. Dom contacted the relevant Philippine authorities who made clear that they currently have no intentions of adding methanol to their PCL.



Draft Minutes – Market Development Committee

Tuesday, May 22, 2018

The conference call began at 9:30pm Singapore time (9:30am North America Eastern), and the following persons participated:

Jason Chesko, Methanex
Ceren Kesici, SABIC
Lee Chook Khean, SABIC
Christian Somborn, Proman
Dr. Dick Co, Solar Fuels
Greg Dolan, MI
Chris Chatterton, MI
Dom LaVigne, MI
Larry Navin, MI
Eelco Dekker, MI
Zhao Kai, MI

I. MINUTES

Dom LaVigne chaired the Market Development Committee (MDC) call for Zameer Zahur Hussain and Deepak Devendrappa. The draft minutes of the February 28, 2018 MDC call were approved as sent.

II. MDC STRATEGIC PLANNING

Dom shared with the Committee that the MDC strategic plan/matrix had been incorporated with the agenda for today's call. A synopsis of each application was provided, current status, and market size/opportunities, as well as next steps and action items.

III. TOP PRIORITY ENGAGEMENT

A. Renewable Methanol (RM)

Dom shared that a number of renewable methanol projects were taking place around the world, including biowaste-to-methanol by Enerkem, CO₂-to-methanol in the GCC (QAFAC, GPIC) and in Iceland (Carbon Recycling International). RM is currently the only fuel solution that can meet longer-term IMO low-CO₂ emission limits.

Eelco Dekker had recently completed a white paper on the Renewable Energy Directive II (RED II). MI shared this paper with key members of the "trilogue" discussions from EU Parliament, Commission, and Council which are hammering out the final RED II provisions. MI outlined its concerns in the white paper, which was being managed through the Global Fuel Blending Committee (GFBC).

MI has engaged with TransportCanada on how RM can meet Canada's low-CO2 transportation goals. However, TransportCanada has been reluctant to consider methanol.

Staff proposed to the Committee that MI would work with ATA Insights to develop a renewable methanol primer report and webinar. This would be similar to the 2015 FCBI report on marine fuels, and would be used to tell the RM story and how it would be key to getting it into various energy applications. It is envisioned as a 10-15-page report with a one-page infographic summary. The first draft would be ready within four weeks of the project starting, and a final draft available after seven weeks. ATA Insights would share the report with its database of 10,000 renewable energy contacts, as well as the media. Although there was not funding in the MDC budget for this project, MI could look to re-program other funds or ask individual members for contributions to support the project. The Committee approved going ahead with the report.

Dom also shared that MI staff were looking to develop and incorporate RM into their industry presentations, as well as identifying media and PR opportunities to promote RM more widely.

Action Item: MI staff to identify internal and/or member-based funding to support the ATA Insights Renewable Methanol report (US\$18,430) and single webinar (US\$7,000).

IV. HIGH PRIORITY ENGAGEMENT

A. Industrial Boilers and Cookstoves (IB/CS)

Dom shared that the MI-Peking University IB/CS Report had been distributed to media contacts globally on April 2, and was available for download from MI's web site.

Zhao Kai briefed the Committee that the draft methanol boiler standards on fuel and fuel storage – which are being supported by Shandong University -- were completed and were being translated. He would provide the English versions of the standard this Friday, and Dom would share them with the MDC for review. CAAEFA welcomed feedback by MI and its members. After all feedback had been completed, CAAEFA would share the final draft with CPCIF, and a final-review conference would take place in June/July. Assuming that were to go smoothly, the standards should be available this year. Stakeholders are keen to use these standards as a broader guide for global/ISO/ASME standards. Kai is checking with Shandong University if they can share the results of their research with MI.

Dom mentioned that Project Gaia and Assam Petrochemicals in India have been exploring collaboration on a cookstove project. Kai has connected Prashanth Guru Srinivas from the Catalytic Think Tank Forum (and member of NITI Aayog) with Chinese cookstove companies. Prashanth was planning to visit China in early June to source cookstoves for India. One Chinese company provided Kai with their product catalog, which he would share with the Committee. MI should also look at attracting IB/CS manufacturers to join as members.

Action Items: MI staff to share draft methanol boiler standards and cookstove product catalog with the Committee for review and feedback.

B. Small-scale Methanol Technology (SSMT)

Dom shared with the Committee that SSMT was another application being considered, given its ease to move methanol through markets from stranded locations. Johnson Matthey recently shared information on its Compact Reforming Technology, which MI posted in Dropbox. Greater public and regulatory awareness was needed on SSMT. Larry Navin and Gina Armstrong had recently setup an

SSMT area on MI's web site. Further promotion would include sharing about SSMT during industry presentations, identifying opportunities for increased incentives for SSMT development, and encouraging SSMT companies to join MI.

V. LOWER PRIORITY ENGAGEMENT

A. Methanol Fuel Cells

MI has been working with Dick Co and the Solar Fuels Institute on a potential project proposal in response to a U.S. Department of Energy (US DOE) solicitation for methanol catalysts for fuel cell production. DOE recently issued a US\$39 million RFP for fuel cell and hydrogen technologies.

Kai mentioned that he had visited Palcan in April for the release of their first Chinese mini-fuel cell truck in Shanghai. Palcan is focusing on light- and medium-duty trucks and is similar to Serenergy's technology. Currently in China, fuel cell trucks can receive as much as an RMB 500,000 (US\$78,400) subsidy. Palcan might be able to get a subsidy under this program. Palcan is looking to develop a mini-truck fleet of 50 vehicles in the future. They have the capacity to produce as many as 500,000 methanol fuel cell units by 2020.

Kai also highlighted HYDROGEN, the largest Chinese provider of methanol fuel cells for cell phone towers. HYDROGEN has 50 projects currently in China, and more than 1,000 projects in the pipeline. The company is looking to have its methanol fuel cell cars certified in 2H-2018. HYDROGEN is keen to diversify and to export, including to India.

Dom mentioned that there are opportunities for increased methanol fuel cell use in a number of markets, including Hong Kong (green ferries), Japan (which lacks fuel cell stack production) and in Japan and Korea where the governments are both emphasizing on hydrogen and fuel cell developments.

Action Items: MI staff to invite Palcan to join MI's Board meeting in Singapore on November 9, and to present during the IMPCA Conference. MI would also invite Palcan to give a briefing on their methanol fuel cell technology and activities to the MDC in late June.

B. Methanol-to-Power (MTP)

Jason Chesko shared with the Committee that in the Caribbean, there are regulations seeking to phase out the use of heavy oil for electric power generation, and that there are some possible opportunities for MTP. Greg indicated that the MI Washington office had been in touch with Puerto Rican authorities to assess MTP opportunities there. Siemens and GE have mentioned methanol in their product catalogs. MI will talk to OEMs and to see if there are more opportunities for MTP in the Caribbean.

Eelco indicated that in Europe, there are also opportunities for MTP in smaller genset units. This is being driven by changes and legislation, and will apply to new gensets being sold on land.

C. Wastewater Treatment (WWT)

Dom highlighted that while WWT has been very successful in the US and Europe, there is limited interest in Asia Pacific/Middle East, due to a lack of denitrification focus among most regulators. MI will continue to monitor AP/ME regulatory policies and to assess where there are opportunities to

educate policymakers on the benefits of WWT use. MI would also encourage its members to look at using methanol as part of their onsite WWT production facilities.

D. Methanol-to-Hydrogen (M2H2)

Dom shared with the Committee that as hydrogen demand grows in a number of markets globally (e.g., China, Japan, Korea), methanol is becoming an important feedstock for hydrogen production. In April, Dom met with the New Energy and Industrial Technology Development Organization (NEDO) in Japan to discuss and encourage the use of methanol-based hydrogen and methanol for fuel cell use in Japan. Korea is another key market MI should be working with, in cities like Ulsan which have been designated as a hydrogen town.

In the United States, there is a hydrogen-at-scale (H2@Scale) program which is looking at how to provide hydrogen to retail fueling stations for fuel cell vehicles. MI believes delivering methanol to hydrogen fueling stations and reforming it onsite to hydrogen makes the most sense. In China, a number of teapot refineries are also using methanol. In the EU, there are also opportunities to supply methanol as a resource to hydrogen fueling stations.

Action Item: MI staff to develop a two-page M2H2 fact sheet by July 1.

VI. COMMITTEE PARTICIPATION

During the last MDC call, members had discussed about having quarterly presentations and an in-person meeting, to facilitate greater engagement among Committee members. Dom suggested the following quarterly presentations: Palcan on fuel cells (June 19), SPG Korea on methanol-to-hydrogen (Aug 28), and CGNESS/Peking University on IB/CS (Oct 30).

MI was trying to tie an in-person strategic planning meeting to a major industry event. The only remaining options were: July 13 in Hong Kong (alongside of Enmore's MEOH Week), August 24 in Kuala Lumpur (alongside APIC) or a 2019 strategic planning discussion in Singapore on Nov 9 (alongside of MI's Board meeting and IMPCA).

Action Items: MI staff to setup quarterly briefings and to discuss with MDC leadership on an in-person meeting and agenda options.



Draft Minutes – Marine Fuels Committee

Wednesday, May 16th, 2018

The conference call began at 9:30am US Eastern Time, and the following persons participated:

John Livorness, SABIC
Yousef Al-Dossary, SABIC
Fabian Tai, Methanex
Jason Chesko, Methanex
Christen Downie, Methanex
Stuart McCall, Methanex
Jennifer Hoppe, HELM AG
Ken Rieger, Atlantic Methanol
Anita Gajadhar, MHTL
Alice Chebabi, Proman
May Chen, Billion Miles
Greg Dolan, MI
Chris Chatterton, MI
Larry Navin, MI
Eelco Dekker, MI

I. Review and confirm Draft Minutes of February 26th, 2018 Conference Call

The draft minutes of the February 26th, 2018 Marine Fuels Committee (MFC) call were approved as sent.

II. Update on IMO's IGF Codes for LFL

Chris mentioned the delays with circulation of the Round 3 draft document, but Round 4 was expected to be received shortly (received May 29th) with a much shorter deadline for submission, of June 4th.

Based on discussions and reviews of other countries' comments to the draft IGF Code, it seems that most contributors are largely in agreement on most of the technical aspects.

Action Item: Chris has recently circulated Round 4 comments to the IGTF for review, with a submission deadline of June 4th

III. Update on LR Calculator & Safe Handling Guidelines

Chris provided an update for the group on the LR fuel comparison model which had been significantly delayed from its targeted launch of December, 2017, to March, 2018, and finally unveiled on May 15th. It has been renamed; Fuel Options Evaluator, with very positive feedback thus far, from both LR clients and independent users. MI provided funding of \$7,365 in 2017 for this project, and \$14,980 in 2018.

LR has run several client's vessels through the model with a high degree of accuracy and are speaking with Westfal-Larsen about the possibility to use ship data from one of the DF vessels for comparison.

The Evaluator and a coinciding op-ed received solid coverage across the marine media sector, picked up by most leading portals and trade journals.

Action Item: If data from a DF vessel can be obtained, then we will work on setting up a closed webinar with LR to run through the calculator with comparative ship data. Together with LR, will be looking to set up a public webinar in the near term

IV. Update on Communication Initiatives

Chris highlighted the communications work plan via Mariner Communications of the UK, to proactively deliver on key messages around methanol as a marine fuel. Thus far, the initiative has been very effective and we are now working on providing op-eds and press releases in Chinese for the MI Eng/Chi media page.

Action Item: Continue to address key issues affecting methanol as a marine fuel in the global press, as well as educating and informing on the potential benefits of methanol as a marine fuel

V. Pilot Projects

Eelco gave an overview of the various EU-based projects, to include:

- The May 3rd GreenPilot results workshop, which was co-funded by MI in 2016 for \$112k, was well-attended by industry and government professionals, with very positive results, both technically and economically. The final report for this project is forthcoming.
- Port of Rotterdam's potential pilot with Haverkamp. The project would call for four, 300kW engines with ScandiNAOS recently taking an interest in assisting on the design.
- SUMMETH project which recently completed, with a final report due shortly. Greg mentioned that the initial data indicates that methanol will be highly competitive for smaller vessels incorporating propulsion units within the 250 – 1,200 kW range. MI had provided \$68k in funding for this project.
- The Methaship program is also coming to a conclusion, with a final workshop on May 28th.
- HYMETH Ship project, a Horizon 2020 funded project, which will study both methanol to H₂ pathways and CO₂ re-injection for increased methanol production
- Interreg (aka; European Territorial Cooperation), an agency funded by the European Regional Development Fund, and together with interest from Sandfirden, a leader in marine engines and genset sales, service and supply, looking at inland waterway applications

Greg mentioned that SMTF is also readying a potential project for batteries + methanol FCs, which has raised approximately \$23k thus far and are working up additional funding proposals.

FIT is still planning to set up a pilot project in Fujian, also based on a fishing vessel and is still negotiating with Ministry of Agriculture for the conversion of LNG-fuelled fishing vessels to methanol.

Chris provided a brief overview of the NTU Singapore project, which looks to receive the 365kW WeiChai engine currently installed in the GreenPilot vessel in Sweden, in Singapore towards the end of 2018 after it has completed sea trials. FIT is working with NTU's technical team to design

the engine and auxiliary equipment skids. The draft project plan should be ready for circulation in June, with all project details and approximately S\$100k budget confirmed.

May also asked whether Keppel's "Blue Ocean" would join the NTU project with their emulsification technology, which Chris mentioned they are still discussing Blue Ocean's participation.

May updated the Group on the Billion Miles project, informing that the BM engines are CCS-classed for tugs already and that they are additionally looking into ABS as well. These are 380kW units suitable for 20-25m vessels (tugs mainly). MPA has been supportive of BM's backup genset packages of 100-200kW, which consume up to 250 litres/day. BM's main propulsion units should be ready by year end, 2018.

Greg mentioned that the US Maritime Administration, together with the Universities of Rochester and Delaware are interested in creating a project for Methanol as a Green Fuel for inland waterways, via an inland barge application. USMARAD is currently conducting an LCA GHG emission analysis for methanol, together with the above universities.

Greg encouraged and reiterated that all such pilot projects are open for members to participate in, with MI providing seed capital in some cases, as well as some project management responsibilities.

John also encouraged members to "step up" in supporting MI's pilot project initiatives as it is for their direct benefit.

Standards:

John inquired whether a standard had been confirmed for methanol as a marine fuel yet, such as IMPCA. Chris mentioned that this is being discussed at length at the CG level at IMO. For the moment, it is thought that IMPCA may be the most appropriate, as there are no real alternatives, for the moment. Greg suggested raising the issue with Trond Trenold from IMPCA, although members suggested that the producers look to consider this issue of a marine fuel specification before formally considering a proposal for a new IMPCA spec. Greg will be speaking informally with Trond at the IMPCA European Conference in early June.

May mentioned that BM is using both GB (China) and IMPCA standards, as their focus is on high-speed vessels, which are probably better suited to an IMPCA standard.

Emulsification:

Chris also noted that blending water with methanol may be considered as a means to achieve Tier III NOx requirements as a marine fuel, therefore, there is a possibility water may already be blended at the bunkering point, whether it is intentionally blended or a result of poor storage and hence water ingress.

John suggested any standard could be triggered by engine performance requirements and that markets would most likely determine any standards or required performance. Chris supported this idea and made reference to the bio-diesel market and its EN14214 standard in the mid-2000s, which more often than not saw bio-diesel traded as "non-compliant" and sold at a

discount. The discount reflecting the purchaser's individual fuel spec requirements and paying for what was deemed acceptable to them.

Greg and Fabian both mentioned MAN's experience with injecting water, up to 30% by volume, with positive results in reducing NOx. However, John suggested water is corrosive and lowers performance. May mentioned that based on their engine size, she supported water injection and that the vessels BM is working with are targeting 12 knots cruising speed, but a maximum of 15 knots with regularly scheduled maintenance of critical components (pistons, rings, rods, lower bearings, etc) at 500 hours. So, they would have better intel at that time and what the potential effects of emulsification may have on material compatibility.

Guidelines:

Jason inquired about the status of the Guidelines, which were originally set to be written by LR. However, after our experience with them on the Evaluator, it seems it would take too long to rely on them to do it. Therefore, Chris is now speaking with CCS to take a lead role in this project. It would entail forming a task force with external participants, elect a Project Leader, draft by the team, seek comments from industry leaders, final review, release and publish. This is a similar approach as International Association of Classification Societies would take (IACS). CCS is prepared to take a lead role in this work if we wish.

Availability:

Chris informed the committee that DNV GL was keen to reconstruct their LNGi portal to include LPG and methanol. They are seeking both data and sponsorship. Chris is speaking with IHS about providing data which they could update from 2015, for a similar joint study conducted together with MI. IHS seems to be looking to ensure they are included in any potential upside as well as protecting their data, which they consider as IP. Greg will be speaking with IHS at the IMPCA European Conference in June as follow up.

DNV GL is seeking \$20k to launch this project, which is to cover their costs. They are seeking a contribution from MI or an MI member towards this amount, by the time the project is finalized, which is targeted for August, provided they have the data from IHS or another source.

VI. Other:

Eelco is in receipt of the E4Tech study for the Dutch Biofuels Platform analysing biofuels in shipping, it was summarised that:

- *"Bio-methanol is potentially a very attractive option in terms of costs and GHG emissions reductions, and is commercially produced today from bio-methane. However, the production of bio-methanol via gasification of solid biomass is only at early commercial stage, and the production of methanol from renewable electricity is only at a large demonstration stage. Bio-methanol would be more attractive to the inland and short-sea shipping sectors as the 50% lower energy density of methanol (compared to incumbent fuels) limits the vessel's range, which is a major draw-back for deep-sea shipping."*

Chris briefly discussed the Budget, highlighting that we have not yet identified an external marine consultant, but suggested that some of this budget could be used to help defray the cost of the NTU pilot's project manager budget, or the project itself.

With no further business, the call ended at approximately 10:30am US Eastern Time



Draft Minutes – Product Stewardship Committee

Monday, June 4, 2018

The conference call began at 9:30am US Eastern Time, and the following persons participated:

Christian Meinecke, solvadis, (Vice-Chair)
Valerie Carlier, Methanex
Paul Moschell, AMPCO
Edson Jones, AMPCO
Greg Dolan, MI
Chris Chatterton, MI
Dom LaVigne, MI
Larry Navin, MI
Kai Zhao, MI

I. MINUTES

The draft minutes of the February 27, 2018 Product Stewardship Committee call were approved as sent.

II. TECHNICAL BULLETIN UPDATE

Discussion of 2018 Update of Methanol Safe Handling Video:

Larry Navin noted that in 2017 MI finished updating our *Methanol Safe Handling Manual*, which now is in its 4th Edition. To accompany the updated Manual, MI will produce an updated Safe Handling Video, as the existing video is dated. MI is working with Hadron Films of Vancouver, BC to produce this video at a cost of USD \$30,000. USD \$16,440 has been submitted to Hadron using previously budgeted 2017 funds and the balance will be paid upon completion of the project.

The Committee discussed the timing of the video moving forward, with Larry noting that this project has been ongoing for some time and needs to reach a conclusion, while also providing the best possible end product. Larry is in contact with Meg Mahoney at Methanex's Geismar, Louisiana facility to coordinate shooting dates and a detailed shooting schedule. Larry noted that MI hopes to be able to capture additional "B roll" footage of one of Methanex's dual-fuel vessels at the terminal which could be of use for our activities around promoting methanol as a marine fuel.

Action Items: 1) MI staff to coordinate with Methanex on dates to shoot the video; 2) MI staff to complete and release a new Methanol Safe Handling Video.

III. SAFETY SNAPSHOT NEWSLETTER

Larry noted that MI will shortly release a new edition of *Safety Snapshot* highlighting the full suite of safe handling information available on MI's website, including the *Safe Handling Manual's 4th Edition*, technical bulletins, and bootleg alcohol prevention information.

In addition to releasing *Safety Snapshot*, MI will also issue a press release detailing MI's full range of safe handling information, as well as promote the press release through our various social media channels, including LinkedIn, Twitter and Facebook.

Action Items: 1) MI staff to produce a new edition of Safety Snapshot Newsletter featuring the full range of safe handling information available on MI's website; 2) MI staff to issue a press release detailing MI's full range of safe handling information and promote it via our social media channels.

IV. GOVERNMENT & REGULATORY

A) EU REACH Restriction on Windshield Wiper Fluid (WWF)

Larry provided an overview of Poland's submission of a REACH restriction on the use of methanol in WWF in the EU which would limit methanol content to no more than 3% (later lowered to 0.6%) by volume. The initial proposal also included a restriction on methanol's use in denatured alcohol, but that portion of the restriction is no longer under consideration. Larry noted that MI had argued against the restriction at every available opportunity, but that it has now been finalized by the European Commission and published in the Official Journal of the EU. The restriction is set to take effect on May 9, 2019.

Larry noted that there are two additional options to further contest the restriction. The first, appealing to the EU Court of Justice, would be extremely costly, as legal representation would need to be secured, and would also have a low likelihood of success. The second, to contact the EU Ombudsman with our concerns about the process by which the restriction was considered and adopted by the Leg/Reg committee, requires no legal representation, and we can base our arguments off of those we have already made to the EU Commissioner for Better Regulation.

MI staff will solicit input from member companies who may have dealt with the Ombudsman before, and will research the process of lodging and appeal with the Ombudsman. We will have one year from the date of publication in the EU Official Journal to file with the Ombudsman.

Paul Moschell asked if MI had been able to quantify the amount of methanol which would be affected by the restriction. Christian Meinecke noted that most European countries have been using alcohols other than methanol in their WWF formulations, and that one of the few countries which had been using methanol was Poland, where WWF represents 20,000-30,000 tonnes of methanol demand at the most.

Action Item: MI staff to solicit input from member companies who may have had prior contact with the EU Ombudsman, and to research lodging an appeal with the Ombudsman

B) Government & Regulatory Affairs Matrix (AP/ME)

Dom LaVigne provided an overview of MI's efforts to complete a Government & Regulatory Affairs Matrix for the AP/ME regions. The matrix will allow MI to first map the amount of methanol in trade in various jurisdictions and the legislation and regulations currently in effect in those jurisdictions. With that information MI will be able to more proactively reach out and build effective relationships with decision making entities in the region. This will allow MI to more quickly receive notification of new regulatory or legislative challenges facing methanol, more effectively respond to such challenges, and best decide how to focus our resources. The matrix is expected to be completed by June 25th.

Action Items: 1) MI staff to keep committee informed of any updates to the EU REACH methanol restriction; 2) MI staff to complete a Government & Regulatory Affairs Matrix for the AP/ME regions.

VI. BOOTLEG ALCOHOL PREVENTION SUBCOMMITTEE (BAPS)

A. Technology: OD Test Strips – possible Apothecon collaboration

Dom LaVigne and Chris Chatterton shared with the committee an update on a fruitful meeting that they, along with Dr. Knut Hovde of Orphan Diagnostics (OD), held with Apothecon Pharmaceuticals in Gujarat, India in late April.

The meeting centered around the goal of securing a cost-effective supply of Fomepizole (i.e., US\$200 per dose, versus US\$1,000 per dose currently) and to begin distributing and using Fomepizole in Indonesia and elsewhere. Chris noted that Apothecon already has experience with distributing Fomepizole in India and that the drug has saved lives there. If a wider market for the drug can be assured, Apothecon believes they could produce the drug on a continuous basis which would allow them to lower the price to the US\$200 per dose target and still realize a profit.

During the committee's February 27th call, Sue Appleton brought the committee's attention to a company she had discovered, Neogen, that produces an "Alert for Methanol", which is a product designed to detect methanol contamination in spirits, beers and wine. Larry stated that he believes the Neogen product is one that the PSC/BAPS Committee has explored before, and that he would review past committee minutes and communications to determine the outcome of any discussions with Neogen.

Paul Moschell asked if MI staff had been able to follow up on Neogen and Larry reported that MI had indeed held discussions with an Oliva Radtke of Neogen in November of 2016 and had learned that the product was better suited for use under laboratory conditions rather than the purposes that MI would like to use it for, as a quick field test for the presence of methanol in spirits. Chris noted that Dr. Hovde had noted as well the difficulty of producing a stable test that isn't affected by temperature extremes, the presence of mixers with the alcohol, fruit juices, soda etc.

Action Item: 1) MI staff to continue following-up with Apothecon and Indonesian stakeholders, toward securing approval for OD's test strips and Fomepizole availability in a pilot project in selected hospitals and clinics in Indonesia.

**Methanol Institute
Board of Directors Letter Support
December 31, 2017**

	<u>2017</u>	<u>2016</u>	<u>2015</u>	<u>2014</u>	<u>2013</u>	<u>2012</u>	<u>2011</u>	<u>2010</u>	<u>2009</u>
Total Assets	1,842,302	1,553,567	2,147,085	2,060,226	1,936,405	1,873,553	1,827,324	1,989,798	1,389,123
Less: Property & Equipment, Net	(33,845)	(24,395)	(26,747)	(12,322)	(50,586)	(117,175)	(31,876)	(18,971)	(29,302)
Less: Total Liabilities	(810,245)	(567,330)	(1,022,973)	(672,013)	(713,053)	(996,695)	(830,741)	(1,361,438)	(797,110)
Add Back Cap Lease Obligation	5,922	8,570	11,132	688	4,617	8,570	12,541	1,195	4,720
Less: Amount Restricted for FDN-Alcohol Awareness	-	-	-	-	(43,000)				
Total Cash Reserves	1,004,134	970,412	1,108,497	1,376,579	1,134,383	768,253	977,248	610,584	567,431
Amount Rounded	1,004,000	970,000	1,108,000	1,376,000	1,134,000	768,000	977,000	611,000	567,000
Total Operating Expenses	1,977,180	2,245,488	2,355,987	1,975,480	1,599,659	1,920,613	1,388,764	1,667,516	1,695,040
Cash Reserve as a % of Total Operating Expenses	51%	43%	47%	70%	71%	40%	70%	37%	33%
Total Operating Net Income (Loss) (Rounded)	46,000	(138,000)	(264,000)	165,000	346,000	(120,000)	368,000	36,000	24,000
Depreciation Expense (Rounded)	12,000	11,000	9,000	39,000	69,000	40,000	10,000	10,000	8,000
Purchase of Property & Equipment - Cash	(9,000)	(8,500)		(2,000)	(2,000)	(18,000)	(8,775)	(2,500)	(14,465)
Purchase of Property & Equipment - Lease	(2,500)	(2,500)	(13,000)	(3,000)	(4,000)	(2,000)	(3,160)		
Leasehold Improvements - Cash	(12,500)					(109,000)			
Restricted Amt Submitted to FDN-Alcohol Awareness				43,000					
Amount Restricted for Project Hope			-	-	(43,000)				
Change in Reserves	34,000	(138,000)	(268,000)	242,000	366,000	(209,000)	366,000	44,000	18,000

Calculation is for Methanol Institute only, excluding the Foundation.

April 30, 2018

ASSETS

Current Assets

Checking/Savings	
Checking-SunTrust	906,846
United Bank	302,832
Checking-Singapore	102,761
United Investment Account	<u>752,673</u>

Total Checking/Savings 2,065,112

Accounts Receivable	1,452
Prepaid Expenses	<u>27,262</u>

Total Current Assets 2,093,826

Fixed Assets

Fixed Assets	
Automobiles	0
Equipment	112,016
Leasehold Improvements-Singapore	12,499
Accumulated Depreciation	<u>-96,570</u>
Fixed Assets Net of Depreciation	<u>27,945</u>

Other Assets

Security Deposits	<u>16,570</u>
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TOTAL ASSETS 2,138,341

LIABILITIES & NET ASSETS

Current Liabilities	
Payroll Liabilities	540
Accounts Payable and Accrued Expenses	<u>76,735</u>

Total Accounts Payable and Accrued Expenses 77,275

Other Liabilities	
Deferred Rent Abatement	9,636
Capital Lease-Copier	<u>4,866</u>
Total Other Liabilities	14,502

Total Liabilities 91,777

Net Assets

Net Assets-Unrestricted	1,042,564
Net Assets-Cash Reserves	<u>1,004,000</u>

Total Net Assets 2,046,564

TOTAL LIABILITIES & NET ASSETS 2,138,341

As of April 30, 2018

Description	<u>2017 Budget</u>	<u>2017 Actual</u>	<u>2018 Budget</u>	<u>2018 YTD Actual</u>	<u>% of Actual to Budget</u>
TOTAL INCOME:	2,032,000	2,023,001	2,018,000	1,723,520	85%
EXPENSES:					
Program Expenses	426,500	402,464	435,280	70,641	16%
Operating Exp	387,010	351,194	344,750	127,183	37%
Payroll	1,039,780	1,039,897	1,080,300	461,503	43%
Travel	163,750	183,625	157,500	49,686	32%
TOTAL EXPENSE	2,017,040	1,977,180	2,017,830	709,013	35%
Income/(expense)	14,960	45,821	170	1,014,507	

INCOME DETAIL
As of April 30, 2018

Description	2017 Budget	2017 Actual	2018 Budget	2018 YTD Actual	% of Actual to Budget
Dues	2,030,000	1,937,587	2,015,000	1,717,500	85%
Interest	2,000	2,561	3,000	3,442	115%
Other-Proceeds from sale of car				1,200	
Methanol Forum Proceeds	-	55,818		-	
Singapore Tax Refund	-	27,035		1,378	
TOTAL INCOME	2,032,000	2,023,001	2,018,000	1,723,520	85%

DUES INCOME DETAIL

Atlantic Methanol Co.	100,000	100,000	100,000	100,000	100%
Azelis Canada, Inc./UNIPLEX	15,000	15,000	15,000	15,000	100%
Billion Miles	15,000	15,000	15,000	15,000	100%
BP Chemicals	50,000		50,000		
Carbon Recycling	15,000	7,500	15,000	-	
Clariant	15,000	13,837	15,000	-	
Coogee Energy	15,000	15,000	15,000	15,000	100%
Ecofuel SpA	50,000	50,000	50,000	50,000	100%
Enerkem, Inc.	15,000	15,000	15,000	-	
Fuel Freedom Foundation	15,000	15,000	15,000	15,000	100%
Fuel Injection Technologies	15,000	15,000	15,000	15,000	100%
G2XEnergy	50,000	50,000	50,000	50,000	100%
Haldor Topsoe	15,000	15,000	15,000	15,000	100%
Helm AG	15,000	15,000	15,000	15,000	100%
International Matex	15,000	15,000	15,000	15,000	100%
IGP Methanol				7,500	
Johnson-Matthey	50,000	50,000	50,000	50,000	100%
Lanxess	15,000		-		
Lebzi Halal	-	15,000	15,000	-	
Metafrax	50,000	50,000	50,000	50,000	100%
Methanex	200,000	200,000	200,000	200,000	100%
MHTL	200,000	200,000	200,000	100,000	50%
Mitsubishi Gas & Chemical	100,000	100,000	100,000	100,000	100%
Mitsubishi International Corp.	50,000	50,000	50,000	50,000	100%
Mitsui	100,000	100,000	100,000	100,000	100%
Mitsui OSK	15,000	15,000	15,000	15,000	100%
Muntajat		11,250	15,000	-	
NFP		7,500	15,000	15,000	100%
NW Innovation Works	15,000	15,000	15,000	15,000	100%
Oberon	15,000		-		
OCI	100,000	100,000	100,000	100,000	100%
Oman Methanol	100,000	100,000	100,000	100,000	100%
Oorja Protonics	15,000		-		
Petronas	100,000	100,000	100,000	100,000	100%
QAFAC	100,000	100,000	100,000	100,000	100%
SABIC Asia Pacific.	200,000	200,000	200,000	200,000	100%
Salalah Methanol	50,000	50,000	50,000	-	
Sipchem	50,000	50,000	50,000	50,000	100%
Solvadis	15,000	15,000	15,000	15,000	100%
Southern Chemical Corp.	15,000	15,000	15,000	15,000	100%
SCC Distribution	15,000		-		
Tricon Energy	15,000	15,000	15,000	-	
UCC		7,500	15,000	-	
Vitol	15,000		-		
Vitusa	15,000	15,000	15,000	15,000	100%
Total	2,030,000	1,937,587	2,015,000	1,717,500	85%

PROGRAM EXPENSES
As of April 28, 2018

Description	2017 Budget	2017 Actual	2018 Budget	2018 YTD Actual	% of Actual to Budget
I. Legislative/Regulatory Programs					
ACC Formaldehyde Panel			10,000		0%
Poland Consultant	1,500	1,462			
Sub-Total Legislative /Regulatory Programs	1,500	1,462	10,000	-	0%
II. Product Stewardship					
Safe Handling Video	20,000	16,425	13,500		0%
Technical Bulletins	1,000		1,000		0%
Translation Svcs/Distribution	2,000		1,000		0%
BAPS	45,000	13,523			
Orphan Diagnostics		30,000			
Foundation Search	1,800	1,800		1,800	
Safety Webinar			2,000		0%
Sub-Total Product Stewardship	69,800	61,748	17,500	1,800	10%
III. Market Development					
Methanol Fuel Cell Innovation Alliance	5,000				
Fuel Cell & H2 Association		2,500			
Renewable Methanol Report			25,500		
China Boiler Standard		14,700	5,000		0%
Sub-Total Market Development	5,000	17,200	30,500	-	0%
IV. Global Fuel Blending					
E4 Tech	25,000				
Sub-Total Global Fuel Blending	25,000	-	-	-	0%
V. Marine Fuels					
IBIA		1,345	1,280		0%
DGAC		3,000	3,000	3,000	100%
ScandiNaos Marine Fuels Pilot Project	25,000				
Marine Events Exhibition			10,000		0%
Marine Pilot Projects			20,000	6,626	33%
Technical Consultant Resource			16,500		0%
PR Consultant Resource			27,000		0%
Marine Fuel Model		7,365	15,000		0%
Sub-Total Marine Fuels	25,000	11,710	92,780	9,626	10%
VI. Regional Representative Offices					
Chief Representative Europe	140,000	141,716	125,000	42,852	34%
Brussels Office Support	7,200	6,185	10,000	663	7%
China Stakeholder Engagement	10,000	10,943	12,000	6,000	50%
Chief Representative China	65,000	14,880	80,000		0%
China Support	12,000	3,000	20,000		0%
Sub-Total Regional Representative Offices	234,200	176,724	247,000	49,515	20%
VII. Public Affairs					
Printing Services	7,500	4,650	5,000	2,228	45%
FFV Demo Expenses	2,000	3,325	4,500	2,039	45%
Web Site	10,000	1,614	3,000	1,767	59%
Industry Conferences-US	3,000	2,968	3,000	719	24%
Industry Conferences-Sing	10,000	10,204	6,000	2,387	40%
Industry Conferences-China Rep	1,500	920	3,000	-	0%
Industry Conferences - EU Rep			2,000	-	0%
India Methanol Seminar		3,290			
Translation Svc-US	1,500	170			
Translation Svc- Sing	15,000	10,325	4,500	560	12%
Translation Svc - China			5,000	-	0%
Methanol Policy Forum		45,297			
ADI Methanol Study		12,000			
Mercer-KPI Workshop		32,303			
Promotional Items	1,500	882	1,500		0%
Intern- Sing	10,000	5,672			
Intern- US	4,000				
Sub-Total Public Affairs	66,000	133,620	37,500	9,700	26%
Total Program Costs	426,500	402,464	435,280	70,641	16%

OPERATING EXPENSE DETAIL

As of April 30, 2018

Description	2017 Budget	2017 Actual	2018 Budget	2018 YTD Actual	% of Actual to Budget
GENERAL:					
Board Meeting Costs	6,000	7,696	2,000		0%
Electronic board books	11,950	11,300	12,000	12,091	101%
Subscriptions/Publications	20,000	21,307	18,000	2,527	14%
Currency Translation (Gain)/Loss		3,763		1,407	
Database	1,500	958			
Unrealized Loss on Investments		1,215		178	
US OFFICE:					
Legal		992	2,000	452	23%
Accounting and Audit	42,000	49,742	42,000	21,333	51%
Bank Charges and Wiring Fees	6,000	6,170	2,000	2,374	119%
Postage Equipment	1,500	1,570	250	248	99%
Equip Maint/Software/IT	13,500	13,040	10,000	5,705	57%
Depreciation and Amortization	8,000	7,562	8,000	2,500	31%
Corporate Insurance	12,500	7,749	12,500	7,568	61%
Workers Comp Insurance	2,500	2,207	2,500	2,135	85%
Property Taxes	1,500	860	500		0%
Office Supplies	3,500	2,219	3,000	1,249	42%
Cable Expense	1,500	1,114	1,500	417	28%
Cable/Internet Expense	3,000	2,468	2,000	800	40%
Postage and Delivery	3,000	2,686	2,500	256	10%
Printing	5,000	666	3,000	607	20%
Rent	49,000	49,632	51,000	15,057	30%
Telephone	15,000	11,357	11,000	2,853	26%
Other Office Expenses	4,000	5,471	2,000	1,342	67%
SINGAPORE:					
Legal			1,000		0%
Accounting and Audit	40,450	33,839	50,000	18,340	37%
Bank Charges and Wiring Fees	600	86	500	237	47%
Equip Maint/Software/IT	13,300	8,004	12,000	4,308	36%
Depreciation and Amortization	3,000	4,664	4,000	1,250	31%
Insurance	5,000	4,648	5,000	2,072	41%
Office Supplies	3,200	2,000	3,000	477	16%
Postage and Delivery	5,300	1,612	2,000	257	13%
Printing	5,500	3,591	4,000	961	24%
Rent	66,650	56,969	27,500	9,300	34%
Telephone	13,700	17,409	12,000	2,565	21%
Other Office Expenses	3,500	6,548	3,000	2,916	97%
Corporate Income Taxes	7,360	-			
CHINA:					
Legal			10,000	3,401	34%
Accounting	3,000		20,000		0%
Printing	2,500	80	2,000		0%
Other Office Expenses	3,000		1,000		0%
Total Operating Expenses	387,010	351,194	344,750	127,183	37%

PAYROLL
As of April 30, 2018

<u>Description</u>	<u>2017 Budget</u>	<u>2017 Actual</u>	<u>2018 Budget</u>	<u>2018 YTD Actual</u>	<u>% of Actual to Budget</u>
Payroll					
Payroll - US	392,650	388,090	404,000	132,977	33%
Payroll -Sing	339,920	347,821	347,300	110,320	32%
Other Benefits	68,000	78,521	68,000	45,998	68%
Bonus	73,110	73,485	85,000	84,855	100%
Medical Insuranc	77,500	71,457	84,000	46,948	56%
Payroll Taxes	36,000	42,628	37,000	18,493	50%
Life / Disability Ir	17,000	14,430	18,000	4,973	28%
Retirement Func	35,600	23,465	37,000	16,939	46%
Payroll	<u>1,039,780</u>	<u>1,039,897</u>	<u>1,080,300</u>	<u>461,503</u>	<u>43%</u>

TRAVEL EXPENSE DETAIL
As of April 30, 2018

<u>Description:</u>	<u>2017 Budget</u>	<u>2017 Actual</u>	<u>2018 Budget</u>	<u>2018 YTD Actual</u>	<u>% of Actual to Budget</u>
Travel					
CEO-Washington	50,000	54,624	50,000	15,434	31%
COO-Sing	50,000	63,619	50,000	6,406	13%
Dir of Gov't Affairs/PA-Sing	40,000	42,975	40,000	23,836	60%
Gov't/PA Mgr- Wash	5,000	1,220	4,000	1,630	41%
Exec Assistant-Sing	1,500			-	
China Chief Rep	10,000	13,374	7,000	1,022	15%
Local Transportation-Sing	3,000	2,848	3,000	703	23%
Entertainment:					
CEO-Washington	1,000	294	1,000	-	0%
COO-Sing	1,000	1,776	1,000	232	23%
Dir of Gov't Affairs/PA-Sing	1,000	1,708	1,000	423	42%
Gov't/PA Mgr- Wash	500	583	500	-	0%
Gov Mrg- Sing	400			-	
China Rep	350	604		-	
Travel & Entertainment	163,750	183,625	157,500	49,686	32%