

## Meeting Participants

### Council Delegates

Denis Ranque, France, CAETS President	Oh-Kyong Kwon, Korea
Manuel Solanet, Argentina, CAETS Past-President	Monica Barrera, Mexico (virtual)
Nevin Duic, Croatia, CAETS President-Elect	Lucas Noldus, Netherlands
Ruth David, United States, CAETS Secretary/Treasurer	Cather Simpson, New Zealand
Hugh Bradlow, Australia	Peter Onwualu, Nigeria
Christine Malcorps, Belgium	Jameel Ahmed Khan, Pakistan (virtual)
Robert Crawhall, Canada	Biljana Stojanovic, Serbia (virtual)
Xiaohong LI, China (virtual)	TC Madikane, South Africa
Martin Bech, Denmark	Jaime Dominguez, Spain
Panu Nykanen, Finland	Tuula Teeri, Sweden
Karen Wagner, Germany	Rita Hofmann-Sievert, Switzerland
Norbert Babcsan, Hungary	Shane McHugh, United Kingdom
Indranil Manna, India	James Tien, United States
Tom Leahy, Ireland	Adriana Gambogi, Uruguay
Hideaki Koizumi, Japan	

### Other Attendees

Oscar Vignart, Argentina	Yasushi Taguchi, Japan
Kylie Walker, Australia	Yoshikazu Nakajima, Japan
Cath Latham, Australia	Chinho Park, Korea
Carrie Hillyard, Australia	Shinhye Kim, Korea
Jesse Zhu, Canada	Chanmi Lee, Korea
Yu Zhu, China (virtual)	Inkyu Lee, Korea
Tian Qi, China (virtual)	Chae-Ok Yun, Korea
Lin Huang, China (virtual)	Roel Meeuwesse, Netherlands (virtual)
Chen Wang, China (virtual)	Christy Adelowo, Nigeria
Vedran Mornar, Croatia	Felix Reinders, South Africa
Gerard Creuzet, France	Bob Pullen, South Africa
Yves Bamberger, France	Elin Elliot, Sweden
Shobhit Rai, India	Peter Guthrie, United Kingdom
GK Ananthasuresh, India	Meredith Ettridge, United Kingdom
Sharmila Mande, India	Julio Fernandez, Uruguay (virtual)

## Meeting Minutes

CAETS President Denis Ranque opened the meeting at 1400 by welcoming Council Delegates and other attendees who were physically present as well as virtual participants.

### 1. **Action:** Approval of Agenda

The meeting agenda, as amended on 28 September 2022, was approved as presented.

2. **Action:** Approval of Council Minutes of 24 September 2021  
Three additional virtual attendees (Nils Andersen, Denmark; Martin Bech, Denmark; Wang Chen, China) were added to the 2021 Council Minutes; the meeting minutes were approved.
3. Report from the 26 September 2022 Board Meeting
  - a) Information: Strategy Implementation Update  
The President summarized the Board discussion regarding Strategy implementation, noting that while the document approved in 2021 provides good structure and process there remains a need to focus on content. Key questions discussed included: *What can CAETS do for its members? What are the priority topics and how might we select?* He emphasized the need to mobilize CAETS year-round, engaging fellows from the bottom-up, to supplement the more top-down nature of annual meetings. He reported that member academies would be polled to share their top programmatic priorities as a way to identify topics of common interest that CAETS may wish to pursue collectively.
  - b) Information: Increasing Member Engagement  
The President reported that the Board had discussed the need to learn from the experiences of the Energy Working Group during development of its report. He summarized remarks from Yves Bamberger, who led that effort. Bamberger recommended building (and sustaining) CAETS communities of Fellows around specific topics, thus extending the reach of working groups into member academy populations. The President also noted that increased engagement between CAETS-sanctioned activities and the Board and Council is needed.
  - c) Information: Operating Guidelines Updates  
CAETS Secretary Ruth David reported that the CAETS Operating Guidelines would be updated in a number of areas based on feedback and experience since approved in 2021. Key changes include: 1) Establishment of an annual poll of member academy programmatic priorities as well as their interest in existing CAETS-sanctioned activities. 2) Encourage Working Groups to select both a Chair and a Deputy Chair to succeed the Chair in order to maintain continuity. 3) Guidance to Working Groups indicating that they may seek resources to support specific activities but may not commit funds absent prior approval by the Secretariat. 4) Charging Working Groups to develop communications plans that incorporate best practices for effective communications. 5) Implementation of a Conflict-of-Interest Policy for CAETS-sanctioned activities. 6) Modify the Communications Committee charter to include addition of guidance on effective communications in CAETS Style Guide.
  - d) Information/Discussion: Dues Structure Analysis  
CAETS Treasurer Ruth David reported that after discussion of two options for modification of the CAETS dues structure, the Board recommended an approach using three World Bank indicators: Gross Domestic Product (GDP), GDP per Capita Purchasing Power Parity (PPP), and High-Technology Exports. A 3-year average of the most recent data was used for each indicator. The normalized indicators were computationally combined in an algorithm (Sum = GDP Norm +

0.15(GDP/Capita PPP Norm + High-Tech Exports Norm), and ordered from highest to lowest. Break-points were identified to define 3 levels of dues: \$6500, \$3500, \$1500. Details of the recommended dues structure were passed out to in-person participants and projected for virtual participants. The Treasurer noted that the methodology was based on publicly available data and was repeatable; expectation was that, if approved, the approach would be used to review the dues schedule every 5 years going forward and also would be used to establish initial dues for newly elected member academies.

Several Council members expressed concerns about the sizeable increase in dues payable; one observed that the wealth of the country does not indicate the wealth of the academy. Others questioned the use of GDP as an indicator. It was noted that under the proposed structure dues would increase for 28 member academies and decrease for 3 member academies. Increases ranged from \$320 to \$3410, with most academies (23/28) increasing by \$470 or less

After discussion, it was agreed that annual increases should be limited to \$470, and that for those academies whose dues were decreasing, the annual reduction would also be limited to \$470. This approach was approved by a majority of the members present (physically or virtually) and voting; there were no dissenting votes.

e) Information: 2021 Financial Audit Report

The Treasurer reported the 2021 Financial Audit had been completed with no issues, and that Frank Behrendt, acatech, had served as Chair of the Audit Committee. A copy of the summary statements was provided in the Council materials. She noted that Operating Expenses had been well below the Operating budget for several years due primarily to the lack of travel. As a result, CAETS net assets had grown to \$343, 673; the Board recommended that approximately \$200,000 of the reserve funds be moved to a low-risk, liquid investment account.

f) Information: 2022 Financial Status

The Treasurer noted that 2022 Operating Expenses were projected to slightly underrun the Operating Budget, but there remained some uncertainty due to unbudgeted expenses relating to editorial support for the CAETS Energy Report. NATF provided an estimate in the amount of 30,000 Euros for editing the report (including annexes); that expense will be equally split among NATF, CAETS, and US NAE. Additional expenses may be incurred in development of derivative products to support communications with targeted audiences.

g) Information: 2023 Operating Budget

The Treasurer reported that the Board had approved the 2023 Operating Budget as presented subject to Council approval of the CAETS Communications Prize line item in the amount of \$5,000. This item will be addressed in agenda item 9 (Communications Committee).

4. Administrative Items

a) Information: InterAcademy Partnership

The Secretary reported that the InterAcademy Partnership (IAP), which is a global network of science, engineering, and medicine academies, had announced a new organizational structure. Previously IAP had operated with three executive committees: IAP Science, IAP Health, and

Board of IAP Policy; CAETS was an ex-officio member of the IAP Policy Board. Those three committees are being replaced by a single Advisory Board, and CAETS is invited to participate as a non-voting observer. The Secretary will attend (virtually) the IAP General Assembly on 3 November 2022 and will share any relevant information.

b) **Information:** Election of 2022 CAETS President

The Secretary reported that Denis Ranque was elected as 2022 CAETS President via email vote with unanimous consent by 29 of the 31 member academies (2 academies did not respond); results were confirmed on 30 June 2022.

c) **Action:** Approval of 2023 Rotation Schedule

The Secretary briefly discussed the 2023 Rotation Schedule, noting several changes. Meeting host designations were altered as the United States negotiated a swap with Germany, and the Czech Republic negotiated a swap with Australia. Meeting host designees have been confirmed for 2023 (Croatia), 2024 (Finland), 2025 (Australia), and 2026 (Germany). She also noted that the following members will be asked to nominate Board Members in the next cycle (to be elected during 2023 Annual Meetings): Australia (2024 President-Elect); Slovenia (2024-2025 Board); China (2024-2025 Board); Serbia (2024-2025 Board); Sweden (2024-2025 Board). The Rotation Schedule was approved as presented.

d) **Action:** Approval of 2023-2024 CAETS Dues Schedule

The Treasurer noted that the Dues Schedule provided in Council materials was no longer valid given the Council decision to adopt the new dues schedule beginning in 2024, with 2023 dues remaining the same as for 2022. The amended schedule, as described in item 3 d) will be disseminated following the meeting.

e) **Action:** Election of Board Members

The Secretary noted two additional elections were added to the traditional slate of nominees: Vedran Mornar (Croatia) as 2023 CAETS President to succeed Neven Duic, who was elected in 2021 as 2022 CAETS President-Elect; and Cather Simpson (New Zealand), to serve on the CAETS Board (2022-2023), replacing Geoff Chase who was elected to this term in 2021 but is unable to serve. Regular nominees include: Mika Hannula (Finland) for 2023 President-Elect; and Nadine Aubrey (United States), Lucas Noldus (Netherlands), Andras Sollosi-Nagy (Hungary), Jaime Dominguez (Spain) for 2023-2024 Board Members. Biographical information for all nominees was provided in the Council materials. All nominees were elected to the designated positions.

f) **Information:** Future CAETS Meeting Schedule

The Secretary noted the dates for CAETS 2023 (9-11 October) in Zagreb, Croatia and CAETS 2024 (1-4 July) in Helsinki, Finland. Additional information was provided under agenda items 7 and 8.

5. **Information:** Energy Working Group Report

Yves Bamberger (NATF), Chair of the Energy WG, provided an overview of the 2022 Energy Report titled "Towards Low-GHG Emissions From Energy Use In Selected Sectors." He noted that the report focused on already available and affordable technologies for deployment and included comments, messages and recommendations to advise policymakers, industry and academic leaders. The report

is comprised of 7 sector-specific chapters, each describing the current situation of the sector and available solutions to reduce GHG emissions together with perspectives, case studies, key messages and recommendations. An opening chapter sets the scene, describing the central role of low-carbon electrification. And a closing chapter provides cross-cutting observations and conclusions. He concluded by identifying high-level target audiences, noting that another meeting was planned for late October in order to refine the list and also to prioritize the next topic(s) to be undertaken by the CAETS Energy Community.

6. Information: CAETS 2022 Statement: Key Themes

Gerard Creuzet (NATF) briefly summarized the key themes that will form the basis for a CAETS Statement stemming from the CAETS 2022 technical symposium on “Engineering a better world – Breakthrough Technologies for Healthcare.” A draft statement will be provided within 2 weeks from the close of the annual meetings and will be circulated for member academy review and endorsement.

7. Information: CAETS 2023 Status Update – Zagreb, Croatia

Nevin Duic (HATZ), CAETS President-Elect and Chair of CAETS 2023, provided a brief overview of plans for the 2023 annual meetings which will be held in Zagreb, Croatia from 9-11 October 2023. He reported that the theme selected for the technical symposium is “e<sup>2</sup>-mobility: Solutions and Opportunities.” Main topics will include electrification of transport and integration with energy systems; batteries—the core technology; hydrogen, fuel cells and electrofuels; autonomous driving; and modal shift—roads, railways, ships or planes? Meetings will occur over 2 days, with a technical visit planned for day 3.

8. Information: CAETS 2024 Status Update – Helsinki, Finland

Panu Nykanen (CoFA), Secretary General of the Finnish Academy of Technical Sciences, provided a brief summary of plans for the 2024 annual meetings which will be held in Helsinki, Finland from 1-4 July 2024. He reported that the theme selected for the technical symposium is “Engineering a better world: Carbon Neutral Technologies and Society.” Key topics include technology; industry; agriculture and forestry; social and economic impact of new technologies; and global questions.

9. Information/**Action**: Communications Committee

Hugh Bradlow (ATSE), Chair of the CAETS Communications Committee, reported that the committee’s current focus was on two priority topics: CAETS Communications Prizes and CAETS Reports and Statements.

He reminded the Council that the purpose of the Communications Prizes was two-fold: inspire young people to recognize engineering as an exciting and meaningful career; and remind policy makers and the general public of the importance of engineering in their lives. The program is currently structured with 2 separate prizes—Engineering Success Stories and High Potential Innovation—and solicits short, jargon-free videos that explain the problem, what is clever about the solution, and why it matters to people. The program has been in place for two years yet the number of entries remains low, potentially because there is no financial incentive. The committee therefore decided to collapse the two prize categories into one that covers both high potential innovations

and accomplished results. Additionally, they propose to conclude the annual competition approximately 3 months in advance of the CAETS annual meetings and provide a travel stipend of up to \$5,000 from CAETS funds to enable the winner to travel to the annual symposium to make a presentation (in addition to screening of their video). Entries will be limited to 1 per member academy, or 2 if they are different genders. The 5-minute limit in length remains; videos can be ‘repurposed’ from other videos so long as they meet the criteria; and past judges are requested to be ‘mentors’ for entrants. After discussion, the Council approved the commitment of \$5,000 in the annual Operating Budget to support the Communications Prize.

He also observed that CAETS had produced 4 statements over the past 4 years, only 1 of which was developed by a working group (2021 Statement on COP26—SDG WG). He recommended that WGs should extract key messages and/or recommendations from their reports and create a derivative product (less than 2 pages) for broad distribution as a CAETS Statement. Additional derivative reports should be developed for specific audiences. In each case, the focus should be:

- What 1 to 3 messages do you want the public/policy makers to remember?
- What 1 to 3 recommendations would you really like to see adopted by policy makers?
- “SMART” recommendations—Specific, Measurable, Actionable, Responsibility, Timely

10. Information: Engineering for the Sustainable Development Goals (SDGs)

Meredith Ettridge (RAEng), provided a report from the Engineering for the SDGs WG on behalf of David Thomlinson (RAEng), who chairs that WG. She noted that the WG has continued to meet as a forum for cross-academy exchange on how engineers can help achieve SDGs, with meetings featuring presentations from member academies and discussions on CAETS Statements. She noted that the WG had drafted the COP26 CAETS Statement published last fall and is developing a proposal for a follow-up statement promoting the practical role of engineering in addressing the SDGs.

The WG has established as its overall purpose the promotion and advancement of the pivotal role of engineering in achieving the UN SDGs. Additionally, the WG established a primary goal to stimulate exchange between CAETS member academies on respective actions and initiatives that address the UN SDGs, and a secondary goal to inform CAETS’ voice on sustainability and the SDGs by developing external-facing outputs, such as statements, to be published by CAETS. The WG currently includes representation from 13 member academies.

11. Information: Diversity and Inclusion (D&I) Working Group

Shane McHugh (RAEng) and Kylie Walker (ATSE) summarized the activities of the Diversity & Inclusion WG, noting that member academies had been surveyed regarding activities in the field of D&I; 13 full responses were received. The WG met on 26 September to examine the results and intend to use this survey data as a baseline for revitalizing the D&I WG. *A key question is what can be done to build capacity in CAETS and its member academies to meet CAETS objective to promote diversity and inclusion in the global engineering profession.*

The WG developed a set of priorities for the coming year to include:

- Improved network: CAETS academies will be asked to produce an updated list of D&I contacts, including where possible those responsible for D&I within academy governance.

- Community of Practice to be set up linking senior responsible stakeholders for D&I. Regular virtual meetings will be held – potential topics include D&I monitoring, making awards more inclusive, D&I for staff, moving from D&I in Fellowship to D&I of engineering profession, D&I for indigenous/first nation people, D&I funding.
- Database of CAETS academies' D&I strategies, workplans, policy papers, to be created as a resource on the CAETS website.
- Collection of baseline D&I data on membership from each member academy. (This is not comparative as academies have different constraints; the purpose is to support academies in putting processes in place to collect data, measure their progress, and use data to identify challenges/issues.
- Survey to be repeated annually to understand change in CAETS academies' activities on D&I.

12. Information: Engineering Education Working Group

Jesse ZHU (CAE-Canada), reported that the WG met on 26 September to discuss topics including a charter for the WG, administrative items, an action plan for 2022-2023, and a possible on-line gathering (symposium) among member academies. The proposed WG charter is: "The CAETS WG in Engineering Education will seek to help CAETS in contributing to continuous improvement and modernization of engineering education and practice internationally and promoting ethics in engineering education, research, and practice." (*This charter combines 2 of CAETS' Objectives.*)

He reported efforts were continuing to identify a Vice Chair for the WG, that an email group had been set up to support more effective communications, that quarterly meetings were intended, and that additional CAETS member academies would be invited to participate in the WG.

The intended focus for the 2022-2023 cycle includes asking academies to present their view on what the academies can do to promote Engineering Education and discussing how to strengthen CAETS position in Engineering Education.

13. Information: A Global Review of the Engineering Response to COVID-19

Peter Guthrie (RAEng), summarized the results from a study conducted by Engineering X, an international collaboration founded by the Royal Academy of Engineering and Lloyd's Register Foundation, which generated a report titled "Global Review of the Engineering Response to COVID-19: lessons learned for preparedness and resilience."

He noted that the report is anchored by 6 major challenges faced during the pandemic in which engineers made key contributions: 1) Driving value from data; 2) Racing the virus; 3) Designing for equal access; 4) Ramping up production; 5) Streamlining delivery; and 6) Strengthening society's systems. Additional information is available at: <https://raeng.org.uk/news/landmark-global-review-of-the-engineering-response-to-covid-19-calls-for-action-to-ensure-future-pandemic-resilience>

14. New Business

The President invited new business from the floor. Hearing none, he reiterated the need for year-round operations for CAETS, engagement of a broader base of participants, and an increase in public communications, including reports by member academies (which need not always be in English).

15. Recognition of CAETS Service

The President presented 2022 Service Recognition Awards to the following individuals:

- Manuel Solanet, Academia Nacional de Ingenieria of Argentina, for service as 2020 President-Elect, 2021 CAETS President, and 2022 CAETS Past-President
- Elisabeth Monard, Royal Belgian Academy Council of Applied Sciences, for service as a CAETS Board Member 2021-2022
- Ulrich Wagner, National Academy of Science and Engineering of Germany, for service as a CAETS Board Member 2021-2022
- Rita Hofmann-Sievert, Swiss Academy of Engineering Sciences, for service as a CAETS Board Member 2021-2022
- Nasim Khan, Pakistan Academy of Engineering, for service as a CAETS Board Member 2021-2022

There being no further business, the Council Meeting was adjourned by the President at 1815.