

**THE INTERNATIONAL ASSOCIATION
FOR THE PROPERTIES OF
WATER AND STEAM**

MEMBERS

Australia
Britain and Ireland
Canada
Czech Republic
Germany and Switzerland
Italy
Japan
New Zealand
NORDIC (Denmark, Finland, Norway, Sweden)
United States of America

ASSOCIATE MEMBERS

Argentina and Brazil
China
Egypt
France
Greece
India
Israel
The Netherlands

EXECUTIVE SECRETARY

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Minutes of the Meetings

of the

Executive Committee

of the

International Association for the Properties of

Water and Steam

**Boulder, Colorado, USA
23rd and 28th June 2024**

Prepared by Barry Dooley



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23rd and 28th June 2024

Plenary Session. Sunday 23rd June 2024. 9:00am

At 9:00am the President of IAPWS, Dr. Dan Friend welcomed the Executive Committee (EC) and other IAPWS members to the EC Meeting. He first introduced Dr. Allan Harvey, Chair of the US National Committee and co-host of the IAPWS/ICPWS and STP (Symposium on Thermophysical Properties) conferences. The President then officially opened the 2024 EC Meeting by introducing the National Delegates. All of the IAPWS Members were in attendance but none of the Associate Member countries. In total there were 22 people assembled for the EC meeting.

1. Adoption of Agenda

Provisional agendas had been e-mailed to all IAPWS members by the Executive Secretary in April 2024. The final agenda forms Attachment 1 of these minutes.

2. IAPWS Business and Appointment of Committees

2.1 IAPWS Business Since Last EC Meeting in Turin, Italy, September 2023

The Executive Secretary reported that during the year since the last IAPWS EC Meeting in Turin only one document on the *Revised Release on the Ionization Constant of H₂O* had been forwarded to IAPWS members for review or approval. By the 6th June 2024 no comments or objections had been made so the Revised Release became an official IAPWS document and has been posted on the IAPWS website.

The Executive Secretary received a notice that SIAPWS had changed the name to NORDIC IAPWS with Denmark, Sweden, Finland and Norway as included countries. This would be reduced to NIAPWS.

2.2 IAPWS Highlights and Press Release

The President asked Cook to chair the development of the Highlights/Press Release on the IAPWS proceedings during the week. Cook indicated that he would be available but needed to travel to Florida in mid-week. It was also suggested that Harvey should be part of the team to work with Cook. The Clerks of Minutes from each WG were asked to provide input. The Press Release is discussed in Minute 17.1 and is Attachment 7.

2.3 Evaluation Committee on International Collaboration.

The Executive Secretary indicated that two early proposals had been received prior to the meeting, and that any suggestions from a Working Group (WG) should be given to the Executive Secretary by the end of day. The President then reminded the EC that the Committee to review any proposals received would consist of the WG Chairmen, with the President and Executive Secretary as ex. officio members. A chairman would be chosen by the Committee. Final discussion is found in Minute 14.1.

2.4 IAPWS Awards Committees for 2025

2.4.1 Honorary Fellow Award Committee

This committee consists of two IAPWS Fellows and the President and Executive Secretary as ex. Officio members. At this time on the agenda there was some uncertainty as to availability of people so the President indicated that this would be finalized at the Friday EC meeting (Minute 15.2).

Action: Nominations are due to the Executive Secretary by 31st January 2025.

2.4.2 Helmholtz Award Committee

The Executive Secretary reminded the EC that the Helmholtz Award selection committee for the 2025 award would consist of a member from Germany/Switzerland (Chair), Japan, New Zealand, NORDIC and USA. These countries were requested to provide the name of the member for this committee to Chairman Kretzschmar before the Friday EC meeting (Minute 15.1).

Action: Nominations are due to the Executive Secretary by 31st January 2025.

2.5 Situation in Ukraine

The President indicated that there had not been any changes to the aggression and suggested to the EC that there were no reasons to change the suspended membership.

The EC approved this unanimously.

2.6 Refreshment of IAPWS Website

The President requested the chair of this committee to provide an update. McCann requested that the report should be delayed to the Friday EC meeting so the committee could meet during the week. The following were committee members: Cook (Canada), Addison (New Zealand) and McAllister (Australia). An approximate budget was needed to upgrade the IAPWS website. The Executive Secretary asked about the current security of the IAPWS website in regards to :http versus :https. This led to some discussion from EC members which eventually resulted in an agreement that the Executive Secretary and a member of the committee interface with godaddy as soon as possible to determine the action needed. Final discussion on the website is found in Minute 17.3.

2.7 Executive Secretary Succession

The President reminded the EC of the history from the EC meeting in 2023 when some criteria had been developed. Since then some people had responded. The president reviewed these responses from six people and indicated that none of these had been totally acceptable; he then opened up the floor for any other discussion. Vice President Nielsen made a motion that President Friend at the end of his tenure to take over the Executive Secretary position on an interim basis as deputy to the incumbent or vice versa. The Canadian delegate, Cook, seconded the proposal as a “stop gap measure”. It was suggested by the US delegate that this item should be left until the Friday EC to allow EC members to reflect. This is finalized in Minute 6.

2.8 Other Business Requiring Extensive Discussions

No other business was raised by the EC.

3. EC Mandate to Working Groups and Membership

The following mandates were discussed with the WG Chairmen for action during the week.

3.1 IAPWS Certified Research Needs.

The President indicated that one main purpose of the annual meetings was to produce documents (guidelines, Technical Guidance Documents, ICRNs, etc.) and urged the Working Groups to review the

strategy and provide a report at the Friday EC meeting on the schedule for production. The Executive Secretary indicated that three ICRNs needed attention by the Working Groups during the week: ICRNs 25, 28 and 31. Updates on these are included in the WG reports (Minutes 7 – 10).

3.2 Working Group Directions.

The President emphasized that each WG Chairmen should only report to the EC on Friday about those activities that need approval or discussion by the EC.

4. Preview of the IAPWS Week's Activities

President Friend indicated that there would be the ICPWS and STP conferences during the week. He then asked each WG Chair to provide an outline of activities during the week.

Following this item, the President closed the opening session of the EC at 10:20 am.

Activities During the Week

The first day activities of the Executive Committee were followed by Working Group meetings and the joint ICPWS/STP. The schedule of the IAPWS week is shown in Attachment 2.

Executive Committee Meeting. Friday, 28th June 2024

President Friend opened the continuation of the EC Meeting at 9:00 am. All of the IAPWS Members were in attendance as well as Associate Member country Italy.

Friend asked the EC if there were any additional items that should be added to the EC Agenda. None were suggested.

5. Acceptance of Minutes of Previous Meeting

President Friend asked for comments and changes to the minutes of the EC meeting held in Turin, Italy in September 2023. No changes were noted; thus the 2023 Minutes were accepted.

6. President's Report and Remarks

President Friend indicated that he had given his report at the General Meeting on Thursday 25th June 2024 and wouldn't repeat it at this EC meeting.

The President returned to the important item of succession planning for the IAPWS Executive Secretary position. This item had been discussed at the Sunday EC meeting (Minute 2.7). He reminded the EC that a motion had been made by the NORDIC delegate and seconded by the Canadian delegate which was followed by a suggestion by the US delegate to delay further discussion until the Friday EC meeting. He then again expressed interest in the position and indicated that he had been involved with IAPWS since 1993 and was very familiar with IAPWS workings. He then left the room to allow the Vice President to lead any discussion. Nielsen repeated her motion to elect Friend on 1st January 2025 as Executive Secretary on an interim basis for three years with the current Executive Secretary acting as deputy. At the next EC meeting in Finland (June 2025) the process to find a new deputy will take place. Much discussion took place with numerous EC members concentrating on the need to have a procedure for the future to remove the risk of a single Executive Secretary. The Vice President asked for a vote by the EC.

The EC approved this process unanimously.

7. Thermophysical Properties of Water and Steam (TPWS) Working Group (WG)

Minutes of the TPWS WG conducted during the week are in Attachment 3. TPWS Chairman Meier discussed the following items with the EC:

7.1 Replacement of the IAPWS-95 Formulation.

Planning is beginning on what will be a large project to replace IAPWS-95. In the first step, the available experimental data will be organized and evaluated, and a preliminary EOS showing only a single van-der-Waals loop will be developed. No responses were received to ICRN-31 on a call for experimental data.

7.2 Industrial Formulation for the Thermodynamic Properties of Water and Steam.

The Chair reported that Kunick proposed to develop a new Industrial Formulation for the Thermodynamic Properties of Water and Steam based on the SBT method (look-up tables). It was discussed whether the splines should be based on IAPWS-95 or IAPWS-97 formulation. A task group will approach industry in explaining the pros and cons of the two options.

7.3 Future of the Subcommittee on Seawater (SCSW).

TPWS Chair, Meier, reported that Albo had organized a conference session on sea water during the week. But the future of the Subcommittee on Seawater could not be discussed because only two members of SCSW had attended the TPWS/SCSW meeting.

The TPWS Chair proposed that Pawlowicz and Feistel remain formally Chair and Vice-chair respectively of SCSW. This raised a few comments from the Executive Secretary on the availability of these officers and whether SCSW should now be dissolved. It was then proposed that Albo become the interim SCSW chair with Pawlowicz as vice chair.

The EC approved the new SCSW officers unanimously.

The TPWS working group thought that ICRN 16 (*Thermophysical Properties of Seawater*) should be reconsidered after a new SCSW Chair and Vice-chair have been elected.

7.4 ICRNs

For ICRN 16 (*Thermophysical Properties of Seawater*): TPWS Chair will ask Pawlowicz to write a concluding statement.

For ICRN 28 (*Thermophysical Properties of Metastable Steam and Homogeneous Nucleation*): Hrubý will prepare a concluding statement.

For ICRN 30 (*Thermophysical Properties of Supercooled Water*): TPWS Chair will ask Hellmuth to write a concluding statement.

For ICRN 31 (*New Thermodynamic Data for Ordinary Water*): Harvey and Hrubý will prepare an update of the release.

7.5 IAPWS Representative for CCT-WG-Hu

The TPWS Chair indicated that Harvey was appointed as an IAPWS representative for the Consultative Committee for Thermometry / Working Group on humidity (CCT-WG-Hu). The IAPWS President is asked to inform the Consultative Committee for Thermometry.

7.6 TPWS Membership and Officers.

The TPWS Chair informed the EC that there were no new members suggested but that Sengers resigned from TPWS and Miyagawa resigned from SCSW.

Hrubý was elected as the new TPWS Chair with Jäger and Meier being elected as new Vice-Chairs.

The EC approved these WG officer changes unanimously.

8. Industrial Requirements and Solutions (IRS) Working Group.

The Chair of IRS had not attended the meetings during the week, so past Chair Okita had stood in. Minutes of the IRS WG conducted during the week are in Attachment 4.

8.1 Task Group Updates.

Okita provided the EC with brief updates on six Task Groups. None needed EC approval.

8.2 New Task Group.

Okita next indicated that a new Task Group had been formed: *Proposal for the Development of an Industrial Formulation for the Thermodynamic Properties of Water and Steam based on SBTL*. The Task Group consists of di Mare, Kunick, Pawellek, Hruby, Kretschmar and Okita.

8.3 IRS Members.

Okita indicated that Miyagawa was retiring from IRS. He also proposed two new WG members:

- Prof. Markus Schatz, Helmut Schmidt University / University of the Federal Armed Forces, Germany
- Mr. Benedikt Lea, Ruhr University/ Bochum, Germany

The EC approved these two new WG members unanimously.

9. Physical Chemistry of Aqueous Systems Working Group (PCAS)

Minutes of the PCAS WG conducted during the week are in Attachment 5.

PCAS Chairman Yoshida discussed the following items with the EC:

9.1 Task Group on Radiation Chemistry.

A joint PCAS-PCC Task Group has been formed to work on radiation chemistry and water radiolysis concepts of critical interest for irradiated aqueous systems such as those in nuclear reactors, proposed by Yakabuskie (CNL, Canada), Arcis (NNL, UK), Conrad (INL, USA) and Bachet (EdF, France). Radiation chemistry is an important concept for many aspects of the nuclear fuel cycle, with implications for reactor operation and chemistry control, severe accident modelling and development of mitigation plans, and waste management activities.

9.2 Task Group on Electric Conductivity.

A joint PCAS-TPWS (and possibly PCC) Task Group has been formed to work on literature survey and developing correlation functions of electric conductivities of aqueous electrolyte solutions at high temperatures. It is proposed that the Task Group is aimed at collecting literature and developing correlations, focusing on the required thermodynamic conditions for electrolytes needed in the field of hydrogen production using electrolysis. The initial members are Albo, Arcis, and Yoshida. Anyone interested in this project who can contribute is welcome to participate.

9.3 PCAS Membership.

The PCAS Chair informed the EC:

Dr. Kaj Thomsen (Technical University of Denmark, Denmark) was leaving PCAS and four people were proposed for membership:

Dr. Elizabeth Ploetz (Kansas State University, USA)

Professor Francesco Paesani (University of California San Diego, USA)

Dr. Martin Bachet (EdF, France)

Professor Greg Zimmerman (Commonwealth University of Pennsylvania, USA)

The EC approved these four new WG members unanimously.

10. Power Cycle Chemistry Working Group (PCC).

Minutes of the PCC WG conducted during the week are in Attachment 6.

PCC Chairman Addison discussed the following items with the EC:

10.1 Technical Guidance Documents (TGD).

The PCC Chair provided updates on the following TGD (Sub-Task Group chaired by Dooley):

- Film Forming Substances for Nuclear Plants. As this TGD has been delayed due to business and health pressures PCC will return to it in Finland in 2025.
- Monitoring Corrosion Products in Flexible (cycling and two-shifting) Plants. The white paper/draft TGD is almost ready for distribution to enable additional data collection for final TGD development. The PCC white paper format will be raised with the EC later.
- Flue Gas Condensation. Following presentation in Turin the draft is undergoing edits/review internally by PCC and will then be considered for a PCC white paper.
- Geothermal Steam Chemistry. Draft TGD in development with a goal for approval at IAPWS 2025.
- Electrode Boiler Chemistry. Expansion of working group to include Finnish and Norwegian plant operators. Goal is for draft TGD prior to IAPWS 2025 for presentation at Symposium.
- Dew Point of Low Sulphur Gas. This is an IRS led project with support from PCC. Draft white paper completed and presented at ICPWS 2024.

The Instrumentation TGD (IAPWS TGD2-09(2024)) has been amended and reviewed by the Editorial Committee. PCC requests EC approval for a postal ballot.

The EC approved the postal ballot unanimously.

10.2 International Collaboration Projects (ICP).

The PCC Chair informed the EC that no new collaborations had been proposed but indicated the status on the following two ICP:

- Boiler Corrosion – Canada/NZ – work continuing with expanded project.
- Corrosion Products. The two projects are completed, and the results were presented to PCC at previous meetings. The results have been used in the Corrosion Product white paper (Minute 10.1).

10.3 PCC Key Actions.

The PCC Chair informed the EC of the following key PCC actions:

- PCC technical description for IAPWS website completed and issued for uploading
- PCC LinkedIn Page completed and active for improved outreach
- Proposed PCC white paper format developed and approved by PCC
- Proposed IAPWS website location on PCC page.

At this stage the EC discussed the White Paper content and format. It was made clear that any WG can have a White Paper and that it is a WG document not an IAPWS document. The editorial committee will review the front page.

10.4 ICRNs.

The PCC Chair outlined the activities on ICRNs:

For ICRN 32. (Conductivity of electrolytes in aqueous solutions): This has had editorial review and will be sent for a PCC postal ballot.

For ICRN 25. PCC requests an extension to 2025.

The EC approved this extension unanimously.

For ICRNs 22 and 26. PCC requests that these be closed.

10.4 PCC Opal Files, File Storage and PCC Back-up Files.

Chairman Addison raised the following items:

- For IAPWS documents and file management there is a risk of loss of information and knowledge. IAPWS needs its own secure system (or subscription to cloud based system) for file and document storage. All WG and Task Group work should be stored on this system for access. The ICP reports are part of the ICP process but not currently published anywhere.
- PCC requests EC to investigate and considers a IAPWS file storage and document management system for all IAPWS WGs to use

Discussion by the EC led to the conclusion that these items would be dealt with through the on-going IT (Minute 17.3) discussion and would be put forward for a motion in 2025.

10.5 PCC Membership.

The PCC Chair proposed the following new WG members:

- Mr. Ludwin Daal, BlueXPRT– The Netherlands
- Mr. Tapio Werder, PPChem – Switzerland

The EC approved these new WG member additions unanimously.

11. Editorial Committee Report

Editorial Committee Chairman Harvey reported that in the preceding year, the Editorial Committee (Harvey, Cook and Cooper) had reviewed two IAPWS Documents:

- TGD 2024 Revision on *Instrumentation for monitoring and control of cycle chemistry for the steam/water circuits of fossil-fired, combined cycle, and industrial power plants*. (IAPWS TGD2-09(2024))
- *Revised Release on the Ionization Constant of H₂O*. (IAPWS R11-24).

12. Membership and Associates

12.1 Report on Membership.

The Italian Delegate, Albo, proposed to the EC that the Italian National Committee, ITAPWS, become a full member of IAPWS. He would be the chair with Stefano Boggio (Nippon Gases) as the Secretary and Rajesh Nair (OGS) as Treasurer. He also outlined the Italian organizations, industries and universities interested in ITAPWS.

The EC approved ITAPWS as a new full member of IAPWS unanimously.

The Executive Secretary then reported that Australia and USA had not paid the 2024 dues by the end of May 2024.

The Head of the Australian National Committee, McAllister, indicated that this had been an oversight by the treasurer and the dues would be paid as soon as possible.

The Head of the U.S. National Committee, Harvey, provided some background on the U.S. Committee. Since the beginning of IAPWS/IAPS (and even before), U.S. representation has been provided through the American Society of Mechanical Engineers (ASME). The current U.S. representation to IAPWS is the Properties Subcommittee (Harwood as Chair) of the ASME Research and Technology Committee on Water and Steam in Thermal Systems. On 6th June 2024, the U.S. committee was informed that ASME will terminate these committees on 30th June 2024 and that the international work on “steam tables” and related topics will not be supported by ASME in the future. ASME will not pay the dues to IAPWS in the future. For 2024, the U.S. committee is trying to get ASME to pay the 2024 IAPWS dues, which were already approved and for which Committee money was allocated; the most recent information is that ASME have indicated they will now do so.

Harvey then informed the EC that after 30th June 2024 the U.S. Committee will not be able to meet the requirement of the IAPWS Statutes which indicates: *“In any country desiring to participate in the work of the Association, a National Organization or Committee, representative of interests in the properties of water, steam, aqueous systems, and power plant cycle chemistry shall be constituted or designated by a governmental, technical, or professional body”*. They expect to initiate some sort of “technical body” (such as a nonprofit U.S. organization) in the coming months. But currently there is no apparent source of funding to be able to pay dues after 2024 and for future planning, the EC should not assume dues payments from the U.S. after 2024.

12.2 Reports on Associate Members.

The representative of The Netherland, Ludwin Daal, proposed to the EC that The Netherlands become an associate member of IAPWS as the Dutch IAPWS (DIAPWS). He provided some background on the Dutch power industry and indicated that the “Dutch Ring of Power Plant Chemists” already exists and would take on the role of the National Committee. DIAPWS will have the following officers: Chair: Simon van Dijk (Uniper); Secretary: Ludwin Daal (BlueXPRT); and Treasurer: William Fleuren (DNV). He also noted that an existing financial mechanism is already in place through DNV (EPOS).

The EC approved DIAPWS as a new Associate Member of IAPWS unanimously.

The Executive Secretary reported on contacts with Associate Members on their IAPWS status.

Status Report on IAPWS Associate Member, Greece. Mr. Antony Thanos, Chair of HIAPWS, had provided a short report to the Executive Secretary. The National Committee is actively supporting IAPWS activities, establishing regular updates on IAPWS activities (documents, events etc.) to HIAPWS participants. Persons participating in HIAPWS also contribute to IAPWS WGs. The local legal (Tax, Public Administration) framework, as far as potential legal forms to be considered for the Association, has been explored with continued follow-up, but still a main obstacle for officially setting a committee is the lack of financing. A web symposium is under consideration for the early winter period.

Status Report on IAPWS Associate Member, Israel. The Executive Secretary reported that ISRAPWS continues to maintain an annual symposium for the members with information sharing and raising of problems through direct personal contacts and presentations sessions. The most recent symposium was in May 2024.

Status Report on IAPWS Associate Member, India. The Executive Secretary reported that INDIAPWS continues to hold virtual symposia for the members on topics of interest. The most recent symposium was in March 2024.

Status Report on IAPWS Associate Member, Argentina and Brazil. The Executive Secretary reported that as a follow-up to action imposed on him at the EC meeting in Turin, he had contacted the Head of the National Committee, Corti. He provided some information on the nuclear industry and CNEA but did not feel that Argentina could participate institutionally in IAPWS activities in the near future. He indicated that it had been a pleasure for him to collaborate with IAPWS as a reviewer of the Release on water Kw. The rest of the people who were involved in the Argentine Committee in the past, in CNEA or in power stations, are all retired.

13. Executive Secretary's Report

13.1 IAPWS Bank Accounts, Financial, Auditors and IAPWS Dues

The Executive Secretary reported that IAPWS is on a sound financial footing with currently about £83,000.00GBP in total in the UK and US bank accounts. The status as at 3rd June 2024 in the bank accounts had been provided to the Heads of each IAPWS Member country prior to the EC meeting.

The Executive Secretary next reported that the 2023 financial statements had been forwarded to the IAPWS Auditors in January 2024 (Professor Savarik in Czech Republic and Dr. Delfs of VDI in Germany). Both had reviewed and approved the financial statements which were provided to the EC. But Dr. Delfs had informed the Executive Secretary that he and VDI would not be able to remain as an IAPWS auditor. The Executive Secretary requested an IAPWS country to volunteer. When no response was received the IAPWS President mandated that each National Committee consider the situation and respond to him by the end of 2024 with a suggested auditor. These would be reviewed, and a decision made for the next audit cycle in January 2025.

Action Required: Each National Committee to respond to the IAPWS President by the end of 2024 with a suggestion of an auditor.

The Executive Secretary proposed that Professor Savarik remain as an IAPWS auditor.

The EC Approved this proposal Unanimously.

The Executive Secretary proposed to the EC that the dues structure for member countries remains unchanged for 2025.

The EC Approved this proposal Unanimously.

13.2 Time and Place of the 2025 and 2026 IAPWS Meetings.

2025 IAPWS Meetings. The Head of NORDIC IAPWS, Nielsen, briefly reviewed the details to host the meeting in Helsinki, Finland between 22 – 27 June 2025. The meetings will be held at Hanaholmen. As well as the normal IAPWS EC and WG activities there will be a Symposium on 25th June 2025 and a technical visit to VTT, Technical Research Center of Finland.

2026 and 2027 IAPWS Meetings. The Executive Secretary indicated that preliminary discussions have taken place with the Chairs of BIAPWS for 2026 and Australia for 2027. He requested the present BIAPWS Delegate, McCann, to review the situation with the BIAPWS executive and respond to the Executive Secretary by the end of 2024. He also requested the Australian Delegate, McAllister, to review the situation with the Australian executives and respond to the Executive Secretary by the end of 2024. It is expected that the location of the 2026 and 2027 annual IAPWS meetings will be consolidated by the next annual meeting in 2025.

14. Guidelines, Releases, Certified Research Needs, and International Collaboration Projects (ICP).

14.1 International Collaborations.

The President asked the chair of the evaluation committee to provide the results of the evaluation of the ICP. Addison indicated that there were three proposals received and the committee had reviewed and ranked them in the following order:

1. *Analysis of Film Forming Amine Coatings in High Temperature Water Loops.* Submitted by Yoshida for PCAS. The sponsors are Canada and Japan. The cost is £16,400.00GBP.
2. *Radiation Chemistry of Iodine Under Low Dose Rate Conditions Relevant to Design Basis Accidents in PWRs.* Submitted by Hugues Arcis for PCAS. The sponsors are Canada and UK. The cost is £15,300.00GBP.
3. *Guideline on Thermodynamic Properties of Metastable Water.* Submitted by Frédéric Caupin for TPWS. The sponsors are U.S., Czech Republic and France. Cost: \$32,400.00 USD which at the current rate of exchange is £25,622.00GBP.

Addison indicated that all three were acceptable and if the funds existed IAPWS should support each as they would be of benefit to IAPWS. Much EC discussion took place about the financial situation. Finally, the U.S. Delegate, Harvey proposed the motion: “IAPWS should fund the first proposal pending the financial report from ICPWS being in balance (no loss from ICPWS)”. Further discussion led to an additional motion: “If there is a surplus from ICPWS then the EC should consider funding the second proposal by email”.

The EC Approved these motions by majority with Canada abstaining.

15. IAPWS Awards

The President reported that there was a 2024 Helmholtz Awardee: Dr. Sebastian Herrmann.

The Helmholtz Award Committee for 2025 had been initially discussed in Minute 2.4 and would consist of the following members: Germany/Switzerland (Hellmann)(Chair), Japan (Kayukawa), NORDIC IAPWS (Jensen), USA (Anderko) and Australia (McAllister).

The President reported that Nobuo Okita had been awarded an Honorary Fellow Award for 2024.

The Honorary Fellow award committee for 2025 will be Hruby (Chair) and Okita.

The Gibbs Award had been awarded to Dr. Rainer Feistel at the ICPWS.

16. Future. Election of IAPWS Officers for 2027/2028 and 2029/30. Next ICPWS.

The Executive Secretary indicated that according to IAPWS By-Law 8, the election of the next Vice President should be made at the end of the EC meeting in even years. The Executive Secretary indicated that together with the IAPWS President the recent history had been checked which suggested that the Australian Committee should be asked to nominate one of their committee members for the position for 2027/2028. The Australian Chair, McAllister, had been contacted and was asked to provide his committee's decision by November 2024. The Executive Secretary also indicated that Canada was next in line and requested the Head of the Canada national committee to review with his committee about nominating a person for the 2029/2030 period.

The EC Unanimously Approved this Process.

The current President, Friend, will step down on 31st December 2024. The current Vice President, Nielsen, will become the President on 1st January 2025 and the new IAPWS Vice President will assume the position at the same time.

The Executive Secretary thanked Friend for his leadership over the last two years which had been a tremendously difficult period for IAPWS. The EC applauded.

With regards to the next ICPWS (19th) the next country in line is Canada and the Executive Secretary requested Cook to review the possibility with his national committee. The IAPWS President suggested that a Task Group be formed to review all aspects of holding another ICPWS. This committee should consist of Hruby (17th ICPWS), Harvey (18th ICPWS) and Cook as representative of the possible next ICPWS. There should be review of the product (book, CD, etc) which could ensue from the next ICPWS.

The EC Unanimously Approved this Task Group.

17. New Business

17.1 Press Release

The President mentioned that Cook (Chair) and Harvey had been asked at the EC meeting on Sunday to develop a Press Release. This was developed with input provided by each WG. Cook indicated that a document had been prepared. The final version is Attachment 7. The President indicated that this release will be sent to all NCs and WGs of IAPWS and it should be distributed as widely as possible and sent to any journals and publications.

17.2 U.S. National Committee Feedback on the 2024 EC and General Meeting and ICPWS.

The Head of the U.S National Committee, Harvey, thought that combining ICPWS with the STP had been a great success and had allowed IAPWS members to experience a much wider range of activities. The financial report will be available in a couple of months.

The IAPWS President thanked the U.S. National Committee and requested any feedback from the EC. Applause from EC in appreciation.

17.3 IAPWS Website.

The President requested the chair of the Task Group, McCann, to provide the EC with the feedback.

McCann informed the EC that the desired outcomes were:

- * Improved collaborative and efficient working
- * Modernisation of graphics and branding
- * Provide information management and file storage.

McCann next indicated that the Task Group had worked with a professional designer and the review had indicated that the current IAPWS website is dated in appearance, navigational structure and development (not device friendly). The architecture is shallow with all links to sections and pages compiled in one long menu list which is unclear to work through and not practical for smaller screen devices. All content is text only which doesn't make it visually appealing. The proposed structure will include a revised homepage and interface conveying imagery and identity with an overview on what IAPWS is and what it covers. There would also be visual promos and links to upcoming seminars, meetings and events. McCann provided a possible website structure to include a homepage, technical guidance, meetings and working groups, and "about IAPWS".

McCann next provided the EC with three options:

1. Keep website as is and update security certificate to https.
2. Refresh existing graphics and architecture
3. Full update with filesharing capability.

He discussed the advantages and limitations of each and indicated that the TG preference is for Option 2 with a Stage 1 activity as follows to include refreshment of graphics and architecture and make device friendly:

- a. Currently exploring with the designer if they would be willing to support on this basis – depends if complete website redevelopment is required.
- b. If full website development is required, IAPWS will go out for three quotes from website design companies.
- c. Suggest that EC ringfences \$15k for website development.
- d. Request that each IAPWS WG and the EC provide 5-6 photographs/images with permission to go on the website that illustrates what IAPWS is and does.
- e. The Task Group expects it will take 3 months to come back with proposals to EC followed by a review process and timescale development
- f. Website redesign is then expected to take up to 2 years (possibly quicker but also depends on time needed for IAPWS review).

Following discussion from the EC a motion was developed for the EC: *"Is EC happy with proceeding with Option 2 but not currently authorizing any funding?"*. A second motion was also developed: *"A proposal will be developed in three months to include a scope and cost estimate. This will be sent to the Executive Secretary to arrange a Postal Ballot of one month"*.

The EC Unanimously Approved this Approach.

17.2 Reports from National Committees.

Written reports on progress in member countries provided during and after the EC meeting are attached to these minutes as follows:

Czech Republic	Attachment 8
Germany-Swiss	Attachment 9
Japan	Attachment 10
USA	Attachment 11

17.3 Participants

Attachment 12 provides a list of participants at the IAPWS Meetings in Boulder, USA in June 2024.

17.4 List of Members

An up-dated list of members of the Executive Committee, Working Groups, and Honorary Fellows will be developed by the Executive Secretary following the EC Meeting. This will be forwarded electronically to the Head of each National Committee and the Working Group Chairs.

18. Closing Remarks and Adjournment

No further business was raised by the EC. The President thanked everybody for participating at this EC meeting. The 2024 EC meeting was closed at 1:14 pm.