

# International Union of Pure and Applied Chemistry

155<sup>th</sup> MEETING OF EXECUTIVE COMMITTEE

Beijing, China, 12-13 November 2016

MINUTES

Attendees: Prof. Natalia Tarasova (Chair) Dr. Mark Cesa, Mr. Colin Humphris, Prof. Qi-Feng Zhou, Prof. Richard Hartshorn, Prof. Mei-Hung Chiu, Prof. Chris Brett, and Prof. Kaoru Yamanouchi  
Guest: Prof. Xuefeng Jiang (East China Normal University; Executive Director of IUPAC Office of the Chinese Chemical Society (CCS)), Ms. Minjie Huang, Dr. Lynn Soby, Dr. Fabienne Meyers (secretary)

## 1. INTRODUCTORY REMARKS AND FINALIZATION OF AGENDA

Natalia Tarasova welcomed all participants and members of the Executive Committee (EC) and thanked our host for all the arrangements.

Referring to the Agenda, Natalia Tarasova stressed that the EC has several important and difficult items to review, including the national subscriptions; the new elements, the ICSU-ISSC merger and several others. She asked if there were any additional items.

Natalia Tarasova indicated that in addition to receiving an update of the naming of the new elements, she will bring forward details on the establishment and terms of reference of the new Joint Working Party. This is timely because that aspect of the process should be outlined in the press release under preparation and which present the latest names and acronyms that have completed on November 8, the public review. This will be discussed under Agenda item 17.

Colin Humphris commented on item 7 on the National Subscription Task Force and stressed that the EC will be asked to consider the proposed new approach before the task force initiates a wider consultation with NAOs. This item will be reviewed in detail under item 7.

## 2. MINUTES OF 154<sup>TH</sup> (RTP, 31 OCT-1 NOV 2015) 2015 MEETING OF EXECUTIVE COMMITTEE

The minutes of the 154<sup>th</sup> Executive Committee meeting are included in the Agenda Book for reference.

The EC was asked to review and approve the minutes. The minutes were approved.

### 2.1 MATTERS ARISING FROM MINUTES (NOT COVERED BY ITEMS ON AGENDA)

#### 2.1.1 Revision of Division VIII Roster: For approval

The roster as included in the Agenda Book was approved.

Richard Hartshorn indicated that part of the delay was due to the fact that Division VIII had been waiting for a representative from the Chemical Abstracts Service.

## 3. MINUTES OF 98<sup>TH</sup> MEETING OF THE BUREAU (MONTREAL 9-10 APRIL 2016)

### 3.1 STATUS OF BUREAU MINUTES

Richard Hartshorn indicated that a draft of the minutes of the 98th Bureau meeting held in Montreal, Canada, in April 2016 was in preparation.

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The expectation is that a draft will be distributed for input by the end of November 2016.

Chris Brett stressed that it will be helpful to have draft just right after the meeting, especially when follow-up is required on specific action items.

### 4. ACTION ITEMS FROM PREVIOUS MEETINGS

Richard Hartshorn referred to the list of actions items included in the Agenda Book and asked EC members to review and provide updates.

{Mark Cesa confirmed that [154EC13] *To revise proposed ToR for the IUPAC committee for ICSU: update (iii) To promote and coordinate ... and add a statement to reflect that while being the official representative on ICSU, the IUPAC President should also be an ex officio on the new committee* has been completed.}

### 5. VICE PRESIDENT'S CRITICAL ASSESSMENT

Qi-Feng Zhou provided an update on his Critical Assessment. He started by stressing that the recent review of the Strategic Plan and its implementation were important and that as a consequence the Union can focus on sustainable development. The new website and accounting system, as well as the new interdivisional subcommittee on green chemistry and sustainable development, puts the Union in a good position. Qi-Feng Zhou outlined the four areas that he will be examining (ref. report in Agenda Book): 1. membership relations; 2. project system; 3. Interdivisional Committee on Green Chemistry for Sustainable Development; and 4. relationships and collaboration with other organizations.

Natalia Tarasova invited comments and questions.

Of relevance to relations with NAOs, a question was raised regarding the Conference endorsement program and that is how/when is the corresponding NAO's are involved and/or made aware of these conference endorsements. Natalia Tarasova suggested that the organizers should be asked to approach and inform the NAO even before applying for endorsement. After some discussion and recognizing that the organizers may not know who to approach, it was suggested that initially the application form be modified to include a question requesting the organizers to indicate if they did or did not approach the relevant NAO. Depending on that input, the review process can be adapted and involve consultation with the NAO. In all cases, the endorsement approval should be copied to the NAO (as is the current practice for financially supported conferences).

Action 1: Add a question in the Application for IUPAC Endorsement (AIE) form, asking if the conference organizers have or not approach the relevant NAO.

The Divisions should be reminded that if they know about an event that is part of a series and is generally endorsed, they should make sure that the formal endorsement has been requested. Additionally, an event report usually ends with the indication of where the next event in the series will be held and who is to organize it; this provides a lead for the Secretariat to follow up directly with the organizers.

Natalia Tarasova referred to national events where IUPAC poster prizes can be presented. She asked if that program which provides visibility for IUPAC should be expanded.

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Lynn Soby confirmed that only a few NAOs have made effective use of the program but those that do, appear to be satisfied and there has been no request to present poster prizes at more than one national event per year.

{FM note - the program provides visibility for IUPAC, so we should explore ways to reciprocate and for instance advertise these national events in the web calendar}

Colin Humphris stressed that the Union is running in deficit and that while the new strategy was being implemented, the EC must also identify activities and/or programs that could be eliminated. He recalled, for example, that while we keep supporting projects, it is simultaneously important to ensure that project outcomes are delivered as they constitute content for the IUPAC journal PAC which is a part of the revenue stream. Similarly to the national subscription issues, it is our responsibility to explain to our stakeholders what we gain from these projects and that relates to explaining the relevance of the Union.

Colin Humphris alluded to the complication that in IUPAC all decisions are taken by NAOs and not by individuals, and yet there is a desire to increase the number of individual members. Lynn Soby concurred that there is an opportunity to better inform NAOs about the affiliate members program while increasing income.

### 6. FINANCE AND BUDGETS

Colin Humphris referred to the Agenda and Agenda Book for details.

The report included in the Agenda is reproduced below. *All financial information presented at the EC meeting and contained in the Agenda and documents is pre-Audit and is subject to change.*

#### 6.1 AUDITED FINANCIAL STATEMENT FOR 2015

The audited Financial Statement for 2015 is included in the Agenda Book. It confirms the deficit of \$133k forecast at the Bureau meeting. The 2016/17 budgets are also deficit and this is not sustainable in the long term. It requires us to consider carefully how to maintain existing income streams, how to find new funding. We also need to stop non-essential or lower priority activities especially as new initiatives inevitably come along.

#### 6.2 REPORT ON CURRENT FINANCIAL SITUATION

The Income Statement and Balance sheet as of 30 September 2016 are included in the Agenda book. IUPAC is now reporting on a full accrual basis providing far greater insight into the financial performance of the Union and importantly its cash needs. Cash Flow management remains the critical issue.

On the accrual basis, income is recorded when it is invoiced and expenses when the costs are incurred. NAO income is therefore shown in total as invoiced on January 1st. The balance sheet shows account receivables of \$336k of the \$834k remains to be paid. The NAO status including those countries approaching two years in arrears will be reviewed under item 6.5.

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An important part of our income is from publishing. The Income Statement shows \$110k for publications that is the 2016 prepayment for De Gruyter and royalty income from book publishing (\$14k). We will be reviewing the outlook for PAC and CI with De Gruyter shortly before the Executive Committee meeting to help estimate the final position including any royalty income from the new Standards Online database. We will also be seeking continuation of the annual prepayment (€100k Euros).

The expenses data gives a good picture of performance against budget. Salaries and benefits are on plan, and travels costs well within plan. Other costs are above plan including IT support, and two non-budgeted items for consulting for the National Subscription Task Force and a pilot assessment of IUPAC's database needs. Both items were approved by the officers. A key structural investment in the databases that will lie behind the website \$47k was also approved recently as essential by the officers.

The expectation is that the year 2016 will be in deficit as budgeted, reducing our reserves.

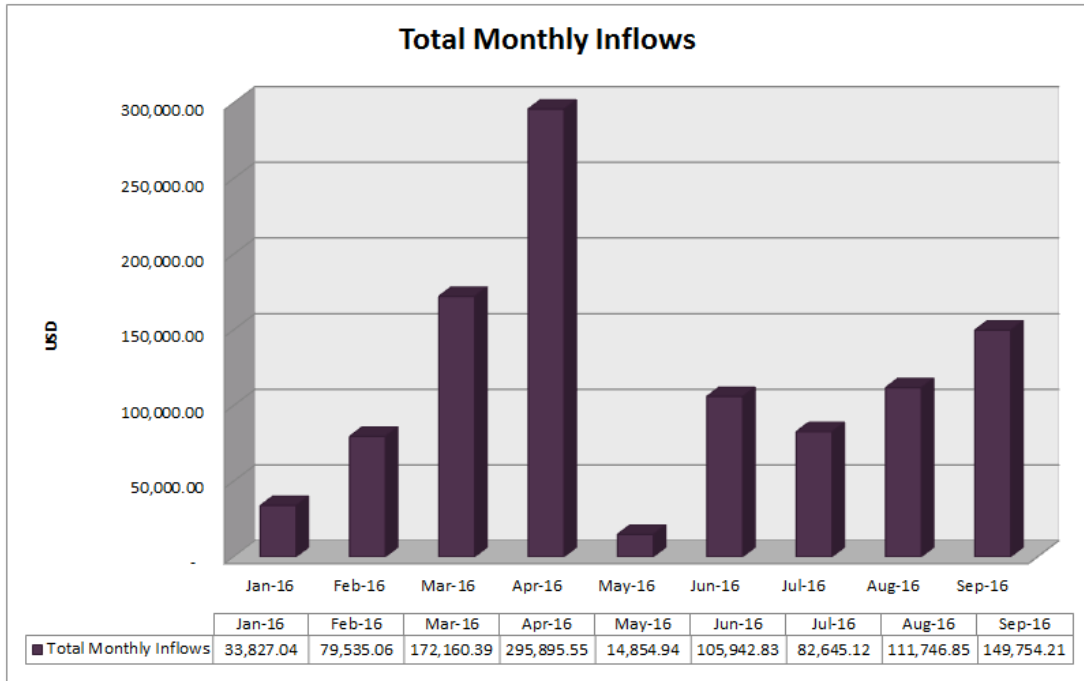
Key points on the balance sheet are the subscriptions receivable (\$336k), the new website (\$133k) (shown as an asset. It will be depreciated over 5 years) and the BB&T line of credit of that has been extended to the \$100k to help manage cash. IUPAC has drawn fully on its line of credit to help manage cash flow i.e. we have effectively borrowed to cover the shortfall in National Subscription payments.

The ongoing cash issues remain. We have little control over the timing of income payments or expense claims. We have maintained a target to settle expense claims within 30 days. We also have however regular expenses to meet for the operation of the Secretariat and supporting systems and programs (\$60k/month). A major challenge for the Secretariat is managing this delicate balance continuously. An example of a weekly cash flow statement is included in the Agenda Book that is used to assess cash flow needs. The year-to-date financial and cash flow analysis is shown below and is included in the Agenda Book.

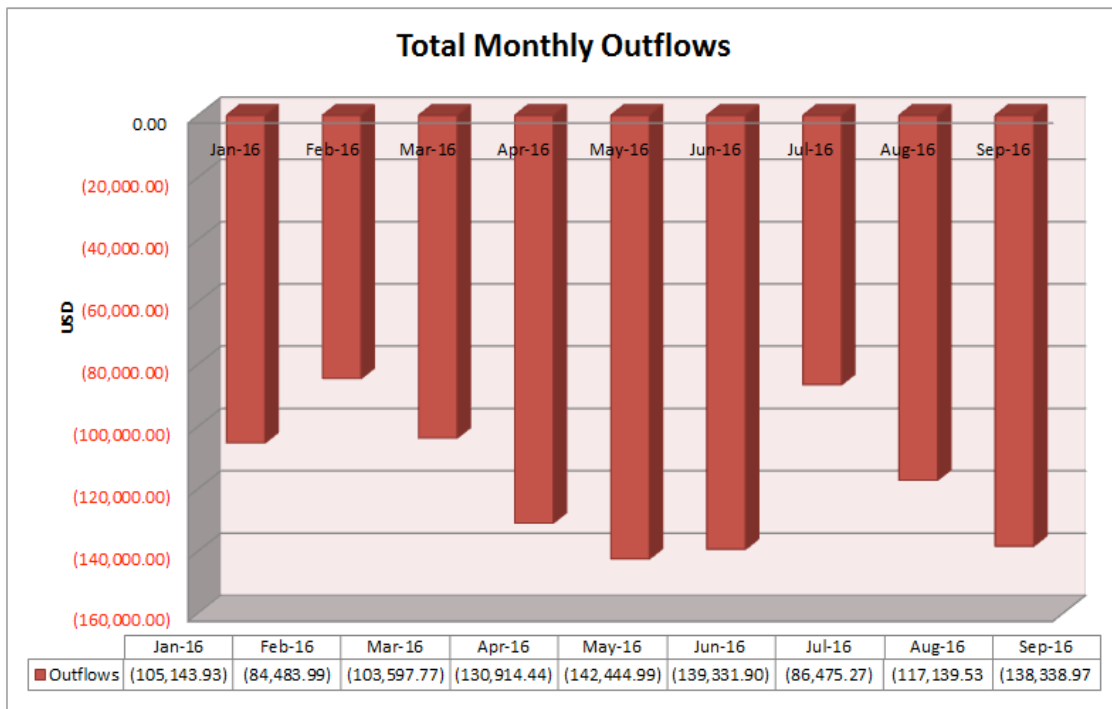
CASH INFLOW:

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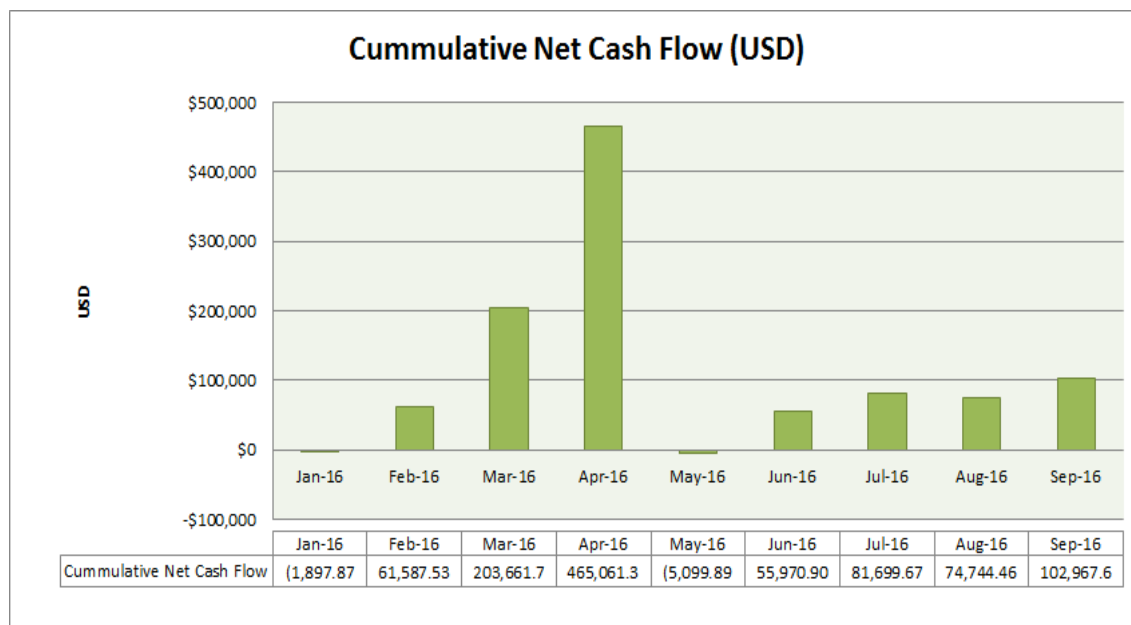
CASH OUTFLOW:



CUMULATIVE NET CASH FLOW:

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6.3 PERFORMANCE OF INVESTMENT PORTFOLIO

The investment performance of IUPAC’s portfolio since inception with BB&T / Scott & Stringfellow as of 3 October 2016, is yielding 3.45% with an estimated annual income of \$138,711. Overall market value of the portfolio is currently \$4,021,043. As of 30 September 2016, the asset allocations were as follows and have slightly changed in the past month.

<i>ALLOCATION</i>	<i>AMOUNT</i>	<i>PERCENTAGE</i>
<b>Bonds</b>	\$1,022,119	25.42%
<b>Mutual Funds</b>	\$1,366,226	33.98%
<b>Equities</b>	\$1,583,554	39.38%
<b>Cash Sweeps</b>	\$49,144	1.22%
	\$4,021,043	100.00%

The asset allocation is relatively stable for the 2016 time period, and reported below:

	<i>Jan-16</i>	<i>Feb-16</i>	<i>Mar-16</i>	<i>Apr-16</i>	<i>May-16</i>	<i>Jun-16</i>	<i>Jul-16</i>	<i>Aug-16</i>	<i>Sep-16</i>
<b>Equities</b>	\$1,483,237	\$1,451,690	\$1,534,098	\$1,541,162	\$1,576,603	\$1,621,491	\$1,600,617	\$1,573,982	\$1,583,554
<b>Bonds</b>	\$1,046,963	\$1,046,867	\$1,005,707	\$1,032,901	\$1,027,430	\$1,035,093	\$1,027,061	\$1,023,548	\$1,022,119
<b>Mutual Funds</b>	\$1,301,133	\$1,300,273	\$1,324,326	\$1,336,356	\$1,337,846	\$1,340,453	\$1,357,148	\$1,362,485	\$1,366,226
<b>Cash Sweeps</b>	\$29,703	\$63,233	\$128,642	\$86,312	\$73,022	\$23,915	\$81,279	\$53,953	\$49,144
<b>Total</b>	\$3,861,037	\$3,862,064	\$3,992,772	\$3,996,731	\$4,014,901	\$4,020,953	\$4,066,106	\$4,013,968	\$4,021,043
<b>Delta</b>		\$1,027	\$130,709	\$3,959	\$18,170	\$6,052	\$45,153	(\$52,137)	\$7,075

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6.4 BUDGET UPDATE 2016-2017

The Budget approved by Council for the 2016-17 biennium is shown in the Agenda Book as are the resulting National Subscriptions for each of the two years. Also shown are the budgets allocated to the Divisions and Standing Committees. The method used to produce this biennium budget was an interim measure adopted to deal with a difficult situation that arose from the failure of the usual method to produce a reasonable set of allocations of the National subscriptions. This led to the creation of the National Subscription Task Force which was approved by Council in Busan. (See item 7.)

6.5 NAO NATIONAL SUBSCRIPTION: STATUS AND ISSUES

A summary of the status of the NAO National Subscriptions for 2014-2015-2016 is included in the Agenda Book. IUPAC has received \$575,694 (~65%) of the 2016 budgeted amount of \$888,781. We estimate the total receivables for 2016 to be \$880,000 with the difference due to exchange rates (\$5,770 to date). The exchange rate loss in 2016 is significantly less than 2015, which was \$44,789 in October 2015. As a result of outstanding and delayed National Subscriptions payments, we have taken a \$100,000 Line of Credit (LoC) Loan and our investment interest and dividends to manage cash flow. We paid back the LoC from 2015 in first quarter 2016 and are currently paying interest (\$375/month) on the draw against the LoC.

6.5.1 NAO's approaching 24 months in arrears

The following NAOs were sent an early reminder regarding their status 18 July 2016 in order to provide them with enough time to respond and make their 2015 NS payments.

Argentina, Bulgaria, Kazakhstan and Pakistan were notified of their payments due and deadline for payment of 2015 and 2016 being 30 December 2016. In addition to the letter, a complete list of members was provided.

NAO	2016 Paid USD	2016 Due USD	2015 Paid USD	2015 Due USD	2014 Paid USD
Argentina		\$4,758.34		\$8,910.00	\$8,422.00
Bulgaria		\$1,869.45	\$1,769.00	\$1,753.49	\$1,781.00
Kazakhstan		\$1,050.00		\$1,000.00	\$1,000.00
Pakistan		\$4,380.00		\$4,200.00	\$4,000.00
<b>Total Due</b>		\$12,057.79		\$14,094.49	
<b>Grand Total</b>		<b>\$26,152.28</b>			

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Bulgaria has recently made their 2015 NS payment. Pakistan was in same situation last year and we are experiencing similar communications and delays. We are in contact with them regarding their questions. We have a new contact person in Argentina and are currently working with them on their subscription(s). Kazakhstan was approved by Council in Busan to receive NAO status. No communication has been received regarding their subscription payments. Prof. Tarasova called the Secretary of Kazakhstan's NAO and discussed the current situation. A letter, past due invoices and readmission policy was sent to the Secretary on 21 October 2016 as a result of her discussion.

A second letter was sent 20 September 2016 to all countries still approaching loss of NAO status. Bulgaria will not lose status and will be eligible to cast votes at Council if 2016 invoice is paid.

#### 6.5.2 NAO Applications

No new applications have been received for National Adhering Organization status.

Colin Humphris informed the EC that following the discussion with De Gruyter, it has been agreed that De Gruyter will continue to make the annual prepayment of €100k Euros. In reference to the Line of Credit (LoC), he stressed that while managing our funds and revenues, a LoC was a suitable option to retain interest income. Also, the Union is required to operate with the equivalent of a biennium of operation expenses in saving. Overall, the current situation is clearly not sustainable and Colin Humphris pointed to the budget of each Division and questioned their actual needs. He suggested that he would communicate with the Divisions to ask about their needs compared with their spend in this biennium. He also recognized that the bulk of the income comes from NAOs and that the total was not significantly increasing. There is an urgent need to generate income from other sources.

#### 7. NATIONAL SUBSCRIPTION TASK FORCE

Colin Humphris referred to the Agenda and the Agenda Book for details. He recalled that IUPAC was committed to propose a new approach to National Subscriptions to Council in July 2017. In practice this means that the new approach and associated budget have to be completed for the Finance Committee consideration in early February 2017 to enable proper notice to Council. There are two core considerations. The first is the actual approach and the second how this might be implemented. Any new formula will generate some winners and losers so we will have to consider some principles for implementation; for instance, should no one see an increase in 2018?

The task force has undertaken a benchmarking survey of other science unions, and half responded. A tabulation of the responses is included in the Agenda Book. Many see the same payment issues as IUPAC and some are undertaking reviews today. All have a banded structure for national subscriptions, most of which are based on an assessment of national wealth and/or a measure of size of the science activity. The subscription bands link directly to the number of votes each country has with only a couple of exceptions. None give the choice IUPAC offers for the currency of payment, and none offer inducements for early payment.



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A survey of the NAOs was also initiated to assess their views on the core principles of a new system. Only six have responded so conclusions can only be drawn with caution. The results are tabulated and included in the Agenda Book. There is acknowledgement that this is a complex task and that internationally comparable data may be hard to find. There is acceptance of a composite measure encompassing the academic and industry knowledge base and national wealth but with some caveats about data. Views among the survey respondents differed widely on the question of inducements for early payment. There was a plea from one respondent that the new system should not result in major swings as this will make it difficult to implement.

The task force has taken advice on currency management and it does not appear practicable for IUPAC to be hedging given the number and amounts of currencies we accept.

Potential data sources have been assessed for information on publishing and patenting as proxies for chemistry activity. The recognized sources (Thomson Reuter) are expensive even for a not for profit organization such as IUPAC (\$12,000 p.a.). A proof of concept consulting study is therefore being undertaken to evaluate a composite measure of academic publishing, patenting, chemical industry turnover and National wealth by country. This is for a sample of our members in order to assess alignment with the previous model and implementation issues. The aim is to identify an acceptable approach using publically and freely available data from credible and sustainable sources. We should not seek spurious accuracy but are considering an approach to enable us to categorize member countries into bands that align with our existing voting categories with a special category for China and USA. An assessment of the possible current banding and voting is included in the Agenda Book and shows a reasonable fit.

Next steps are a further round of consultation with the NAOs and finalization of the recommended data sources.

Lynn Soby reviewed in more detail how the proof of concept had been developed. The model includes two major components: academic activity (including H-index and number of patents averaged over 5 years) and industry knowledge (including the chemical industry turnover {i.e. currently the only index factored into the NS calculation} and National wealth by country, or GDP). The two components are intended to mirror the pure and applied nature of the chemistry enterprise. A study has been completed including 20 countries and each member of the EC is invited to review the details. Colin Humphris asked each member to provide feedback. After that round of input, everyone shall be prepared to present the case study to their respective NAO.

The proof of concept focusing on a multi index approach was well received.

Motion: The EC endorses the approach taken by the NS Task Force to develop a model that encompasses a multi-index model.

Vote: all in favour.

Motion: The EC authorizes the Task Force to further communicate with each NAO on the progress and development of the new model.

This will include providing the NAOs the benchmarking of other Unions, sharing the data from the countries that have responded to the survey, and laying down the principles of the model and how it might be used in a banded or tiered structure to avoid major swings in subscriptions.

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Vote: all in favour.

**8. FUTURE OF CHEMRAWN**

Richard Hartshorn referred to his report included in the Agenda Book.

Before focusing on CHEMRAWN, Richard Hartshorn reported on his attendance at the meeting of the Inorganic Chemistry Division (Div II), the Committee on Chemistry Education (CCE), and the Committee on Publications and Cheminformatics Data Standards (CPCDS).

He reported that Division II has had an extremely busy year and a steady momentum also with projects being planned around the periodic table and jointly with CCE.

CCE met at the International Conference on Chemical Education (ICCE) as the committee traditionally does, and because this meeting provides a broad exposure and opportunity to run joint activities with other organizations, e.g. OPCW running a Symposium on Chemical Weapons Convention & Chemical Safety and Security.

A joint workshop with the cheminformatics group of the Research Data Alliance (RDA, <https://iupac.org/event/prioritizing-digital-data-challenges-in-chemistry>) was held directly prior to the CPCDS meeting last July. Issues related to data standards, data exchange and data mining are at the core of the new “CDS” of the committee. Richard Hartshorn stressed that this area of work is extremely important, for example allowing the interconversion of the traditional nomenclature which IUPAC has developed, and the trend towards graphical representation and related standards such as InChI. He foresaw much needed work being done jointly between Division VIII and CPCDS, and commended the developing relationship with the RDA.

Both CHEMRAWN and COCI were asked to provide a report. The work of COCI, specifically in relation to the CA program and the prospect for further relation with industry, will be reviewed under item 20.

The CHEMRAWN report is included in the Agenda Book. Richard Hartshorn recalled that the future of the committee had been raised at the previous EC meeting, and particularly in the context of possible developments in green chemistry.

The EC raised questions and exchanged ideas about the CHEMRAWN. Why is the committee activity limited to conferences? Does the current activity have an impact? Should the committee conferences be catalytic in generating new series? How can the committee (or should it) be preserved, and can the principle of “Applied to World Needs” be preserved within the Divisions? Can IUPAC sustain two overlapping committees: CHEMRAWN and the new Interdivisional Committee on Green Chemistry for Sustainable Development? Could the current CHEMRAWN events be self-sustained and also generate income that will allow CHEMRAWN to do future planning and operational activities? What will be in IUPAC’s view a “good” CHEMRAWN? Can their operational budget be transformed into 50:50 operations:projects to trigger an incentive to consider alternative activities? Should CHEMRAWN’s focus be addressing the UN Sustainable Development Goals?

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The EC concurred that the chair of CHEMRAWN should be asked to review CHEMRAWN's plan for the future and articulate a new vision. A deadline of February 2017 will allow for consideration at the next Bureau meeting.

Action 2: The Secretary General, with the President, will raise the EC concerns with the CHEMRAWN chair and ask that the committee prepares a new vision and propose a new plan by Feb 2017.

### 9. INTERDIVISIONAL COMMITTEE ON GREEN CHEMISTRY FOR SUSTAINABLE DEVELOPMENT

#### 9.1 TERMS OF REFERENCE

Natalia Tarasova referred to the proposed Terms of Reference included in the Agenda Book. The Bureau was asked to vote on the Terms of Reference via email by 31 October 2016.

Lynn Soby confirmed that 24 votes have been cast: 23 for and 1 against.

#### 9.2 COMPOSITION AND PROPOSED MEMBERSHIP

The Composition was presented for review. Natalia Tarasova confirmed that the Divisions had been asked to propose representatives and the resulting roster was proposed:

##### *Titular Members*

Pietro Tundo (Chair), IUPAC Bureau member, Italy  
Janet Scott (Secretary), TM Division III, UK  
Chris Brett, IUPAC EC member, Portugal  
Christine Luscombe, Vice President Division IV, USA  
Pierangelo Metrangolo, TM Division I, Italy  
Michael Schwenk, Secretary Division VII, Germany

##### *Associate Members*

Paul Anastas, Member former Subcommittee on Green Chemistry, USA  
Jorge C3lon, AM Division II, Puerto Rico  
John Corish, IUPAC former Treasurer, Ireland  
Hemda Gerelick, IUPAC Bureau member, UK  
Buxing Han, Member former Subcommittee on Green Chemistry, China  
Philippe Knauth, NR Division II, France  
Anna Makarova, NR COCI, Russia  
Claudio Mota, Member former Subcommittee on Green Chemistry, Brazil  
Bipulbehari Saha, AM COCI, India  
Kenneth Seddon, Member former Subcommittee on Green Chemistry, UK  
Supawan Tantayanon, NR CCE, Thailand

*National Representatives* will be nominated after committee formal approval by Council.

An Advisory Board will include the former Chairs of IUPAC Green Chemistry Conferences (Wolfgang Hoelderich, Germany; Ekaterina Lokteva, Russia; Philip Jessop, Canada; Vania Zuin, Brazil; Liliana Mammino, South Africa), and other distinguished experts (e.g. Roger Sheldon, Netherland; Takashi Tatsumi, Japan) and the remaining Members of former Subcommittee on Green Chemistry.

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The EC concurred that the membership is provisional until approval by Council. The same membership will continue in 2018-2019 and during that time, the Committee will be invited to proceed with an election to establish its 2020 membership.

### 9.3 BUDGET IMPLICATIONS

Natalia Tarasova confirmed that the Committee will be submitting project proposals; when approved, these projects shall clearly be assigned to the new Committee. The Treasurer stated that apart from these projects there is no assigned budget for 2017. Looking forward to the biennium 2018-2019, Colin Humphris suggested that the committee be asked to articulate their actual plan and needs. The EC will have to clearly justify such eventual expenses if it is to ask the Council to approve the new body.

Colin Humphris suggested that one way to budget for this committee would be to consider redistribution of the current Division and Committee budgets. While preparing the budgets for the next biennium, an option will be to reconsider the “traditional” distribution/allocation.

Action 3: Natalia Tarasova will ask the ICGCSD Chair to outline a plan and propose a budget.

### 9.4 IMPLEMENTATION AND APPROVAL PATHWAY

Richard Hartshorn confirmed that the Committee plan and membership will be presented at Council for approval.

## 10. ELECTION PROCESS

### 10.1 STATUS UPDATE

10.1.1 Lynn Soby referred to the detailed timeline for the 2016-2017 election process in the Agenda Book and confirmed that all tasks have so far been completed on time. The NAO's received the first communication regarding the election process and timeline.

An online form for all nominations (NAO's and Nominating Committee) will be made available to further streamline the election process and reduce workload in the Secretariat; the target date to deploy such a form is 1 December 2016.

The eligibility for all Divisions, Standing Committees, Commissions and ICTNS has been completed and sent to all DP's, STCC's on 20 September 2016. Eligibilities of each body were sent to the NAOs on 19 October 2016.

10.1.2 Lynn Soby confirmed that names of Nominating Committee Chairs were due 31 October 2016 and all have been received and reviewed. Two Standing Committees, CCE and CHEMRAWN, have been asked to revise their membership. All others have been approved by the Secretary General.

### 10.1.3 Division Committee Electorate

Richard Hartshorn explained that he proceeded to review the feedback gathered soon after the last Bureau where the question of the electorate has been raised. He presented

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his recommendations to harmonize the electorate for the upcoming elections. The proposed electorate for Division Committee elections will include:

- Division Committee members (Officers, TMs, AMs, NRs)
- Sub-Committee Chairs and Secretaries
- Commissions Chairs, Secretaries, and TMs (I.1, II.1 and JCBN)
- Task Group Chairs of current projects
- Members of the current Nominating Committee and that for the previous biennium, and

with the additional comment that Task Group Chairs of projects that span more than one Division will get to vote in all of those Divisions (since they are presumed to have an interest in who should have such leadership roles and the knowledge to decide who those people may be).

There were no comments or questions.

Motion: The EC approved the recommendation of a single electorate for all Divisions and Standing Committees and the proposed composition.

Vote: All in favour.

The comment was made that this was an important clarification considering the ongoing quest for more transparency.

### 11. IYCN DEVELOPMENTS

Richard Hartshorn referred to his correspondence with Maarten van Sisseren who led the submission of a project proposal aimed at establishing/developing the International Young Chemists Network (IYCN). He recalled that the proposal had been shared for comments with the Bureau, but that it was somewhat ill-defined in that it essentially asked for funding to support bringing a leadership group together to decide what should be done then – it was essentially a project to design a project, and was not sufficiently delineated in terms of eventual outcomes to be funded.

The view of the Officers had been that the idea of a Young Chemists Network had considerable merit and that IUPAC should support the development of such an organization and try to find ways to incorporate it within IUPAC structures.

In the correspondence, steps were proposed and several have already been initiated. Currently IYCN is already involved in activities including the WCLM for São Paulo and the IUPAC100 program development.

Natalia Tarasova suggested that the IYCN be made aware of the forthcoming elections.

Action 4: Richard Hartshorn to inform IYCN of the forthcoming elections and related timelines.

A question was asked about whether their proposed status as Associated Organization (AO) status was obtained. As of today, it does not appear on the IUPAC website.

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Action 5: Lynn Soby will formalize the AO status of IYCN as it has been proposed and approved by the Officers.

Mark Cesa suggested that besides specific project proposals and/or involvement in current activities, IUPAC should consider developing a MOU with IYCN, similar to that being developed with other organizations.

Action 6: Richard Hartshorn to raise the possibility of developing a MoU with IYCN.

### **12. 2017 GENERAL ASSEMBLY & CONGRESS, SÃO PAULO, BRAZIL**

Lynn Soby referred to the Agenda and Agenda Book for details.

#### 12.1 REPORT FROM ORGANIZING COMMITTEE

Prof. Roberto Torresi has provided an update regarding fundraising, exhibitors, plenary lectures, financial status and other logistics. A summary report from his emails is included in the Agenda Book. The [www.iupac2017.org](http://www.iupac2017.org) site has been updated to include the International Advisory Board members. The Secretariat has received their Application for Endorsed Conferences for review. Abstract submission is open and a detailed review with their developers on registration was completed. The organizers provided IUPAC a "Call for Abstracts" poster which will be sent to the NAOs and Chemical Societies. A copy is included in the Agenda book. We also have the poster in Portuguese, if needed.

Lynn Soby indicated that she will be negotiating the daily room rate for the hotel (the current proposal is USD 240)

#### 12.2 GA SCHEDULE

Lynn Soby confirmed that the schedule of the General Assembly is designed after the Busan GA schedule. The organizing committee and MCI will be working on room assignments and logistics. They are aware of the needs for space prior to the conference for Task Group meetings, the interdivisional meetings and Council needs.

Lynn Soby indicated that the Council room has been confirmed and will be held in the Hilton Hotel across from the conference center.

#### 12.3 WCLM

The co-chairs of the 2017 WCLM, Christopher Ober and Hemda Garelick, have submitted a project proposal titled "IUPAC's role in developing interdisciplinary/ collaborative work in the Chemistry community and beyond". A copy of the project proposal is included in the Agenda Book.

The proposal is under review and Fabienne Meyers confirmed that it needs EC recommendation to be moved to the Project Committee.

Action 7: Richard Hartshorn will provide a recommendation for the proposal to be considered by the Project Committee.

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Fabienne Meyers commented that clarification on the status of the Strategic Opportunities Fund was needed. Recognizing that the project is not a regular project, and that the Bureau “invited” such application, and similarly to WCLM 2015, the PC could possibly recommend an allocation from the SOF.

*{The WCLM 2015 received USD 15000 of support, including USD 3000 shared equally between the Committee on Chemistry Education, the Chemistry and the Environment Division, and the Committee on Chemistry and Industry, and USD 12000 from the Strategic Opportunities Fund.}*

#### 12.4 YOUNG OBSERVER PROGRAM

Lynn Soby referred to the addendum to the Agenda Book in which is included a summary of the YOs program as she presented to the Congress organizers. The summary outlines the planned WCLM and the involvement of the YOs in the regular Divisions and Standing Committees meetings.

Fabienne Meyers recalled that the programming involving the YOs in the WCLM was relatively new (the first time was at the General Assembly in Istanbul in 2013) and that the primary intent is to foster engagement in the Committees’ activities.

*{For reference is the recent announcement posted on RSC.org of their YO bursaries:  
<http://www.rsc.org/news-events/articles/2016/oct/iupac-assembly-bursaries/>}*

#### 12.5 WOMEN IN SCIENCE SYMPOSIUM

The Women in Science Symposium will be held during the congress as one of 3 special symposia. Work is ongoing regarding this important event.

Fabienne Meyers confirmed that good links with the Congress Organizers had been established and that she, together with Carolyn Ribes (COCI), was working with Vanderlan Bolzani. The Congress fully embraced the opportunity to feature the Symposium as a high profile activity of the Congress.

The call for nomination for the 2017 award was released online on 23 October 2016 (<https://iupac.org/2017-women-in-chemistry/>) and is to appear in print in the November CI issue. It has been shared with the Congress Organizers who are considering how to feature it on the Congress website. Fabienne Meyers suggested that the call be more broadly disseminated and be sent to the NAOs along with other calls, e.g. the IUPAC Solvay Award and/or the nomination for election.

Action 8: The Secretariat will provide the NAOs with an update on current calls for nominations and other upcoming deadlines.

#### 12.6 INTERDIVISIONAL MEETING RESOLUTION FROM DIVISION V AND OTHER INTERDIVISIONAL ACTIVITIES

A resolution from the Analytical Chemistry Division (Div V) regarding holding an Interdivisional Discussion of Critical Evaluation of Chemistry Data was received for Bureau discussion. However, given the lack of time on the Agenda, Bureau did not discuss the resolution.

The resolution is included in the EC Agenda Book.

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Lynn Soby indicated that during discussions with Jan Labuda, she suggested that he involves CPCDS, given their activities in Big Data and their request to hold a special symposium about Big Data and data standards in São Paulo.

The symposium “Research Data, Big Data, and Chemistry” is to be organized by David Martinsen and Leah McEwen (both CPCDS), has been accepted by the Congress, and is listed as a special symposium.

Lynn Soby also confirmed that, given the importance of the topic and relevance to many, if not all, IUPAC Divisions, Jan Reedijk, as chair of the last Division Presidents meeting, has been asked to express an opinion about the Div V proposal. Division V (David Shaw) is drafting a discussion paper and possible meeting details to seek input from the Divisions and Standing Committees.

EC has no comment.

Action 9: Lynn Soby will pursue discussion and consult with both Division V and CPCDS.

### 13. BIDS RECEIVED FOR 2021 AND 2023 GENERAL ASSEMBLIES AND CONGRESSES

Lynn Soby confirmed that a letter had been sent to the NAOs on 7 September 2016 regarding 2021 and 2023 solicitation of bids. A copy is in the Agenda book. The deadline for submission is 15 February 2017 and bids will be reviewed at the April Bureau meeting.

Lynn Soby indicated that we have received letters of intention for the 2021 and 2023 WCC and GA from Canada (2021), China, Israel, The Netherlands. A request for information on requirements was received from Nigeria, but no formal letter has been received.

The EC recalled that in 2013, China also made a proposal for 2019 and that it was retracted recognizing that France will be a more suitable place for the Congress held during the centenary year.

{Quote from 2013 Bureau minutes: *China and France have submitted some materials in preparations for bidding on the General Assembly and Congress for 2019. Early in the discussion, Prof. Zhou made a motion that China would withdraw its bid for 2019 because of the significance of the centennial year for IUPAC and its history with France. China's proposal was to move their application for hosting the GA to 2021. The Bureau voted unanimously to accept the withdrawal from China and thanked Prof. Zhou and China for this kind gesture of collaboration and consideration.*}

### 14. STATUS REPORT ON IUPAC SECRETARIAT

#### 14.1 WEBSITE, INFORMATION SYSTEMS, SOCIAL MEDIA

The current status and future plans of the new IUPAC website was discussed. A review of information systems with a focus on the future IUPAC database and current systems in place and use of digital platforms was presented.

#### 14.2 FACILITIES



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Lynn Soby reported on the status of the Secretariat office. The office has completed its relocation last July. Meanwhile, the systems and processes keep being reviewed and improved taking advantages of various online services. For example, applying to become an affiliate member now can be done using an online application form with the option to pay online. Lynn Soby explained that an important migration of all data related to members, subscriptions, events, and projects, to a central database (zoho.com) is being now developed and which will also serve the back-end of the website.

The Vice President asked if a description of the IUPAC logo was available and if this can be added on the website for information.

Natalia Tarasova thanked Lynn for all the work that has been done to lift-up the Secretariat and manage all the changes both in the building and the supporting infrastructure, all of which allow the Secretariat to function efficiently.

#### 14.3 POLICIES-PRIVACY AND DATA SECURITY (WEBSITE/MEMBER DATA/CPCDS)

Lynn Soby commented that IUPAC currently does not have a formal privacy policy in place for our members and volunteers. This question was raised at CPCDS and as policies differ around the world and data security issues are a constant concern, CPCDS recommended that IUPAC needs to put in place a Privacy Policy. This is particularly important with respect to what information is shared via our website about our members and programs.

The EC recognized the need to have a clear policy. A question was raised about how the new website can accommodate a default where by only members can have access to member's information. Currently members have the option of not having their details displayed and the defaults is to list name, email, telephone, and country.

Action 10: Lynn Soby to clarify the current privacy policy on the web.

### 15. PUBLICATIONS

#### 15.1 STATUS REPORT *CHEMISTRY INTERNATIONAL*

The following details on CI subscription were included in the Agenda. The letter sent with the renewal notice to 2017 CI Subscribers is in the Agenda book.

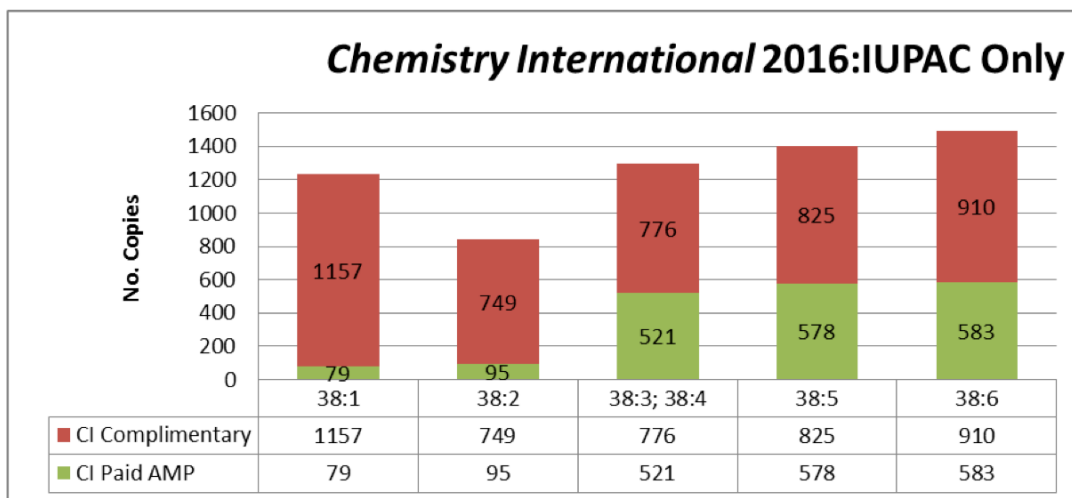
See Item 15.4.

The 2016 CI Print numbers and breakdown of Paid versus Complimentary for IUPAC Only (does not include ACS numbers of Paid) is below.

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	CI Paid AMP	CI Complimentary	Members Comp	CI Comp
38:1	79	1157		
38:2	95	749	467	282
38:3; 38:4	521	776	371	405
38:5	578	825	483	342
38:6	583	910	584	326
<b>Total Copies</b>	<b>1856</b>	<b>4417</b>		
20 USD/copy	\$37,120.00	\$88,340.00		

15.2 STATUS REPORT *PURE AND APPLIED CHEMISTRY*

In order to increase awareness and visibility of publishing in *PAC*, De Gruyter has recently prepared a marketing flyer to be sent to our endorsed conferences. The Secretariat provided the contact list and will continuously update the information for De Gruyter (and Hugh Burrows). A copy of the brochure is in the Agenda book.

See Item 15.5.

## 15.3 VIRTUAL PUBLISHING AND DATABASES

## 15.3.1. IUPAC Standards On Line with De Gruyter

Colin Humphris informed the EC that a recent call with Karin Sora had been held to review the standing of the activities. He stated that De Gruyter had only sold 3 copies (i.e. access) and that IUPAC will consider how to help with the promotion.

## 15.3.2 Solubility Data Series with SpringerNature

Lynn Soby described that discussions were ongoing with SpringerNature as they are interested in obtaining the content of the Solubility Data Series and incorporating it into SpringerMaterials database.

In August 2016, she attended a meeting to review SpringerNatures' capabilities and proposals for the IUPAC SDS with their Director Product Management, Dr. Michael Klinge, Dr. Robin Padilla, Scientific Editor and Sharon George, Content Acquisition. This meeting was important

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for the discussion of possible business options as well as to build a relationship and determine their capabilities and interest. A broader discussion of both organizations was helpful to establish deeper understanding of possible interests beyond the SDS dataset. After consultation with Colin Humphris and Bonnie Lawlor, the decision was to move forward with their proposal. Currently, we are awaiting to receive a formal contract which would provide IUPAC a license fee each year (20,000 €) for the time of use of the SDS (Vol.1-104) and future editions will be compensated at 13,000€ in addition to the license fee. It will take Springer an estimated 5 years to build the database and incorporate it into SpringerMaterials.

#### 15.4 CI EDITORIAL BOARD

Colin Humphris reviewed the activities of the CI Editorial Board. CI EB would still like volunteers from Asia. The EB is getting on with ensuring the article pipeline for CI is full with articles from within the IUPAC community and on chemistry related items from other stakeholders. The EB is seeking to maximize the coverage of major activities by coordinating features in CI, events and papers for PAC such as for Big Data through 2017.

A copy of the CI Editorial Board minutes of 3 October 2016 is included in the Agenda Book.

The CI EB is preparing for a transition to 4 paper editions a year in 2017 that will also be available electronically via De Gruyter. Equally importantly, the Board is also developing a proposal for a digital-first version for the IUPAC website for more immediate news and review articles to be launched in Q1 2017. A key development will be the authentication of those in our community entitled to view the electronic version or those paying for the paper version. Colin Humphris confirmed that the plans for CI had been shared with De Gruyter and that they have no problem with IUPAC developing a digital-first version.

Colin Humphris suggested to work with the Membership Relations Committee to propose new subscriptions for Affiliate members to cover the cost of paper versions going forward if this remains their preference. The eventual default position will be digital to save cost. De Gruyter recommended that a print subscription for CI to be around USD 65. It was pointed out that the number of complimentary copies still is higher than the number of paid subscriptions.

#### 15.5 PAC EDITORIAL ADVISORY BOARD

Richard Hartshorn informed the Executive Committee that the PAC EAB held a conference call on 24 October 2016 and that the primary concern was to ensure that content was continuously available. It was noted that maintaining a sufficient flow of conference papers was important to delivery of the required number of issues.

The membership of the PAC EAB for 2016-2017 has been updated and a current roster is in the Agenda Book.

### 16. THE MOLE PROJECT

The technical report (TR outcome of project 2013-048-1-100) prepared by the task group led by Jurgen Stohner had been sent to the Bureau and to NAOs for input in August 2016.

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Natalia Tarasova referred to the Agenda Book containing the TR, a follow-up memo from Jurgen Stohner, and a more recent letter from Roberto Marquardt.

The proposed definition of the unit mole is:

“ The chemical amount,  $n$ , is a measure of the number of specified elementary entities. An elementary entity may be an atom, a molecule, an ion, an electron, any other particle or specified group of particles. The mole, symbol mol, is the SI unit of chemical amount. One mole contains exactly  $6.022\ 140\ 857 \times 10^{23}$  elementary entities. This number of elementary entities is called the Avogadro number. “

*{The number  $6.022\ 140\ 857 \times 10^{23}$  is used in the TR and in Jurgen Stohner memo of 7 Sep 2016, while Roberto Marquardt in his letter of 20 Oct 2016 used a slightly different value  $6.022\ 141\ 29 \times 10^{23}$ . In the Sep memo, it is noted that “in the definitive version of the new definition of the mole, the number of elementary entities contained in one mole will be that number that will be adopted by the date of July 1, 2017, as explained at the 22nd CCU meeting.}*

In his letter, Roberto Marquardt indicated that the new definition of the mole was highly recommended and well received by CCU. The issue however not only relates to the definition of the unit mole but also to the redefinition of the name for “amount of substance” which in the proposed definition, is referred to as “chemical amount”.

IUPAC is asked by the Chair of CCU, Prof. Joachim Ullrich, to send an official request to the Consultative Committee for Amount of Substance (CCQM) to discuss and eventually adopt the proposed new definition of the quantity “amount of substance” and its SI unit, the mole.

The Executive Committee concurred that the redefinition of the mole will be a significant and valuable clarification for the community and especially for educators. There was no view expressed about the term “chemical amount” itself, and the EC endorsed the recommendation of the task group position.

Motion: The EC endorsed the proposed new definition of the unit mole ~~and the proposed redefinition of the name for “amount of substance”~~. *{strike added following Roberto Marquardt’s request sent to the President on Nov 12; see below}*

Vote: All in favour.

[follow-up/update discussion on Nov 12]

In a letter sent to the President overnight (between Nov 11 and Nov 12), Roberto Marquardt informed the EC that Commission I.1 has reconsidered the text for a new wording of the definition of the mole and, as the result of the discussion, the following suggestion is made:

1. To disentangle the definition of a new name for the physical quantity, *i.e.* the term "chemical amount", from the wording of the new definition of the unit mole.
2. To propose only a new definition of the mole, *i.e.* in the text to write:

"The ~~chemical amount~~ amount of substance,  $n$ , is a measure of the number of specified elementary entities. An elementary entity may be an atom, a molecule, an ion, an electron, any other particle or specified group of particles. The mole, symbol mol, is the SI unit of ~~chemical amount~~ amount of substance. One mole contains

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exactly  $6.022 \times 10^{23}$  elementary entities. This number of elementary entities is called the Avogadro number."

Roberto Marquardt stressed that the term "chemical amount" has been controversially discussed within the Commission for decades. The Commission is of the opinion that a more thorough discussion is needed to propose a new name and more time should be given to that discussion. He also recalled that criticism was raised against the name "chemical amount" also during the off-year meeting of Division I in Lansing, MI, earlier this year and also at the CCU meeting that he attended. Disentangling the two items will be helpful in making the IUPAC proposal acceptable to CCQM, CCU and CIPM.

Action 11: Lynn Soby will confirm with Roberto Marquardt the exact wording to include in the letter to CCU.

### 17. THE NAMING OF NEW ELEMENTS – TASK GROUP REPORT

Natalia Tarasova reviewed briefly the process and the status of the provisional recommendations confirming the names and symbols for elements 113, 115, 117 and 118. Following the end of the public review which was on 8 Nov 2016, Jan Reedijk promptly revised the text of the recommendations, while the proposed names and symbols remain unchanged. The recommendations have been approved by Division II.

Motion: EC approved that the recommendations be put to vote by the Bureau as authorized by Council at its meeting of 13 August 2015.

Vote: All in favour.

Action 12: Lynn Soby will circulate the recommendations to the Bureau for approval.

Next, Natalia Tarasova presented the proposed Terms of Reference that have been outlined jointly with Jan Reedijk and IUPAP for the implementation of a Joint Working Party (JWP). She asked the EC to review the following text and provide feedback.

Two steps were proposed going forward: first is to have a JWP tasked with reviewing the criteria that must be satisfied for the discovery of a new chemical to be recognized; and second, the application of these criteria in practice and have a JWP tasked to review new claims.

The idea is that the first JWP can also include expert members of the laboratories whose recent claims were validated, while the second JWP should not include members of the laboratories filing claims.

{ strikes added following the later discussion }

Terms of Reference for a IUPAC/IUPAP Joint Working Party to Examine the Criteria used to Assign Priorities for the Discovery of New Elements Verify Claims for the Discovery of a New Element

**Rationale:** Some twenty-five years have now elapsed since the criteria that are currently used to verify claims for the discovery of a new element were set down. The recent completion of the naming of the one-hundred and eighteen elements in the first seven periods of the Periodic Table of the elements provides a natural opportunity for a necessary expert review of these criteria in the light of the

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experimental and theoretical advances in the field. It is proposed to set up a IUPAC/IUPAP Joint Working Party (JWP) to examine these criteria under the terms of reference set out below.

### **Composition and Establishment of the JWP**

The JWP will be established following the guidelines below:

1. The Presidents of IUPAC and IUPAP will appoint by mutual agreement a Joint IUPAC/IUPAP Working Party of six members with relevant expertise in the Discovery of New Elements, three to be nominated by the President of IUPAC, with advice from the Division of Inorganic Chemistry; three to be nominated by the President of IUPAP, with advice from the Commission for Nuclear Physics.
2. Appointments are made respecting the importance of continuity and new experience in the process of discovering new elements.
3. The Joint Working Party will elect a Chair and a Vice Chair, subject to the approval of the Presidents of IUPAC and IUPAP.

N.B.: Clearly the restriction excluding the appointment of members from claimant laboratories will not apply as there are no claims currently awaiting verification.

### **Terms of Reference**

The JWP will review and, if necessary, make recommendations for the revision of the criteria originally set down for determining the discovery of a new element and given by the Transfermium Working Group in 1991 [Wapstra *et al* "Discovery of the Transfermium Elements" (*Pure and Appl. Chem.*, Vol.63, No. 6, pp. 879-886 (1991)).

The JWP will report using the procedures laid down below

1. The Joint Working Party shall report within of 12 months on the progress of its work to the Presidents of IUPAC and IUPAP.
2. The Joint Working Party shall also report to the Presidents of IUPAC and IUPAP when there are new developments which it feels should be reported, or when a report is requested by the President of one of the Unions.
3. A copy of the draft report as sent for technical review will be provided to Presidents of IUPAC and IUPAP.
4. A copy of the report of the Joint Working Group as submitted for publication as a Provisional Recommendation in *Pure and Applied Chemistry* will be provided to the Presidents of IUPAC and IUPAP.

~~Should the JWP recommend any changes to these criteria it will examine and include in its Provisional Recommendation its assessment of the effects, if any, that such changes may have on the priorities assigned to any of the recently discovered elements.~~

The JWP report will be approved following the procedure laid down below:

1. The ~~Provisional Recommendation~~ Report, as it is to be published shall be approved by the Presidents of IUPAC and IUPAP, on the advice of the Division of Inorganic Chemistry and the Commission for Nuclear Physics, respectively, and published.
2. The provisional report is open for comment for five months. Comments will be forwarded to the Presidents of IUPAC and IUPAP, who will, with advice from the Division of Inorganic Chemistry and the Commission for Nuclear Physics, respectively, decide whether to make the report final, or on what other action should be taken.

This JWP is set up for the specific task of reviewing and, if necessary, updating these criteria. If and when new claims for the discovery of new elements appear in the literature, a new JWP will be appointed; this later JWP may also examine any assignments made for earlier elements that may have been challenged.

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Full text of Wapstra 1991 “*Discovery of the transfermium elements. Part I: Criteria that must be satisfied for the discovery of a new chemical element to be recognized*” is available as <http://dx.doi.org/10.1351/pac199163060879>

*[resumed review on the following day]*

Richard Hartshorn pointed to inconsistencies and/or redundancies:

1. The title and the 1<sup>st</sup> sentence in the rationale differ and refer two different set of criteria – as the criterion for assigning priority is simple (who did it first), as opposed to the criteria for determining whether a new element has actually been discovered.
2. Referring to the last sentence in the rationale, he suggested that a sentence be added here that explicitly says that this JWP is not for examining any claims, but merely to set the criteria.
3. Referring to the sentence starting with “Should the JWP recommend any changes...”, and recognizing that there might be members of the JWP who are from any of the labs who were involved in any of the past claims, this task should be the first assigned to the second JWP.
4. Referring to the last sentence, it validates the comments made directly above (point 3) and confirm that the task of reexamining the assignment made for earlier claim is a task of a second JWP.

Mark Cesa concurred with the comments made and suggested that the title be revised and the sentence relevant to RH comment 3 be removed.

It was also pointed out that, like the Wapstra 1991 document, the report of the JWP will likely be a Technical Report and not a Recommendation in the ICTNS sense (IUPAC Recommendations are on terminology, nomenclature and symbols). This should be checked with ICTNS chair.

Action 13: Natalia Tarasova will consult again with IUPAP and share the amended version of the ToR.

Natalia Tarasova confirmed that it has been agreed with IUPAP that approval of this document should be obtained before the actual release on the name of the new elements. She recalled that the release of June 8 alluded to the establishment of such a new JWP and an update and clarification should therefore be provided in the release that is in preparation.

Natalia Tarasova will keep the EC informed on the status and final resolution.

## 18. IUPAC COMMITTEE FOR ICSU

### 18.1 2016 ICSU GRANT PROGRAMME APPLICATION

Mark Cesa recalled that IUPAC has contributed to the preparation of a proposal that has been submitted to ICSU on October 1<sup>st</sup>. He invited Mei-Hung Chiu to review that application.

IUPAC has applied to ICSU for a grant in the 2016 ICSU Grants Programme, with the IMU as co-lead applicants and with IUPAP, IAU, IUBS, ICIAM, UNESCO, and GenderInSite as supporting applicants. The proposal is titled, “A Global Approach to the Gender Gap in Mathematical and Natural Sciences: How to measure it, how to reduce it?” A copy of the application is included in the Agenda Book.

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IUPAC would take the lead in managing and coordinating a global survey comparing experiences of men and women scientists globally, and will help identify sources of publication metadata in chemistry for analysis of a joint data-based study on publication patterns.

Review of the proposals by ICSU will take place in November, and announcement of the accepted grant proposals is scheduled for January 2017. IUPAC has pledged up to 10,000 Euros per year for the three-year period of the grant, if the grant is accepted. The IUPAC funding will be applied for as a project proposal.

Mei-Hung Chiu indicated that CCE was prepared to commit 4k if the ICSU grant was awarded.

#### 18.2 UPDATE ON ICSU-ISSC MERGER

Mark Cesa explained that ICSU held an Extraordinary General Assembly on 24 October 2016 in Oslo, Norway, at which a vote was requested by the ICSU leadership to agree in principle to a merger with the International Social Sciences Council, ISSC. The draft of the planning framework for the proposed merger is in the Agenda Book.

Mark Cesa explained briefly that several scenarios were looked at while ultimately the goal of the merger is for both organizations to have a more effective voice in working with policy makers. The outcome of the vote was to pursue the principle of a merger, with the goal of voting on the actual merger by October 2017. The membership of the transition team is still not known, and Mark Cesa suggested that IUPAC should offer to be involved.

Action 14: Mark Cesa will prepare a letter to offer IUPAC support and involvement in the transition team that is to look at scenarios of the ICSU-ISSC merger.

#### 19. MEMBERSHIP RELATIONS COMMITTEE

Mark Cesa informed the EC that he was working with the consultant who helped construct the new IUPAC Strategic Plan to develop a set of value propositions for the major IUPAC stakeholder groups and a strategy for branding the Union's activities. A survey is being developed to gather data to determine stakeholder viewpoints on the current and future of IUPAC to provide the basis for the value propositions.

A copy of the project proposal, which describes the work plan, is included in the Agenda Book.

#### 20. REVIEW OF COMPANY ASSOCIATES PROGRAM

Colin Humphris explained that the Committee on Chemistry and Industry (COCI) has been reviewing the CA program for several years and has now developed a specific plan for a revise this activity. The outline of the proposed CA program is included in the Agenda Book.

The objectives are to increase the engagement and contribution of industry to IUPAC. The proposal defines individual industrial members and three categories of Company Associate membership and their contributions and benefits. The intention will be to seek Council approval for the CA program for formal launch in 2018.

Colin Humphris invited EC members to review the plan in details and provide feedback.



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The renewed program should provide greater engagement with industry. It should also provide a sustainable income (in contrast to the current scheme). Colin Humphris expressed the view that to be significant the income should be on the order of USD 50k per year.

It was noted that such an increase in engagement could have implications for governance. If indeed the industry was to be more engaged, should it be only NAOs that have can vote in IUPAC or nominate people for election?

In principle, the EC supports the new proposed CA schema. Recognizing that questions will arise, Colin Humphris invited the EC to continue this discussion by email.

### 21. IUPAC/SOLVAY AWARD

Lynn Soby confirmed that the announcement for the 2017 IUPAC-Solvay International Award for Young Chemists has been posted on the IUPAC Web site (<https://iupac.org/2017-iupac-solvay-international-award-for-young-chemists>). An online application form has also been developed for submissions and management of the process. Winners of the 2016 Award have also been posted (<https://iupac.org/the-winners-of-the-2016-iupac-solvay-international-award-for-young-chemists/>).

Recognizing that there were relatively few applications last year, the Secretariat will advertise the prize and remind the NAOs of the coming Feb 1<sup>st</sup> deadline for application.

Action 15: Fabienne Meyers to develop a frontpage slide for the website to feature IUPAC-Solvay award and the call for applications.

### 22. PROJECTS IN REVIEW

#### 22.1 PROJECTS IN REVIEW

The most recent report (04 October 2016) of project proposals in review is in the Agenda Book.

#### 22.2 PROJECT AND FINANCIAL REPORT

The most recent project (30 September 2016) and financial report is in the Agenda Book. The format of that report has been revised last year. The report only includes projects that have a none-zero budget.

#### 22.3 EVALUATION COMMITTEE UPDATE

Christopher Brett (chair of the Evaluation Committee) described the work that will be undertaken by the evaluation committee this biennium, of which he is the current chair. The project profile of each division, CCE, COCI and CPCDS will be examined with particular reference to recent past and current projects and other activities, to suggesting best practices and to suggest what to do if unforeseen situations arise in project execution. An activity snapshot will be taken on 31st December 2016.

It is also intended to identify the most successful recent IUPAC projects that IUPAC can and should publicize widely in the media and advertise to NAOs.

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For this purpose, the responsibility of obtaining such information has been distributed between the 5 members of the Evaluation Committee. The information will then be collated and analyzed for presentation in the Sao Paulo GA.

#### 23. THE PHOSAGRO PROJECT

Natalia Tarasova reviewed briefly the recent progress of the PhosAgro/UNESCO/IUPAC Programme on Green Chemistry for Life. The programme, which is a very tangible outcome of the 2011 International Year of Chemistry, has now completed three years of its planned five-year duration. Six awards of approximately €30,000 have been made in each of the years 2014, 2015 and 2016 with the eighteen prizewinners coming from sixteen different countries spread right around the world. The International Jury meets in May of each year in UNESCO Headquarters in Paris and has had the difficult task of choosing the award winners from among the more than three hundred applications received to date. The successful young researchers have made presentations at a special meeting at the headquarters of PhosAgro in Moscow, at the IUPAC General Assembly at Busan, at a meeting of the Scientific Advisory Board of the UN Secretary General in St. Petersburg and, most recently at the 6th IUPAC Conference on Green Chemistry in Venice in September 2016. An additional special Prize for a project associated with phosphogypsum has now been added by the sponsor and the call for this, as well as for the six regular prizes for 2017, is now open with a closing date of 28 February 2017.

This has been an outstandingly successful program attracting as it has young researchers from the best-known Institutions in the world of green chemistry as also very importantly from many of the countries in the developing world. It is to be hoped that its success can be maintained and grown even further after this initial five-year program.

Colin Humphris asked if PhosAgro will have a problem if IUPAC was to approach other companies to do a similar program. Natalia Tarasova did not think so; however, one must also recognize the partnership with UNESCO which coordinates the program in practical terms.

#### 24. INCHI TRUST

Richard Hartshorn referred to his report from the meeting of the InChI Trust that is provided for information.

The more recent work on mixtures, reactions, and QR codes is likely to expose InChI to new applications beyond the publishing and traditional data management. The Trust is planning an InChI Conference not only to review progress on all the current projects but also to explore new ideas. The meeting will be held 16-18 Sep 2017 in Washington DC

<https://iupac.org/event/chemical-identifier/>

#### 25. NPU

Colin Humphris briefly informed the EC that he continues to monitor developments and the international adoption of NPU; now in Denmark, Sweden and Norway. IUPAC has renewed the agreement for the operation of the steering committee that involves IUPAC, IFCC and the participating nations.

*{the relevant IUPAC project is <https://iupac.org/project/2014-017-1-700> }*

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#### **26. 2019 GENERAL ASSEMBLY & CONGRESS, PARIS, FRANCE**

Lynn Soby referred to the Agenda Book which includes their updated presentation. She reported that the organizing committee has been very active and has recently submitted its Scientific Program proposal to IUPAC Division Presidents and Standing Committee Chairs, with comments due by 31 December 2016.

Lynn Soby also informed the EC that alternative locations were being explored, especially for the Council meeting, recognizing that the auditorium at the Convention Center might not be optimum. The importance of having a single point of contact (Lynn Soby) with Congress organizers was also noted.

Action 16: Lynn Soby to resolve and confirm the locations with the 2019 Paris Congress organizers.

#### **27. IUPAC 100 - CENTENARY PLANNING STEERING GROUP**

Natalia Tarasova referred to the interim report of the Centenary Planning Steering Group included in the Agenda Book and invited Mary Garson to present remotely. A connection via GoToMeeting was established.

Mary Garson reported that the group has had a couple of calls but has not yet reached a steady momentum of activities. An unknown parameter and issue of concern is related to fundraising and the consensus among the Steering Group is that there is a need for a separate subcommittee to focus on fundraising initiatives. Mary Garson indicated that she has had a call with Lynn Soby about this issue and they would like the Treasurer to join the group, which already includes Mark Cesa and Bonnie Lawlor.

Colin Humphris stated that he was willing to join the IUPAC100 Fundraising Subcommittee.

Colin Humphris indicated that he is willing to approach ICCA and various chemical industry related organizations but in all cases, we must formulate an approach by which they can easily identify an activity or reason to commit support. He recalled that during IYC, the specific Water activity was effective. He stressed that IUPAC100 needs to outline specific proposals for specific sponsors.

Mary Garson indicated that she will work with Lynn Soby to make an initial review of CAs that may be interested in approaching various sectors. Colin Humphris proposed to discuss with Bernard West how best to approach the industries.

Mary Garson recalled that a project proposal was currently under review. In addition, it was suggested that specific terms of reference might help clarify the duties and responsibility of the IUPAC100 management group. Mary Garson also indicated that the group should be meeting at the occasion of the GA in Brazil, and that a specific time not clashing with other meetings has to be identified.

The comment was made that as the planning is progressing, a more predominant spot on the website should feature the centenary activities.

#### **28. INTERNATIONAL YEAR OF THE PERIODIC TABLE OF THE ELEMENTS**

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*[the item was discussed before item 27 and intertwined with 29]*

Chris Brett reviewed the recent developments made towards a possible International Year of the Periodic Table of the Elements. 2019 will celebrate the 150-year anniversary of D. Mendeleev's publication of the Periodic Table. Initial contacts with EuCheMS, RSC (UK) and IUPAP suggest that there is a tangible interest in putting forth a request to the UN/UNESCO to recognize 2019 as the International Year of the Periodic Table. The idea to request that 2019 be designated as the "International Year of the Periodic Table" has been welcomed by the IUPAC100 Steering Group.

Chris Brett reported that he had an initial call with Peter Mahaffy to review how the process has been accomplished in advance of IYC2011. In the case of IYPT the Russian delegation via the foreign minister could lead the submission to UNESCO. Chris Brett recognized that a lot of preparative work had been done earlier (as much as 3 to 4 years in advance of IYC) by Julia Hasler and within UNESCO. Chris Brett foresees that beside the iconic periodic table, a case can be made that the sustainability of key elements is a challenge and that scarcity of specific elements is to be addressed.

Colin Humphris questioned the need to add such IYPT when 2019 is already IUPAC100. His concern is that IUPAC will lose full control of the planning by 'diluting' the focus. He asked what will IYPT add to the IUPAC100 celebration opportunity.

Natalia Tarasova invited all EC members to continue sharing views and comments and suggested that we await for the feedback that is now expected from the preliminary discussions she has had with the UNESCO contact (the same person working on the PhosAgro program).

### **29. INTERNATIONAL YEAR OF POLYMERS**

Natalia Tarasova referred to the report included in the Agenda Book which is a summary provided by Alexei Khokhlov to Greg Russell. She informed the EC that these plans towards a possible 2020 International Year of Polymers were being developed separately and that it was not clear how this would conflict with plans for the IYPT. Some might consider that both years are in conflict.

Richard Hartshorn reported that Wolfram Koch has indicated that he will favour an IYP but not an IYPT. Yet, it is unclear if Koch's view is personal or that of the GDCh.

Action 17: Richard Hartshorn will ask Wolfram Koch about the GDCh position viz a proposal for an International Year of Polymers for 2020.

Natalia Tarasova suggested that IUPAC keeps a close oversight on developments. She perceived that instead, the case for IYP could be better put forth to UNESCO with the support of the German delegates.

### **30. OPCW**

#### 30.1 MOU UPDATE

Mark Cesa confirmed that IUPAC and the Organization for the Prohibition of Chemical Weapons (OPCW) are developing a Memorandum of Understanding to outline a framework for

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cooperation between the organizations with a view towards achieving their common objectives and providing benefits to their respective areas of work. A draft should be available soon and be ready for signature early December. The main contact at OPCW is Jonathan Forman.

#### 30.2 2017 WORKSHOP ON REMOTE SENSING

Mark Cesa informed the EC that IUPAC was currently working with OPCW to organize a workshop on remote sensing, to be scheduled for July 2017 {*Dr. Cesa to confirm month/date*}. This workshop is the latest in a series of workshops to identify recent developments in science and technology related to the Chemical Weapons Convention. The results of this workshop will be part of a report that the OPCW Technical Secretariat and the OPCW Scientific Advisory Board will make in advance of the 2018 Review Conference for the CWC.

Bernard West and Laura McConnell are part of a planning committee that will work on organizing the scientific outline of the workshop. Attendance at the workshop will be by invitation only. The location is still to be confirmed. Mark Cesa indicated that two options were being considered: Brazil and Canada.

After discussion, the EC took the view that there is not likely to be significant benefit in having such a workshop held at the GA/Congress.

#### 30.3 ADVISORY BOARD ON EDUCATION AND OUTREACH

Mark Cesa reported that in 2016 OPCW established an Advisory Board on Education and Outreach, in which IUPAC has permanent observer status. Mark Cesa attended the first two meetings.

Natalia Tarasova will attend the next Session of the Conference of the States Parties, and she will continue to explore what is best to build a strong collaboration.

### 31. EUChEMS SEVILLE DECLARATION ON THE USE OF CHLORINE IN WARFARE

Mark Cesa reported that in reaction to recent news of possible chemical attacks in Syria and elsewhere, a declaration condemning the use of chlorine and other chemicals as weapons (<http://www.euchems.eu/seville-declaration-use-chlorine-warfare/>) was signed at the EuCheMS Congress in Seville, Spain in September 2016. The leaders of nearly every chemistry organization belonging to EuCheMS signed the declaration. Other regional chemistry organizations are considering similar declarations or communications on the issue to OPCW.

Mark Cesa suggested the EC consider endorsing this declaration and writing to OPCW.

Motion: The EC endorses the Seville Declaration condemning the use of chlorine in warfare.  
Vote: All in favour.

Action 18: Mark Cesa will prepare a letter and Lynn Soby will proceed to sign online the Seville Declaration.

### 32. CONFERENCE ENDORSEMENT/SUPPORTED PROGRAM

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#### 32.1 RATIFICATION OF ENDORSEMENT AND FINANCIALLY SUPPORTED CONFERENCES

The EC was asked to ratify the endorsed and supported conferences approved after the Council meeting in Busan 10 August 2015 to 18 October 2016. An updated list is provided in the Agenda book listing 26 Endorsed Conferences and 2 Financially Supported Conferences.

There was no question, no comments.

Motion: The EC ratified the conference endorsement approved since the last meeting and as listed in the Agenda Book. The motion was approved unanimously. This approval encompassed 26 conferences.

Vote: All in favour.

#### 33. NEXT BUREAU MEETING

The next Bureau meeting is scheduled for 8 April 2017 and will be held remotely via GoTo Meeting from the Secretariat's Office.

Lynn Soby confirmed that the officers will attend in person from the Secretariat. Time should be scheduled to review the items that require action and/or clarification in advance and for the preparation for the Council.

#### 34. DATES AND PLACE OF NEXT EXECUTIVE COMMITTEE MEETING

Natalia Tarasova confirmed that the EC will meet next in São Paulo. Also, later in the year, there will be a transition meeting including incoming and outgoing members. She had initially thought that such a meeting could be organized at the time of the 7<sup>th</sup> ICGC in early October in Moscow, but that date is not suitable for the Secretary General.

Colin Humphris offered to inquire to the RSC if a meeting can be held in November in Cambridge. Richard Hartshorn will confirm what dates will be suitable for him and a poll will follow.

#### 35. ANY OTHER BUSINESS

Natalia Tarasova invited the EC to review Item 16 again and showed an update that she received overnight from Roberto Marquardt. See amendments report in item 16.

The President thanked everyone for their participation and thanked our host for the practical arrangements.

The Past President thanked the President for her effective management of an agenda which was full and complex.

[end]