

**IEA Technology Collaboration Program on High Temperature Superconductivity
(HTS TCP)**

Draft Minutes from the
Executive Committee Meeting
20 September 2017
Geneva, Switzerland

ExCo Participants:

Germany:	Tabea Arndt Mathias Noe
IEA:	Luis Munuera (by phone)
Italy:	Luciano Martini (Chair) Giuliano Angeli
Japan:	Hiroyuki Ohsaki (Vice Chair) Susumu Kinoshita Yutaka Yamada (Operating Agent)
Switzerland:	Bertrand Dutoit
United States:	Brian Marchionini (Operating Agent)

Observers:

CERN:	Gijs De Rijk
France:	Jean-Maxime Saugrain
Switzerland:	Nicolo Riva Jiabin Yang

1. Welcome, apologies for absence and agenda approval

- Luciano opened the meeting with brief introductions by all attendees and overview of the main goals of the IEA's TCP program
- Agenda for ExCo meeting approved without comment
- Apologies from:
 - Dang Chul Han (Korea)
 - Debbie Haught (USA)
 - Guy Deutscher (Israel)
 - Roland Bruniger (Switzerland)
 - Gianni Grasso/Matteo Tropeano (Columbus (sponsor))
- Welcomed Jean-Maxime Saugrain from Nexans/France and Gijs De Rijk from CERN as observers as well as two PhD students of Bertrand Dutoit's.

2. IEA Update

- Luis Munuera, the TCP desk officer from the IEA, presented slides from ISGAN ExCo on the key findings from IEA's recent publications
- Highlighted upcoming events, including
 - TCP Universal meeting
 - Launch of three publications: World Energy Outlook, Digitalization and Energy, Energy and Development
 - IEA Ministerial meeting
- Answered questions from TCP members
 - Can a PDF be distributed to ExCo members? PDF of presentation can be distributed to ExCo members
 - Why is storage shown as on track? Storage is shown as on track as it showed a lot of growth over the last year on a global scale, going from 400 MW to 800 MW
- **Next steps:** ExCo members who would like to comment or send questions on the presentation can submit comments to Operating Agents to send to Luis in the next few weeks

3. Overview of the last ExCo Meeting

- Yutaka Yamada provided an overview of the ExCo meeting hosted by NEDO in Kawasaki, Japan from July 3-5, 2017
 - Jean-Maxime Saugrain joined the meeting as an observer/potential member and explained activity at Nexans in HTS
 - Companies based in Japan with HTS activities presented project updates
 - Included a round table discussion for HTS cable commercialization for future programs

4. Approval of minutes from last ExCo Meeting

- Approved without comment

5. Financial report: HTS-TCP account status, collected fees, and discussion of modified fees

- TCP is moving from a fee based on country size to a two tier system based on GDP
- Budget is healthy

Country/sponsor	GDP(\$T)	Fee
USA	18.6	\$30,000
Japan	4.9	\$30,000
Germany	3.5	\$30,000
France	2.5	\$15,000
Italy	1.85	\$15,000
Canada	1.53	\$15,000
Korea	1.41	\$15,000
Switzerland	0.66	\$15,000

Israel	0.32	\$15,000
Finland	0.24	\$15,000
Sponsors fee	-	\$10,000
		>\$190,000

6. New member engagement

- It is important that the ExCo represents global HTS activity
- France is considering joining, and ExCo is looking into engaging China and Russia
- Luis Munuera will pass the information about France's interest in joining as a country representative to the IEA legal office and will provide information on guidance/procedure for incorporating a new member
- Incorporating non-OECD countries is different
 - IEA has some contacts and a way to reach out on the government side but ExCo should give guidance on what agencies they should contact
- Luis will also provide guidance on including CERN as an observer or sponsor (the fusion TCP has an international organization – ITER – in its membership, so it must be possible)
- Gijs De Rijk suggested that ExCo also target the Netherlands for membership, possibly through the University of Twente

7. Review OA/ExCo activities

- Submitted paper and poster to EUCAS on the activities that the TCP is undertaking and the importance of standards
 - If published, will provide publicity for the group and will reinforce the need for standards
- Publish quarterly newsletter
 - Encompass highlights from the industry and recent achievements
 - Currently goes on website but there may be interest in distributing it more widely, to both the ExCo and to broader community
- ExCo is developing a fact sheet in two technology areas (cables and FCLs) and policy (geared towards people not working in the superconductivity industry)
 - Mathias Noe proposed development of a third fact sheet: rotating machines
 - ExCo will be analyzing the possibility of developing graphics for the fact sheets
- Annual report highlights the annual activities of the TCP for both the IEA and ExCo countries
 - Annual report will be completed in early 2018
 - ExCo members have asked for draft materials in early December 2017 to provide management with updates before the end of 2017

8. Technical meeting updates

- Yutaka Yamada provided an update on the 14th Chinese superconductivity conference

- Similar structure to EUCAS and ASC with plenary, oral presentations, and posters
- Content broken down into wire, applications, and basic science
- Exhibitors included the Futong group, which previously worked in fiber optics but is moving into HTS cables and led a site tour
- MRI is very active and growing rapidly in China
- There are now 3 wire companies working on YBCO in the Shanghai area:
 - Shanghai Supercond. Technol. Co., Ltd (SSTC)/Shanghai Jiao Tong Univ.
 - Developed 500 m wire, also possible to develop 1000 m
 - Shanghai Creative Supercond. Technol. Co. Ltd (SCSTC)/Shanghai Univ.
 - Suzhou Advanced Materials (SAMRI)
- Two other companies have made wire longer than 500 m, which should be cost-competitive
- IEE-CAS working in many applications, including developing HTS motors
- Western Superconductor working with titanium; successfully developed Niobium (Nb) Titanium for ITER project
- Xian group presented on 550kV FCL Y +Bi wire – high voltage FCL
- 2G HTS Cable System from Shanghai Electric Cable Research Institute
 - Shanghai Electric Cable Research Institute – large company with subsidiaries that make cable
 - Design 35kV/2000A – 120 MVA; length ~50m with HTS conductor length ~13 km; cold dielectric design
 - Hardware deliverables include:
 - Three ~50m long phase conductors
 - Six 35 kV outdoor terminations
 - Intent on making HTS cable in Shanghai
- HTS Cable demonstration site tour – Futong Group
 - Site: Tianjin works
 - HTS cable demonstration: 35kV, 1kA, 1 km YBCO SWCC wire, cable supply
- European Cryogenics Days 2017 and the 2nd International Workshop on Cooling Systems for HTS Applications, Sep 13-15
 - Well-attended with 132 people
 - Cryogenics in Astrophysics, Particle Physics and Computing, Cryogenics in Transportation, Air Separation and Power Applications, Power Grid Applications, Novel Machinery, Small-scale Applications (SQUIDS, etc)
 - Technical Excursion to Karlsruhe Tritium Neutrino Experiment KATRIN and HTS lab

9. Proposed OA/ExCo activities for next fiscal year

- ExCo members went around the table and presented ideas for OA tasks for next fiscal year

- Proposed activities
 - Submit comments/questions on IEA presentation and add opinion from the TCP on where HTS technology could contribute
 - Update website with new information and increase web traffic to site
 - Fall HTS newsletter (Yamada)
 - Look into using part of budget to support Superconductivity News Forum as a sponsor
 - Develop a new fact sheets/brochures focused on
 - Rotating machines
 - Storage
 - DC vs AC, the main challenges, differences, and feasibility?
 - Develop mailing list to distribute newsletter
 - Develop new graphics for fact sheet, possible logo rebranding (Brian/Anna)
 - Cable right of way comparison
 - Identify conferences to attend and get on agenda to present
 - Develop abstract idea for ASC 2018
 - Define appropriate person in China to join TCP in 2018 (Yamada)
 - Update spreadsheet of projects for world projects at a glance (Yamada)
 - Look into hosting a meeting or workshop in country that ExCo is targeting for membership (China, Russia)

10. Date and place of next ExCo Meeting(s)

- US (Venkat Selvamanickam from University of Houston) has agreed to host the next ExCo meeting in Houston in April 2017
 - Brian will send Doodle poll with dates (April 4-6 or April 9-11)
- Two options for fall meeting: ASC or elsewhere as a separate meeting (Lausanne?)
 - Organizer of ASC approached ExCo about repeating the special session organized for previous ASC meeting
 - Pros and cons for both options (meeting at ASC may mean less time for ExCo meeting as members are busy with the conference but it is convenient as members are already traveling for this meeting, separate meeting would mean more time but members would have to travel)
 - Brian will send Doodle poll about options

11. Upcoming Events

- Luciano will attend universal TCP meetings at IEA
- ASC 2018
 - Members with ideas for a special session topic should pass to Brian

12. Strategy Session

- ExCo needs to conduct an internal self-assessment from time to time
- In future, plans to conduct SWOT analysis

13. AOB

Task	Due Date	Status	Lead
Email Selva about proposed dates + Send Doodle to ExCo to set next two mtg dates (April 4-6, April 9-11) 2.5 day mtg max and fall meeting at ASC (0.5-1 day meeting on Sat or Sun)	ASAP		Brian
Send msg to Luis to follow-up on status of France (letters, communication) (thank you for your presentation; we have comments; + membership of France ASAP)	ASAP		Brian
Follow-up with IEA contact for France incorporation	ASAP + 1 week		Brian/Luciano
Ask IEA what appropriate procedure is for engaging non OECD countries	2 weeks		Brian/Luciano
Circulate meeting minutes to ExCo members (send only to ExCo members that attended the meeting.	1 week		Brian/Anna
Send final draft minutes to all ExCo members and observers	1 month		Brian/Anna
Update FCL, Cable and Policy fact sheet	2 weeks		Brian/Anna
Wire update-place, material, tech characteristics	1.5 months		Yamada
Update website (world projects at a glance) with new info from EUCAS	1.5 months		
Preliminary Draft of Annual Report 2017 available to ExCo members	8 Dec		Brian/Anna
Explore and nurture relationship with CERN and NL. Keep them informed about our activities			Bertrand
Inquire to IEA contact for possible CERN joining the TCP			Luciano
Provide example of transmission right of way graphics of HTS cables			Mathias and Jean Maxime
Provide technical content on rotating machines (presidium addition)			Ohsaki and Tabea
Coordination of meeting in the US and mtg agenda			Brian/Debbie

14. End of ExCo Meeting